NEW YORK INDEPENDENT SYSTEM OPERATOR

New York Independent System Operator

Market Settlement ~~Rules & Processes~~Settlements Guide

Version 1.2~~8~~~~7~~9

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(The only update is the name change and date).

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1 Settlement Rules

1.1 Power Suppliers

1.1.1 Day-Ahead Market Energy

1.1.1.1 Description

The Power Supplier Day Ahead Market (DAM) Energy settlement ($) is intended to compensate Power Suppliers for DAM energy sales via energy schedules to the NYISO DAM.

DAM Energy Schedules are New York Control Area (NYCA) sales of energy by Market Participants (acting as Power Suppliers) which are scheduled by the NYISO in the DAM. DAM Energy Schedules are scheduled in the DAM scheduling process.

The Power Supplier DAM Energy settlement is based on the Power Supplier's DAM scheduled energy (MW) net any scheduled transactional energy at a given generation bus, multiplied times the three corresponding generation bus DAM price ($/MW) components (energy, loss, and congestion). The settlement is determined at the hourly-level for each Power Supplier - Generation Bus.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Power Supplier Settlement for energy sales to the NYISO DAM.
- *Losses Settlement* - Power Supplier Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by energy sales to the NYISO DAM.
- *Congestion Settlement* - Power Supplier Settlement for congestion created/eliminated on the NYCA system by energy sales to the NYISO DAM.

NOTE: This settlement rule is written from the standpoint that Day Ahead Market Energy is a payment to Power Suppliers for DAM energy sales. However, this calculation can also be a charge if scheduled transactional energy is greater than DAM scheduled energy.

1.1.1.2 Required Data Elements

1.1.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Price :Gen ($/MW)	Hourly Day Ahead Market Energy Price - Generator ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component)	Y
	Hr DAM Loss Price :Gen ($/MW)	Hourly Day Ahead Market Loss Price - Generator ($/MW) is a number representing the price of losses at a generator bus (LBMP loss component)	Y
	Hr DAM Cong Price :Gen ($/MW)	Hourly Day Ahead Market Congestion Price - Generator ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component)	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MWh) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a	Y

Bill Code	Title	Business Description	DSS Value
		generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales)	
	Hr DAM Sched Trans :Gen (MW)	Day Ahead Scheduled Transactions (MW) is a number representing the total amount of energy scheduled by the NYISO for all transactions for a given generator, for a given hour	Y

1.1.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
202	Hr NYISO DAM Energy (MWh)	NYISO Day-Ahead Market Energy (MWh) is a number representing the amount of generation settled in the NYISO Day-Ahead Market	Y
	Hr DAM Energy Stlmnt :Gen ($)	Day Ahead Market Energy Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's Day Ahead Market energy component settlement	Y
	Hr DAM Loss Stlmnt :Gen ($)	Day Ahead Market Loss Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's Day Ahead Market loss component settlement	Y
	Hr DAM Cong Stlmnt :Gen ($)	Day Ahead Market Congestion Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's Day Ahead Market congestion component settlement	Y

1.1.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
204	Hr Total DAM Stlmnt :Gen ($)	Total Day Ahead Market Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's total Day Ahead Market energy settlement; sum of the DAM energy, loss, and congestion component settlements.	Y

1.1.1.3 Eligibility

Power Suppliers will be credited for Day Ahead Market (DAM) Energy ($) if:

- The Power Supplier's generation bus is scheduled to sell energy (MW) in the NYISO DAM (Hr NYISO DAM Energy (MWh) > 0).

NOTE: Power Suppliers can also be charged for Day Ahead Market (DAM) Energy ($) if scheduled transactional energy is greater than DAM scheduled energy (Hr NYISO DAM Energy (MWh) < 0).

1.1.1.4 Settlement Algorithm

Hr Total DAM Stlmnt :Gen ($) is calculated as:

Hr Total DAM Stlmnt :Gen ($) =

Hr DAM Energy Stlmnt :Gen ($) + Hr DAM Loss Stlmnt :Gen ($) - Hr DAM Cong Stlmnt :Gen ($)

Where:

Hr DAM Energy Stlmnt :Gen ($) =

Hr NYISO DAM Energy (MWh) * Hr DAM Energy Price :Gen ($/MW)

Hr DAM Loss Stlmnt :Gen ($) =

Hr NYISO DAM Energy (MWh) * Hr DAM Loss Price :Gen ($/MW)

Hr DAM Cong Stlmnt :Gen ($) =

Hr NYISO DAM Energy (MWh) * Hr DAM Cong Price :Gen ($/MW)

And Hr NYISO DAM Energy (MWh) =

Hr DAM Sched Gen (MWh) - Hr DAM Sched Trans :Gen (MW)

1.1.1.5 Additional Information

Hr DAM Total Price :Gen ($/MW) can be calculated as:

Hr DAM Total Price :Gen ($/MW) =

Hr DAM Energy Price :Gen ($/MW) + Hr DAM Loss Price :Gen ($/MW) - Hr DAM Cong Price :Gen ($/MW)

Scheduling of Transaction Contracts

While Power Suppliers may sell electricity to the pool, they may also sell electricity directly to specific Load Serving Entities through Transaction Contracts. If a power supplier is party to a Transaction Contract, the Power Supplier must report how much electricity they are contractually bound to provide to their counter-parties. Since the NYISO dispatches a generator's total energy output (NYISO market energy plus transactions), NYISO needs to know how much energy the generator needs to produce to fulfill its transaction contractual responsibilities and how much it offers (bids) to sell in the NYISO DAM.

1.1.1.6 References

The applicability of Power Supplier Day Ahead Market Energy Payments is described within Article 4 (Section 4.16) of the MST (Market Administration and Control Area Services Tariff).

1.1.2 Balancing Market Energy

1.1.2.1 Description

The Power Supplier Balancing Market Energy settlement ($) is intended to credit or charge Market Participants acting as Power Suppliers for Balancing Market energy sold or purchased in the NYISO Balancing Energy Market. This settlement accounts for energy variations in a generator's real-time dispatch from what is sold in the NYISO DAM and/or via DAM Transaction Schedules.

Since this settlement addresses energy variations from the DAM, it can be either a credit or a charge to the Power Supplier. The Power Supplier will be charged for balancing market energy in cases where the generator sold more energy in the DAM and/or via DAM Transaction Schedules than it is dispatched in Real-Time (RT < DAM). Otherwise, the Power Supplier will be credited for balancing market energy in cases where the generator sold less energy in the DAM and/or via DAM Transaction Schedules than it is dispatched in Real-Time (RT > DAM).

The Power Supplier Balancing Market Energy settlement is based on the Power Supplier's Real-Time actual generation minus its Total Scheduled Transaction Energy minus it's DAM Sold Energy (MW) at a given generator, multiplied times the three corresponding bus Real-Time price ($/MW) components (energy, loss, and congestion). The settlement is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Power Supplier - Generator where Balancing Market Energy is not equal to zero.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Power Supplier Settlement for energy sold to or purchased from the NYISO Balancing Energy Market.
- *Losses Settlement* - Power Supplier Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by energy sales/purchases in the NYISO Balancing Energy Market.
- *Congestion Settlement* - Power Supplier Settlement for congestion created/eliminated on the NYCA system by energy sales/purchases in the NYISO Balancing Energy Market.

1.1.2.2 Required Data Elements

1.1.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen PTID	Generator PTID is a number representing the unique point identifier for a generator.	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MWh) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales)	Y
	Hr DAM Sched Trans :Gen (MW)	Day Ahead Scheduled Transactions (MW) is a number representing the total amount of energy scheduled by the NYISO for all transactions for a given generator, for a given hour	Y

Bill Code	Title	Business Description	DSS Value
	SCD RT Sched Trans :Gen (MW)	Real-Time Scheduled Transaction (MW) is a number representing the total amount of transaction energy for all transactions injected at a given generator, for an SCD interval.	Y
	SCD AGC Basepoint (MW)	Automatic Generation Control Basepoint (MW) is a number representing the amount of generator energy scheduled, including generator regulation control, by the NYISO during real-time dispatch for the generator; ~6 second time intervals communicated to the generator to support real-time generation dispatch	Y
	SCD Basepoint (MW)	Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated over approximately 5 minute time intervals communicated to support generation dispatch	Y
	Hr Gen Upper Op Limit (MW)	Hourly Generator Upper Operating Limit (MW) is a number indicating the maximum operating capacity for a generator during the given operating status interval.	N
	SCD Energy Pmt Limit (MW)	Energy Payment Limit (MW) is a number representing the maximum amount of generation for which a balancing market energy payment is applicable	Y
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y
5220	Hr Out of Merit Type Desc	Hourly Out of Merit Type Description represents the reason for an out of economic merit dispatch for the given generator and hour.	Y
	Hr Out of Merit Type ID	Hourly Out of Merit Type ID is a number representing the reason for an out of economic merit dispatch for the given generator and hour.	Y
	SCD In Service Ind	In Service Indicator is a character representing whether or not the generator is in service (physically connected and providing energy onto the NYISO electrical grid)	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

Bill Code	Title	Business Description	DSS Value
5260	SCD On Control Ind	On Control Indicator is a character representing whether or not the generator is on NYISO regulation control	Y
	SCD Reserve Pickup Ind	SCD Reserve Pick Up Indicator is a character which indicates whether the SCD interval was initiated as a reserve pickup.	Y
	SCD PURPA Units Class Type	PURPA Class Type is a character representing the class of the PURPA Generator (Class 1 or Class 2)	Y
	SCD RT Energy Price :Gen ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component)	Y
	SCD RT Loss Price :Gen ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component)	Y
	SCD RT Cong Price :Gen ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component)	Y
	Hr DAM Energy Price :Gen ($/MW)	Hourly Day Ahead Market Energy Price - Generator ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component)	Y
	Hr DAM Loss Price :Gen ($/MW)	Hourly Day Ahead Market Loss Price - Generator ($/MW) is a number representing the price of losses at a generator bus (LBMP loss component)	Y
	Hr DAM Cong Price :Gen ($/MW)	Hourly Day Ahead Market Congestion Price - Generator ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component)	Y
	SCD RT Sched Trans :GilboaPump (MW)	SCD Real-Time Scheduled Transactions - Gilboa Pump Bus (MW) is a number representing the total amount of real-time scheduled transaction energy (MW) at the Gilboa generator's pumping/load bus for the given SCD-interval.	N
	Hr DAM Sched Load :GilboaPump (MW)	Hourly Day Ahead Market (DAM) Scheduled Load Gilboa Pump Bus (MW) is a number representing the total amount of load purchased at the Gilboa generator's pumping/load bus from the NYISO Day-Ahead Market for the given hour.	N
217	Hr DAM Sched Reg Avail (MWh)	Hourly Day Ahead Market Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Day Ahead Market for the given hour.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Sched Reg Avail (MWh)	Hourly Hour Ahead Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market for the given hour.	Y
	Hr DAM Sched 10Sync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10Sync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr DAM Sched 10NSync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr DAM Sched 30Min Avail (MWh)	Hourly Day Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 30Min Avail (MWh)	Hourly Hour Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y

1.1.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD Gen CLR Energy (MW)	SCD Generation Capacity Limited Resource Energy (MW) is a number representing the total amount of capacity; as determined by Day Ahead Market availability; that is settled in the NYISO Balancing Market for a given generator for a given SCD interval.	N
	SCD Gen BalMkt Basis (MW)	SCD Generation Balancing Market Basis (MW) is a number representing the generation output value used as the basis for the determination of the amount of the given generator's balancing market energy (MW), for the given SCD-interval.	N
	SCD Gen BalMkt Energy (MW)	SCD Generation Balancing Market Energy (MW) is a number representing the total amount of energy that is settled in the NYISO Balancing Market for a given generator for a given SCD interval. The value is determined as follows: Generator Adjusted Energy - Day-Ahead Scheduled Energy - (RT Transactions Scheduled - DA Transactions Scheduled)	Y
	SCD RT Total Price :Gen ($/MW)	Total Real-Time Price ($/MW) is a number representing the total LBMP price of a generator bus	Y
	SCD BalMkt Energy Stlmnt :Gen ($)	Balancing Market Energy Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's balancing energy market energy component settlement	Y
	SCD BalMkt Loss Stlmnt :Gen ($)	Balancing Market Loss Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's balancing energy market loss component settlement	Y
	SCD BalMkt Cong Stlmnt :Gen ($)	Balancing Market Congestion Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's balancing energy market congestion component settlement	Y

1.1.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt Stlmnt :Gen ($)	Total Balancing Market Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's total balancing energy market settlement; sum of the balancing energy market energy, loss, and congestion component settlements	Y

1.1.2.3 Eligibility

Power Suppliers will be credited for Balancing Market Energy ($) if:

- The Power Supplier's generator sells balancing market energy (MW) to the NYISO Balancing Energy Market (SCD Gen BalMkt Energy (MW) > 0).

Power Suppliers will be charged for Balancing Market Energy ($) if:

- The Power Supplier's generator purchases balancing market energy (MW) from the NYISO Balancing Energy Market (SCD Gen BalMkt Energy (MW) < 0).

1.1.2.4 Settlement Algorithm

SCD Total BalMkt Stlmnt :Gen ($) is calculated as:

SCD Total BalMkt Stlmnt :Gen ($) =

SCD BalMkt Energy Stlmnt :Gen ($) + SCD BalMkt Loss Stlmnt :Gen ($) - SCD BalMkt Cong Stlmnt :Gen ($)

Where:

SCD BalMkt Energy Stlmnt :Gen ($) =

SCD Gen BalMkt Energy (MW) * SCD RT Energy Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}[1]

SCD BalMkt Loss Stlmnt :Gen ($) =

SCD Gen BalMkt Energy (MW) * SCD RT Loss Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

SCD BalMkt Cong Stlmnt :Gen ($) =

SCD Gen BalMkt Energy (MW) * SCD RT Cong Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

And SCD Gen BalMkt Energy (MW) is calculated as follows:

SCD Gen BalMkt Energy (MW) =

~~[Max{~~SCD Gen BalMkt Basis (MW)~~, 0}~~ - Hr DAM Sched Gen (MWh) - {SCD RT Sched Trans :Gen (MW) - Hr DAM Sched Trans :Gen (MW)}~~]~~

Where the determination of SCD Gen BalMkt Basis (MW) varies under a couple of different scenarios:

[1] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

1. Out of Merit Generators
2. Non-Regulating Generators (Gilboa)
3. In Service Regulating Generators
4. ~~In Service~~ Non-Regulating Generators
5. Off Service Generators

~~3.In Service Regulating Generators~~

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(1) Out of Merit generator:

If the generator was considered out of merit for the given hour (Hr Out of Merit Flag = "Y"), OR was a PURPA generator not providing regulation or reserves (SCD PURPA Units Class Type = 1 or 2, AND NOT (Hr DAM/HAM Sched Reg Avail (MWh) > 0 or Hr DAM/HAM Sched 10Sync Avail (MWh) > 0 or Hr DAM/HAM Sched 10NSync Avail (MWh) > 0 or Hr DAM/HAM Sched 30Min Avail (MWh) > 0)), the basis value will always be set to the generators adjusted energy:

SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)

*(2) For a Gilboa (*Gen PTID = 23599, 23756, 23757, 23758, or 23759*) and Non-Regulating (SCD On Control Ind <> "Y") generator:*

The Gilboa generators will be settled using their Adjusted Energy (MW), as follows:

SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)

~~*(1) For an In Service (SCD In Service Ind = "Y" or "R") and a Non-Regulating (SCD On Control Ind <> "Y") generator:*~~

~~If the generator under-generated during the interval, or the given SCD Interval was a Reserve Pickup Interval (SCD Gen Adjusted Energy (MW) < SCD Basepoint (MW) or SCD Reserve Pickup Ind = "Y"):~~

~~SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)~~

~~Else the generator produced as expected or over-generated during the interval (SCD Gen Adjusted Energy (MW) >= SCD Basepoint (MW)):~~

~~SCD Gen BalMkt Basis (MW) = SCD Basepoint (MW)~~

~~**NOTE:** If SCD RT Total Price :Gen ($/MW) < 0 (negative prices), SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW) instead of SCD Basepoint (MW).**NOTE:** NYISO implemented the Energy Payment Limit (EPL) (MW) feature on 08/29/2001 to allow non-regulating generators (SCD In Service Ind = "Y" or "R" and SCD On Control Ind <> "Y") to chase real-time market prices within defined limits. This market change impacted the determination of a generator's balancing market basis (MW) as follows:~~

- ~~Prior to 08/29/2001, no impact (determined as noted above).~~
- ~~On or after 08/29/2001, SCD Energy Pmt Limit (MW) would be used in place of SCD Basepoint (MW) in the above algorithm for non-regulating generators.~~

~~*(2) For an Off Service (SCD In Service Ind = "N") generator:*~~

~~SCD Gen BalMkt Basis (MW) = 0.~~

~~**NOTE:** If a generator is Off Service (SCD In Service Ind = "N"), it doesn't matter whether the generator is indicated as Regulating or Non-Regulating (SCD On Control Ind = "Y", "N", or "NULL").~~

(3~~3~~) For an In Service (SCD In Service Ind = "Y" or "R") and Regulating (SCD On Control Ind = "Y") generator:

If the generator under-generated during the interval (SCD Gen Adjusted Energy (MW) < SCD AGC Basepoint (MW)):

If the generator was instructed to regulate-down (SCD AGC Basepoint (MW) < SCD Basepoint (MW)):

If (SCD AGC Basepoint (MW) - SCD Gen Adjusted Energy (MW)) * 2 >= SCD Basepoint (MW) - SCD Gen Adjusted Energy (MW)

SCD Gen BalMkt Basis (MW) =

SCD Gen Adjusted Energy (MW)

Else

SCD Gen BalMkt Basis (MW) =

SCD Basepoint (MW) - {SCD AGC Basepoint (MW) - SCD Gen Adjusted Energy (MW)} * 2

Else If the generator was instructed to regulate-up (SCD AGC Basepoint (MW) >= SCD Basepoint (MW)):

SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)

Else If the generator over-generated during the interval (SCD Gen Adjusted Energy (MW) >= SCD AGC Basepoint (MW)):

If the given SCD-Interval was a Reserve Pickup Interval (SCD Reserve Pickup Ind = "Y"):

SCD Gen BalMkt Basis (MW) = Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}

Else (given SCD-Interval was NOT a Reserve Pickup Interval (SCD Reserve Pickup Ind <> "Y")

If the generator was instructed to regulate-down (SCD AGC Basepoint (MW) < SCD Basepoint (MW)):

SCD Gen BalMkt Basis (MW) = SCD Basepoint (MW)

NOTE: If SCD Gen Adjusted Energy (MW) > SCD Basepoint (MW) AND SCD RT Total Price :Gen ($/MW) < 0 (negative prices), SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW) instead of SCD Basepoint (MW).

Else If the generator was instructed to regulate-up (SCD AGC Basepoint (MW) >= SCD Basepoint (MW)):

SCD Gen BalMkt Basis (MW) = SCD AGC Basepoint (MW)

NOTE: If SCD RT Total Price :Gen ($/MW) < 0 (negative prices), SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW) instead of SCD AGC Basepoint (MW).

(4) Non-Regulating (SCD On Control Ind <> "Y") generator:

If the generator under-generated during the interval, or the given SCD-Interval was a Reserve Pickup Interval (SCD Gen Adjusted Energy (MW) < SCD Basepoint (MW) or SCD Reserve Pickup Ind = "Y"):

SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)

Else the generator produced as expected or over-generated during the interval (SCD Gen Adjusted Energy (MW) >= SCD Basepoint (MW)):

SCD Gen BalMkt Basis (MW) = SCD Basepoint (MW)

NOTES:

1. If SCD RT Total Price :Gen ($/MW) < 0 (negative prices), SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW) instead of SCD Basepoint (MW).

2. If a generator is Off Service (SCD In Service Ind <> "Y" or "R"), Non-Regulating (SCD On Control <> "Y"), SCD Gen Adjusted Energy (MW) <= 1, and the generator is Not a Gilboa generator (Gen PTID <> 23599, 23756, 23757, 23758, or 23759), then:

SCD Gen BalMkt Basis (MW) = 0

(5) For an Off Service (SCD In Service Ind <> "Y" or "R") generator:

SCD Gen BalMkt Basis (MW) = 0.

NOTES:

1. NYISO implemented the Energy Payment Limit (EPL) (MW) feature on 08/29/2001 to allow non-regulating generators (~~SCD In Service Ind = "Y" or "R" and~~ SCD On Control Ind <> "Y") to chase real-time market prices within defined limits. This market change impacted the determination of a generator's balancing market basis (MW) as follows:
   - Prior to 08/29/2001, no impact (determined as noted above).
   - On or after 08/29/2001, SCD Energy Pmt Limit (MW) would be used in place of SCD Basepoint (MW) ~~in the above~~to calculate SCD Gen BalMkt Basis (MW) ~~algorithm~~for case (4) non-regulating generators.
2. The Reserve Pickup Indicator is overridden in the case where the generator's Maximum Generation Flag is equal to "Y". In this scenario:

   If SCD Max Gen Flag = "Y", Reserve Pickup Ind = "Y"

3. If the given generator's SCD Gen BalMkt Basis (MW) is negative, and the generator is Not a Gilboa generator (Gen PTID <> 23599, 23756, 23757, 23758, or 23759):

   SCD Gen BalMkt Basis (MW) = 0

1.1.2.5 Additional Information

~~*For Out of Merit Generators (Out of Merit Flag = " Y):*~~

~~All Generators that are Out of Merit during the given hour will be settled using their Adjusted Energy (MW), as follows:~~

~~SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)~~

~~*For Gilboa Generators (Gen PTID's = 23599, 23756, 23757, 23758, and 23759):*~~

~~The Gilboa generators will be settled using their Adjusted Energy (MW), as follows:~~

~~SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)~~

SCD Gen BalMkt Basis (MW) is determined for PURPA qualified generators as follows:

SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)

NOTE: PURPA generators are always paid based upon their Adjusted Energy. Furthermore, PURPA Class 1 (PURPA Units Class Type = Class 1) generation is designed to service a specific load/host. Therefore, PURPA Class 1 Bilateral Transactions are either increased or decreased such that Balancing Market Energy equals zero. This ensures that Class 1 Resources do not purchase or sell wholesale energy in the Balancing Market.

For Gilboa generators in scenarios where Transaction Energy is being sunk at the Gilboa Pump Bus (Load Bus PTID = 306259), SCD Gen BalMkt Energy (MW) is determined as follows:

If the Gilboa generator is "GILBOA" (Gen PTID = 23599) and the settlement date < 06/01/2000, or is "GILBOA 1" (Gen PTID = 23756) and the settlement date >= 06/01/2000:

SCD Gen BalMkt Energy (MW) =

[~~Max{~~SCD Gen BalMkt Basis (MW)~~, 0}~~ - Hr DAM Sched Gen (MWh) - {SCD RT Sched Trans :Gen (MW) - Hr DAM Sched Trans :Gen (MW)} + SCD RT Sched Trans :GilboaPump (MW) + Hr DAM Sched Load :GilboaPump (MW)]

Where:

SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)

NOTE: For GILBOA generators, SCD Gen Adjusted Energy (MW) can be calculated as a negative value.

Following a Reserve Pickup:

If an SCD interval is the result of Reserve Pickup (SCD Reserve Pickup Ind = "Y"), the SCD Gen Adjusted Energy (MW) value is used (SCD Gen BalMkt Basis (MW) = SCD Gen Adjusted Energy (MW)) above all other values for the current and the following 3 consecutive SCD intervals. This is an override to the rules mentioned in the above algorithm. Since Operating Reserve resources are dispatched at emergency rates during a reserve pickup, resources over generating are rewarded for providing faster resolution to the system constraint prompting the reserve pickup.

Capacity Limited Resources (CLR) are handled slighted differently than above as follows:

If Hr Out of Merit Type Desc = "CAPACITY LIMITED RESOURCE" (Hr Out of Merit Type ID = 20):

SCD BalMkt Energy Stlmnt :Gen ($) =

[SCD Gen CLR Energy (MW) * Hr DAM Energy Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}] +

[SCD Gen BalMkt Energy (MW) * SCD RT Energy Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}]

SCD BalMkt Loss Stlmnt :Gen ($) =

[SCD Gen CLR Energy (MW) * Hr DAM Loss Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}] +

[SCD Gen BalMkt Energy (MW) * SCD RT Loss Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}]

SCD BalMkt Cong Stlmnt :Gen ($) =

[SCD Gen CLR Energy (MW) * Hr DAM Cong Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}] +

[SCD Gen BalMkt Energy (MW) * SCD RT Cong Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}]

And SCD Gen CLR Energy (MW) & SCD Gen BalMkt Energy (MW) are calculated as follows:

SCD Gen BalMkt Energy (MW) =

~~[Max{~~SCD Gen BalMkt Basis (MW)~~, 0}~~ - Hr Gen Upper Op Limit (MW) - SCD RT Sched Trans :Gen (MW)~~]~~

If Hr Gen Upper Op Limit (MW) <= 0 THEN

SCD Gen CLR Energy (MW) =

Hr DAM Sched Gen (MWh) - Hr DAM Sched Trans :Gen (MW)

Else

SCD Gen CLR Energy (MW) =

Hr Gen Upper Op Limit (MW) - {Hr DAM Sched Gen (MWh) - Hr DAM Sched Trans :Gen (MW)}

Gen Adjusted Energy (MW) can be calculated as:

Please see Appendix A, Figure 1.6 for more information on how a generator's adjusted energy (MW) is determined.

SCD RT Total Price :Gen ($/MW) can also be calculated as:

SCD RT Total Price :Gen ($/MW) =

SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)

SCD Gen BalMkt Energy (MWh) can also be calculated as:

SCD Gen BalMkt Energy (MWh) =

SCD Gen BalMkt Energy (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

1.1.2.6 References

The applicability of Power Supplier Balancing Market Energy Payments or Charges is described within Article 4 (Section 4.18) of the MST (Market Administration and Control Area Services Tariff).

1.1.3 Day Ahead Market Bid Production Cost Guarantee (BPCG) (Internal Power Suppliers)

1.1.3.1 Description

Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) is the settlement ($) by which NYISO guarantees internal power suppliers that a generator will not incur a net loss if a generator is committed in the DAM. Bid production cost guarantee is comprised of the cost of production based on a generator's bid (minimum generation cost, bid production cost, and start-up cost) less the total revenues received for that generator (energy + net ancillary services margin settlements).

The DAM bid production cost guarantee payment made to power suppliers is a daily settlement for each eligible generator. In order to receive a bid production cost guarantee payment, the sum of all hourly loss/profit values for a given day must result in a net loss (daily calculation result must be > $0). Below is a high-level overview of this settlement:

At the Daily Level:

- A generator's Daily DAM BPCG ($) settlement is determined by summing the Daily Total Net Cost ($) and its Daily DAM Startup Cost ($). A Daily DAM BPCG ($) payment is made if net cost exceeds net revenue on a daily basis for the given generator.
    - Daily Total Net Cost ($) is determined by summing up the hourly values of Hourly Total Net Cost ($).
    - Daily DAM Startup Cost ($) is determined by summing up the amount of hourly DAM Start Up Cost ($) determined by the Security Constrained Unit Commitment (SCUC) process.~~calculating the cost under the generators startup cost curve as a function of interval downtime.~~

At the Hourly Level:

- A generator's Hourly Total Net Cost ($) is determined by subtracting Net Ancillary Service Revenue ($) from its Hourly Net Energy Cost ($).
    - Net Ancillary Service Revenue ($) is determined by summing the net ancillary revenues determined for the DAM Sync Reserve, the DAM Regulation markets, and Voltage Support Service Credit ($) settlements.
        - **NOTE:** The net ancillary service revenues are determined by netting the bid cost of the NYISO DAM scheduled ancillary service and the DAM availability settlements.
    - A generator's Hourly Net Energy Cost ($) is determined by subtracting its Total Energy Revenue ($) from its Total Energy Cost ($).
        - Total Energy Revenue ($) is determined by summing up all power supplier DAM Energy settlements ($) (energy, loss and congestion components).
        - Total Energy Cost ($) is determined using many inputs (refer to the algorithm section below for further details), but in general, the cost is determined by integrating the cost of the generator's DAM Generation Bid for the energy sold into the DAM market.
            - **NOTE:** Costs of energy sold into the Day Ahead Market via Transaction Contracts are excluded.

1.1.3.2 Required Data Elements

1.1.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Stlmnt :Gen ($)	Day Ahead Market Energy Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's Day Ahead Market energy component settlement	Y
	Hr DAM Loss Stlmnt :Gen ($)	Day Ahead Market Loss Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's Day Ahead Market loss component settlement	Y
	Hr DAM Cong Stlmnt :Gen ($)	Day Ahead Market Congestion Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's Day Ahead Market congestion component settlement	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MWh) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales)	Y
	Hr DAM Sched Trans :Gen (MW)	Day Ahead Scheduled Transactions (MW) is a number representing the total amount of energy scheduled by the NYISO for all transactions for a given generator, for a given hour	Y
	Hr DAM Gen Bid Dispatch Seg :Block	Hourly Day Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given DAM generation bid (block generation bid type).	Y
	Hr DAM Gen Bid Dispatch Seg :Curve	Hourly Day Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given DAM generation bid (curve generation bid type).	Y
	Hr DAM Gen Bid :Min Gen Cost ($)	Day Ahead Market Generator Bid Minimum Generation Cost is a number representing the generation cost ($) of operating at the minimum generation level during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Min Gen (MW)	Day Ahead Market Generator Bid Minimum Generation is a number representing the minimum generation level (MW) for the generator during the interval, submitted by the Generator in a generation bid.	Y
	Capability Period	Capability Period represents the capability period that the day falls in (either Winter or Summer)	Y
	Hr Gen Contr Ins Cap :Summer (MW)	Hourly Generator Contracted Summer Installed Capacity (MW) is a number representing the amount of installed capacity effective for the summer capacity period for the given generator.	Y
	Hr Gen Contr Ins Cap :Winter	Hourly Generator Contracted Winter Installed	Y

Bill Code	Title	Business Description	DSS Value
	(MW)	Capacity (MW) is a number representing the amount of installed capacity effective for the winter capacity period for the given generator.	
	Gen Type Desc	Generator Type Description represents the name of the type of Generator	Y
	Hr DAM 10Sync Avail Stlmnt ($)	Hourly Day Ahead Market 10 Minute Sync Reserve Availability Settlement ($) is a number representing the BAS-determined DAM 10 minute sync reserve settlement for the generator for the interval	Y
	Hr DAM Sched 10Sync Avail (MWh)	Day Ahead Market Scheduled 10 Minute Sync Reserve Availability (MWh) is a number representing the amount of 10 minute sync reserve availability scheduled by the NYISO for the given generator in the Day Ahead Market	Y
	Hr DAM AS Bid :10Sync Price ($/MW)	Hourly Day Ahead Market Ancillary Service 10 Minute Sync Reserve Bid Price ($/MW) is a number representing the DAM bid price of 10 minute sync reserve service during the interval, submitted by the Generator in an ancillary service bid	Y
	Hr DAM Reg Avail Stlmnt ($)	Day Ahead Market Regulation Availability Settlement ($) is a number representing the BAS-determined DAM regulation settlement for the generator for the interval	Y
217	Hr DAM Sched Reg Avail (MWh)	Day Ahead Market Scheduled Regulation Availability (MW) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Day Ahead Market	Y
	Hr DAM AS Bid Reg :Pr ($/MW)	Day Ahead Market Ancillary Service Regulation Bid Price ($/MW) is a number representing the DAM bid price of regulation service during the interval, submitted by the Generator in an ancillary service bid	Y
214	Hr VSS Stlmnt ($)	Voltage Support Service Settlement ($) is a number representing the BAS-determined voltage support service settlement for the generator for the interval	Y
	Hr DAM Start Up Cost :SCUC ($)	Day Ahead Market Startup Cost - SCUC ($) is a number representing the amount of generator DAM start-up cost determined by SCUC during the DAM unit commitment process for the given hour.	N

1.1.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Day DAM Start Up Cost ($)	Daily Real Time Startup Cost ($) is a number representing the amount of real time startup costs for a generator for the given day	Y
204	Hr Total DAM Stlmnt :Gen ($)	Total Day Ahead Market Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's total Day Ahead Market energy settlement; sum of the DAM energy, loss, and congestion component settlements.	Y
	Hr DAM Incremental Energy Cost ($)	Hourly Day Ahead Market (DAM) Incremental Energy Cost ($) is a number representing the total amount of DAM bid production cost determined under the incremental energy portion of the generator's DAM Generation Bid, which corresponds to the generator's DAM Schedule, for the given generator and hour.	N
	Hr DAM Transaction Energy Cost ($)	Hourly Day Ahead Market (DAM) Transaction Energy Cost ($) is a number representing the total amount of DAM bid production cost which corresponds to the generator's DAM Transaction Scheduled Energy, for the given generator and hour.	N
	Hr DAM Energy Cost ($)	Hourly Day Ahead Market Energy Cost ($) is a number representing the amount of total day ahead market energy cost (derived from energy bid curves and schedules) for the given hour and generator	Y
	Hr DAM Net Energy Cost ($)	Hourly Day Ahead Market Net Energy Cost ($) is a number representing the amount of total net day ahead market energy costs (amount of cost greater than revenues) for the given hour and generator	Y
	Hr DAM NASR Reg Margin ($)	Hourly Day Ahead Market (DAM) Net Ancillary Service Revenue (NASR) Regulation Margin ($) is a number representing the amount of regulation and frequency control service total net day ahead market ancillary service revenues (amount of revenue greater than costs) for the given hour and generator	N
	Hr DAM NASR OpRes Margin ($)	Hourly Day Ahead Market (DAM) Net Ancillary Service Revenue (NASR) Operating Reserve Margin ($) is a number representing the amount of operating reserve service total net day ahead market ancillary service revenues (amount of revenue greater than costs) for the given hour and generator	N
	Hr DAM NASR VSS ($)	Hourly Day Ahead Market (DAM) Net Ancillary Service Revenue (NASR) Voltage Support Service (VSS) ($) is a number representing the amount of the generator's voltage support service credit payment is included as ancillary service revenue in the DAM Bid Production Cost Guarantee settlement, for the given generator and hour.	N

Bill Code	Title	Business Description	DSS Value
	Hr DAM Net AS Rev ($)	Hourly Day Ahead Market Net Ancillary Service Revenue ($) is a number representing the amount of total net day ahead market ancillary service revenues (amount of revenue greater than costs) for the given hour and generator	Y
205	Hr DAM Total Net Cost ($)	Hourly Day Ahead Market Total Net Cost ($) is a number representing the amount of total net day ahead market energy and day ahead market ancillary service costs (difference between costs and revenues) for the given hour and generator	Y
	Day DAM Total Net Cost ($)	Daily Day Ahead Market Total Net Cost ($) is a number representing the amount of total net day ahead market energy and day ahead market ancillary service costs (difference between costs and revenues) for the given day and generator	Y

1.1.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
302	Day DAM BPCG Stlmnt ($)	Day Ahead Market Bid Production Cost Guarantee Settlement ($) is a number representing the BAS-determined day ahead market bid production cost guarantee settlement for the given generator	Y

1.1.3.3 Eligibility

Generators are eligible for DAM Bid Production Cost Guarantee ($) if:

- o A Generator's DAM eligible total costs (energy, ancillary services, and start-up) exceed its DAM Energy and Ancillary Services settlements ($).

The following are scenarios for which DAM Bid Production Cost ($) does not apply:

- DAM Bid Production Cost is not calculated for:
  - o Grouped Generators (Generator Type Description = "GROUP UNIT") (not a generator associated with a Group, but the Group itself).

The following are scenarios for which DAM Startup Cost ($) does not apply:

- The Generator was not scheduled in the DAM (Hr DAM Sched Gen (MWh) <= 0).
- The Generator served DAM Transaction Contract schedules (Hr DAM Sched Trans :Gen (MW) > 0).
- DAM Bid Production Cost is not calculated for:
  - o Grouped Generators (Generator Type Description = "GROUP UNIT") (not a generator associated with a Group, but the Group itself).

1.1.3.4 Settlement Algorithm

DAM Bid Production Cost Guarantee ($) is calculated as:

Day DAM BPCG Stlmnt ($) =

Max{Day DAM Total Net Cost ($) + Day DAM Start Up Cost ($), 0}

Where Day DAM Total Net Cost ($) is calculated as:

Day DAM Total Net Cost ($) =

∑ Hr DAM Total Net Cost ($), for all hours in a day.

Where:

Hr DAM Total Net Cost ($) =

Hr DAM Net Energy Cost ($) - Hr DAM Net AS Rev ($)

And Hr DAM Net Energy Cost ($) is calculated as:

Hr DAM Net Energy Cost ($) =

Hr DAM Energy Cost ($) - Hr Total DAM Stlmnt :Gen ($)

And Hr Total DAM Stlmnt :Gen ($) is calculated as:

Hr Total DAM Stlmnt :Gen ($) =

Hr DAM Energy Stlmnt :Gen ($) + Hr DAM Loss Stlmnt :Gen ($) -~~+~~ Hr DAM Cong Stlmnt :Gen ($)

And Hr DAM Energy Cost ($) is calculated as:

The determination of Hr DAM Energy Cost ($) varies under a few different scenarios, which are detailed in the following sections:

1. Generator is not eligible for any DAM energy cost guarantee during the ~~interval~~hour.
2. Generator was scheduled in the DAM, but has no DAM Transaction Schedules.
3. Generator was scheduled in the DAM, and has DAM Transaction Schedules that are *greater* than or equal to DAM minimum generation (MW).
4. Generator was scheduled in the DAM, and has DAM Transaction Schedules that are *less* than to DAM minimum generation (MW).

(1) Hr DAM Energy Cost ($) by market rule is equal to the given generator's DAM revenue (DAM Net Energy Cost ($) equals zero) for the given hour if any of the below conditions are true:

- The Generator's DAM Transaction Scheduled Energy (MW) is greater than its overall schedule in the DAM (Hr DAM Sched Gen (MWh) <= Hr DAM Sched Trans :Gen (MW)).
- The Generator was not scheduled in the DAM (Hr DAM Sched Gen (MWh) <= 0).

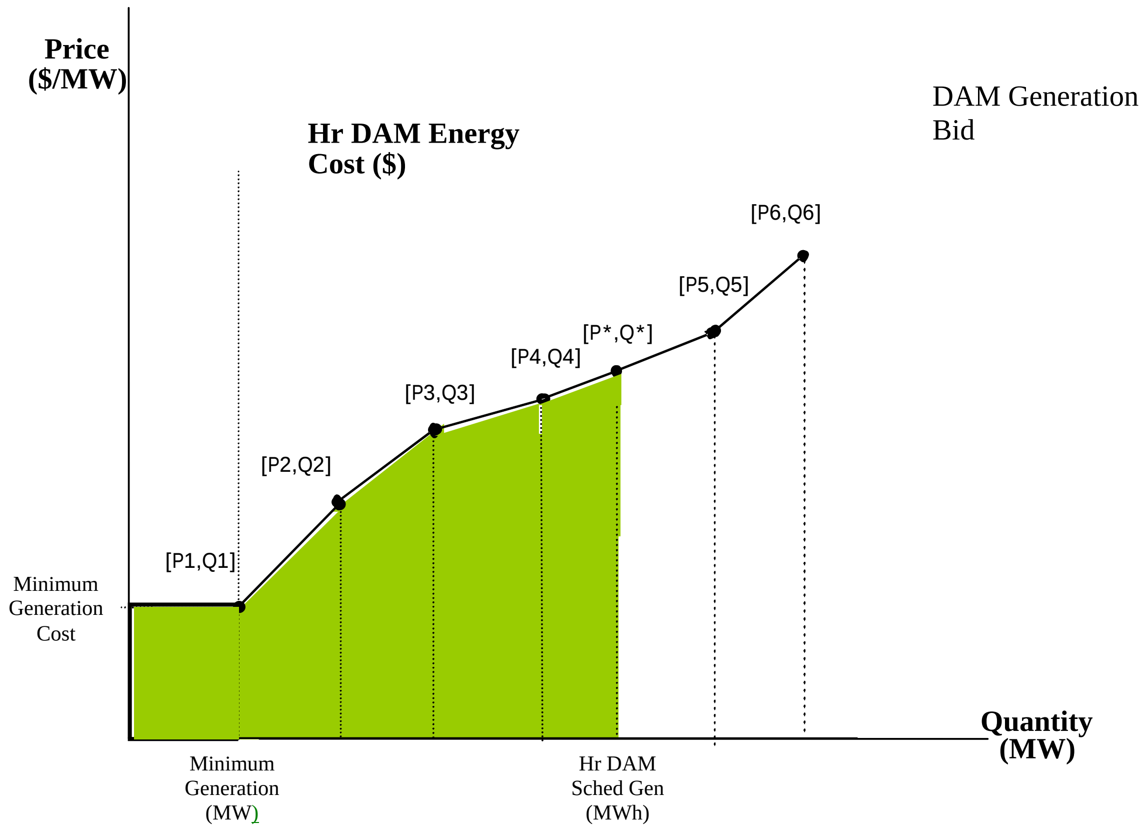
Hr DAM Energy Cost ($) = Hr Total DAM Stlmnt :Gen ($)

(2) Generator was scheduled in the DAM but was NOT scheduled in the DAM via Transactions (Hr DAM Sched Gen (MWh) > 0 and Hr DAM Sched Trans :Gen (MW) = 0):

Hr DAM Energy Cost ($) =

Hr DAM Gen Bid :Min Gen Cost ($) + Hr DAM Incremental Energy Cost ($)

Where Hr DAM Incremental Energy Cost ($) is the sum of the Bid Production Cost under the DAM Generation Bid for each dispatch segment from Hr DAM Gen Bid :Min Gen (MW) to Hr DAM Sched Gen (MWh).



Note the following exception:

If there are no incremental bid points for the given generator and hour (Hr DAM Gen Bid Dispatch Seg :Curve + Hr DAM Gen Bid Dispatch Seg :Block = 0, or NULL), DAM Energy Cost ($) is determined as only the generator's Minimum Generation Costs ($) provided on their DAM Generation Bid, as follows:

Hr DAM Energy Cost ($) =

Hr DAM Gen Bid :Min Gen Cost ($)

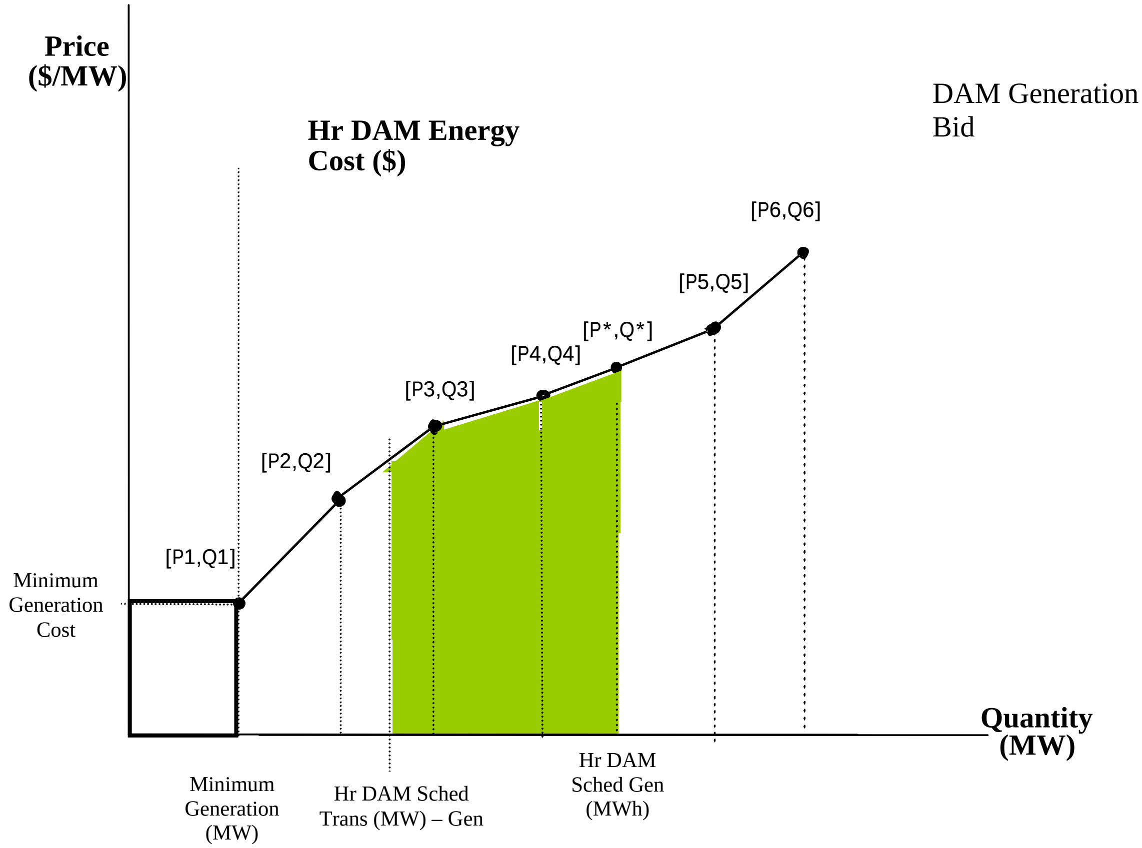
(3) Generator was scheduled in the DAM and was also scheduled in the DAM via Transactions at a level greater than or equal to Minimum Generation (Hr DAM Sched Gen (MWh) > 0 and Hr DAM Sched Trans :Gen (MW) >= Hr DAM Gen Bid :Min Gen (MW)):

Hr DAM Energy Cost ($) =

Hr DAM Incremental Energy Cost ($) - Hr DAM Transaction Energy Cost ($)

Where Hr DAM Incremental Energy Cost ($) is the sum of the Bid Production Cost under the DAM Generation Bid for each dispatch segment from Hr DAM Gen Bid :Min Gen (MW) to Hr DAM Sched Gen (MWh).

And Hr DAM Transaction Energy Cost ($) is the sum of the Bid Production Cost under the DAM Generation Bid for each dispatch segment from Hr DAM Gen Bid :Min Gen (MW) to Hr DAM Sched Trans :Gen (MW).



Note the following exception:

If there are no incremental bid points for the given generator and hour (Hr DAM Gen Bid Dispatch Seg :Curve + Hr DAM Gen Bid Dispatch Seg :Block = 0, or NULL), DAM Energy Cost ($) is zero:

Hr DAM Energy Cost ($) = 0

(4) Generator was scheduled in the DAM and was also scheduled in the DAM via Transactions at a level less than Minimum Generation (Hr DAM Sched Gen (MWh) > 0 and Hr DAM Sched Trans :Gen (MW) < Hr DAM Gen Bid :Min Gen (MW)):

Hr DAM Energy Cost ($) =

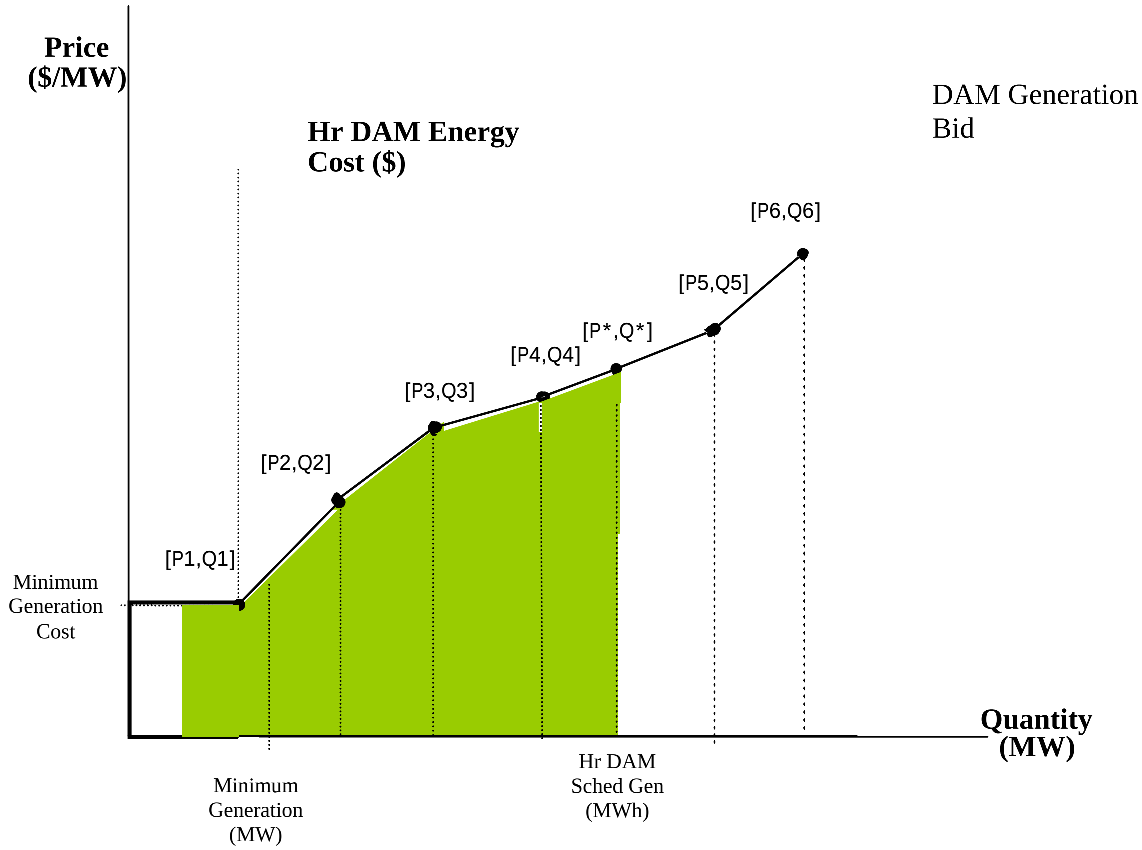
Hr DAM Gen Bid :Min Gen Cost ($) + Hr DAM Incremental Energy Cost ($) - Hr DAM Transaction Energy Cost ($)

Where Hr DAM Incremental Energy Cost ($) is the sum of the Bid Production Cost under the DAM Generation Bid for each dispatch segment from Hr DAM Gen Bid :Min Gen (MW) to Hr DAM Sched Gen (MWh).

And Hr DAM Transaction Energy Cost ($) =

Hr DAM Gen Bid :Min Gen Cost ($) *

{Hr DAM Sched Trans :Gen (MW) ÷ Hr DAM Gen Bid :Min Gen (MW)}



Note the following exceptions:

If there are no incremental bid points for the given generator and interval (Hr DAM Gen Bid Dispatch Seg :Curve + Hr DAM Gen Bid Dispatch Seg :Block = 0, or NULL), DAM Energy Cost ($) is determined as the generator's DAM Minimum Generation Cost ($) minus the amount of DAM Minimum Generation Costs ($) corresponding to its DAM Scheduled Transactions:

Hr DAM Energy Cost ($) =

{Hr DAM Gen Bid :Min Gen Cost ($) - Hr DAM Transaction Energy Cost ($)}

And Hr DAM Transaction Energy Cost ($) =

Hr DAM Gen Bid :Min Gen Cost ($) *

{Hr DAM Sched Trans :Gen (MW) ÷ Hr DAM Gen Bid :Min Gen (MW)}

NOTE:

- Please see Appendix A, Figure 1.3 for more information on how to determine the incremental cost ($) on a given Generation Bid corresponding to a specific upper and lower generation output level (MW).

And Hr DAM Net AS Rev ($) is calculated as:

Hr DAM Net AS Rev ($) =

Hr DAM NASR Reg Margin ($) + Hr DAM NASR OpRes Margin ($) + Hr DAM NASR VSS ($)

Where:

Hr DAM NASR Reg Margin ($) =

Max{Hr DAM Reg Avail Stlmnt ($) - {Hr DAM Sched Reg Avail (MWh) * Hr DAM AS Bid Reg :Pr ($/MW)}, 0}

Hr DAM NASR OpRes Margin ($) =

Hr DAM 10Sync Avail Stlmnt ($) - {Hr DAM Sched 10Sync Avail (MWh) * Hr DAM AS Bid :10Sync Price ($/MW)}

And if the generator meets any of the following conditions:

- The Generator is a PURPA qualified generator or a non-utility generator (Gen Type Desc = "NON-UTILITY GENERATOR" & "PURPA GENERATOR")
- The Generator is not participating in the Installed Capacity Market (Capability Period = "SUMMER" and Hr Gen Contr Ins Cap :Summer (MW) <= 0, OR Capability Period = "WINTER" and Hr Gen Contr Ins Cap :Winter (MW) <= 0)

Hr DAM NASR VSS ($) = Hr VSS Stlmnt ($)

Else

Hr DAM NASR VSS ($) = 0.

And Day DAM Start Up Cost ($) is calculated as:

Day DAM Start Up Cost ($) =

∑ Hr DAM Start Up Cost :SCUC ($), for all hours in a day.

NOTES:

- Day Ahead Market Start-Up cost is a function of a generator's scheduled down time during the DAM and its Start-Up cost curve. Start-Up cost is computed by NYISO's Security Constrained Unit Commitment (SCUC) process and provided to its Billing and Accounting System (BAS) for application to the power supplier DAM BPCG settlement.

- DAM Start-Up cost is prorated by the generator's actual performance to its DAM commitment in real-time. The Start-Up cost supplied to the Billing and Accounting System (BAS) will be reported for the first hour of a continuous DAM commitment schedule. If a generator only operates for a portion of the hours it was scheduled to run, the eligible Start-Up cost for recovery will be prorated for the period of the generator's schedule that the generator actually operated.

1.1.3.5 Additional Information

None

1.1.3.6 References

The applicability of Day Ahead Market Bid Production Cost Guarantee Payments is described within Attachment C of the MST (Market Administration and Control Area Services Tariff). It is also referenced within Schedule 1 (Section 4 B) of the OATT (Open Access Transmission Tariff).

1.1.4 Real-Time Bid Production Cost Guarantee (BPCG) (Internal Power Suppliers)

1.1.4.1 Description

Real-Time Bid Production Cost Guarantee (BPCG) is the settlement ($) by which NYISO guarantees internal power suppliers that a generator will not incur a net loss if a generator is committed (above that committed in the DAM), providing that the generator's operation and schedule meets the qualifying criteria. Bid production cost guarantee is comprised of the cost of production based on a generator's bid (minimum generation cost, bid production cost, and start-up cost) less the total revenues received for that generator (energy + net ancillary services margin + ancillary service Lost Opportunity Costs (LOC) settlements).

The bid production cost guarantee payment made to suppliers is a daily settlement for each eligible generator. In order to receive a bid production cost guarantee payment, the sum of all hourly loss/profit values for a given day must result in a net loss (daily calculation result must be > $0). Below is a high-level overview of this settlement:

At the Daily Level:

- A generator's Daily RT BPCG ($) settlement is determined by summing the Daily Total Net Cost ($) and its Daily RT Startup Cost ($). A Daily RT BPCG ($) payment is made if net cost exceeds net revenue on a daily basis for the given generator.
  - o Daily Total Net Cost ($) is determined by summing up the hourly values of Hourly Total Net Cost ($).
  - o Daily RT Startup Cost ($) is determined by summing up the amount of hourly RT Start Up Cost ($) determined by the Balancing Market Evaluation (BME) process.~~calculating the cost under the generators startup cost curve as a function of interval downtime.~~

At the Hourly Level:

- A generator's Hourly Total Net Cost ($) is determined by subtracting Net Ancillary Service Revenue ($) from its Hourly Net Energy Cost ($).

- Net Ancillary Service Revenue ($) is determined by summing the net ancillary revenues determined for the HAM Sync Reserve and the HAM Regulation markets, and adding in the Regulation Energy Margin ($), HAM Sync Reserve LOC ($), HAM 10-Minute NSync Reserve LOC ($), and Voltage Support Service LOC ($) settlements.
  - **NOTE:** The net ancillary service revenues are determined by netting the bid cost of the NYISO HAM scheduled ancillary service and the HAM availability settlements.
- Hourly Net Energy Cost ($) is determined by summing up the SCD-level values of Net Energy Cost ($).

At the SCD Level:

- A generator's Net Energy Cost ($) is determined by subtracting its Total Energy Revenue ($) from its Total Energy Cost ($).
  - Total Energy Revenue ($) is determined by summing up all power supplier Balancing Energy settlements ($) (energy, loss and congestion components).
  - Total Energy Cost ($) is determined using many inputs (refer to the algorithm section below for further details), but in general, the cost is determined by integrating the cost of the generator's HAM Generation Bid for the energy sold into the balancing market.
    - **NOTE:** Costs of energy sold into the Day Ahead Market or as transactions are excluded.

1.1.4.2 Required Data Elements

1.1.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	GenGrp PTID	Generator Group PTID is a number representing the unique point identifier for a group of generators.	Y
	Hr DAM Gen Bid :Status ID~~Hr DAM Ind~~	Hourly Day-Ahead Market Generator Bid Status ID is a number indicating the status for the given bid.~~Hourly DAM Indicator is a character that represents whether a DAM Generation Bid exists.~~	Y~~Y~~
	~~Hr HAM Ind~~	~~Hourly HAM Indicator is a character that represents whether a HAM Generation Bid exists.~~	~~Y~~
	Hr HAM Gen Bid :Status ID	Hourly Hour-Ahead Market Generator Bid Status ID is a number indicating the status for the given bid.	Y
	SCD BalMkt Energy Stlmnt :Gen ($)	Balancing Market Energy Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's balancing energy market energy component settlement.	Y
	SCD BalMkt Loss Stlmnt :Gen ($)	Balancing Market Loss Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's balancing energy market	Y

Bill Code	Title	Business Description	DSS Value
		loss component settlement.	
	SCD BalMkt Cong Stlmnt :Gen ($)	Balancing Market Congestion Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's balancing energy market congestion component settlement.	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MWh) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales).	Y
	Hr DAM Sched Trans :Gen (MW)	Day Ahead Scheduled Transactions (MW) is a number representing the total amount of energy scheduled by the NYISO for all transactions for a given generator, for a given hour.	Y
	SCD RT Sched Trans :Gen (MW)	Real-Time Scheduled Transaction (MW) is a number representing the total amount of transaction energy for all transactions injected at a given generator, for an SCD interval.	Y
	SCD Energy Pmt Limit (MW)	Energy Payment Limit (MW) is a number representing the maximum amount of generation for which a balancing market energy payment is applicable.	Y
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y
	SCD AGC Basepoint (MW)	Automatic Generation Control Basepoint (MW) is a number representing the amount of generator energy scheduled, including generator regulation control, by the NYISO during real-time dispatch for the generator; ~6 second time intervals communicated to the generator to support real-time generation dispatch.	Y
	SCD Basepoint (MW)	Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated over approximately 5 minute time intervals communicated to support generation dispatch.	Y
	Hr Gen Meter Energy (MWh)	Generator Metered Energy (MWh) is a number	Y

Bill Code	Title	Business Description	DSS Value
		representing the amount of settlement-quality metered generation for the hour for the given generator. This value is provided by the individual transmission owners and is allocated to the SCD level by the NYISO using SCD Gen Avg Actual Energy (MW).	
	Hr Gen Avg Actual Energy (MW)	Hourly Generator Average Actual Energy (MW) is a number representing average actual output of a generator over the hour. It is the average of the 6-second-level data coming from the NYISO SCADA system.	Y
	Hr HAM Sched Gen (MW)	Hour Ahead Scheduled Generation (MW) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Hour Ahead Market.	Y
	Gen Type Desc	Generator Type Description represents the name of the type of Generator.	Y
5220	Hr Out of Merit Type Desc	Hourly Out of Merit Type Description represents the reason for an out of economic merit dispatch for the given generator and hour.	Y
	Hr Out of Merit Type ID	Hourly Out of Merit Type ID is a number representing the reason for an out of economic merit dispatch for the given generator and hour.	Y
5200	Hr Out of Merit Flag	Hourly Out of Merit Flag is a character representing whether or not the given generator was dispatched out of economic merit order during the hour.	Y
	SCD In Service Ind	In Service Indicator is a character representing whether or not the generator is in service (physically connected and providing energy onto the NYISO electrical grid).	Y
5260	SCD On Control Ind	On Control Indicator is a character representing whether or not the generator is on NYISO regulation control.	Y
	SCD On Dispatch Ind	On Dispatch Indicator is a character representing whether or not the generator is being dispatched by the NYISO.	Y
	Day PURPA Units Class Type	PURPA Class Type is a character representing the class of the PURPA Generator (Class 1 or Class 2).	Y
	SCD Reserve Pickup Ind	SCD Reserve Pick Up Indicator is a character which indicates whether the SCD interval was initiated as a reserve pickup.	Y
	Hr Max Gen Flag	Hourly Maximum Generation Flag is a character representing whether or not the given generator is	Y

Bill Code	Title	Business Description	DSS Value
		operating at its maximum output level for the given hour (values are Y or N).	
	SCD RT Energy Price :Gen ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component).	Y
	SCD RT Loss Price :Gen ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component).	Y
	SCD RT Cong Price :Gen ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component).	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval.	Y
	Hr DAM Gen Bid :Min Gen Cost ($)	Day Ahead Market Generator Bid Minimum Generation Cost is a number representing the generation cost ($) of operating at the minimum generation level during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Min Gen (MW)	Day Ahead Market Generator Bid Minimum Generation is a number representing the minimum generation level (MW) for the generator during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid Dispatch Seg :Block	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given HAM generation bid (block generation bid type).	Y
	Hr HAM Gen Bid Dispatch Seg :Curve	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given HAM generation bid (curve generation bid type).	Y
	Hr HAM Gen Bid :Min Gen Cost ($)	Hour Ahead Market Generator Bid Minimum Generation Cost is a number representing the generation cost ($) of operating at the minimum generation level during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Min Gen (MW)	Hour Ahead Market Generator Bid Minimum Generation is a number representing the minimum generation level (MW) for the generator during the interval, submitted by the Generator in a generation bid.	Y
	Hr Sup Reg Avail Stlmnt ($)	Hourly Supplemental Regulation Availability Settlement ($) is a number representing the BAS-determined supplemental regulation settlement for	Y

Bill Code	Title	Business Description	DSS Value
		the generator for the hour.	
217	Hr DAM Sched Reg Avail (MWh)	Day Ahead Market Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Day Ahead Market.	Y
	Hr HAM Sched Reg Avail (MW)	Hour Ahead Scheduled Regulation Availability (MW) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market.	Y
	Hr HAM AS Bid Reg :Price ($/MW)	Hour Ahead Market Ancillary Service Regulation Bid Price ($/MW) is a number representing the bid price of regulation service during the interval, submitted by the Generator in an ancillary service bid.	Y
	Hr Sup 10Sync Unadj Avail ($)~~Hr Sup 10Sync Avail Stlmnt ($)~~	Hourly Supplemental 10-Minute Synchronous Operating Reserves ~~Reserves~~ Unadjusted Availability ~~Settlement~~ Credit ($) is a number representing the unadjusted settlement amount for ~~availability of~~ Supplemental 10-Minute Synchronous Operating Reserves Service, unadjusted for supply performance, for the given generator, for the given hour.	Y
	Hr DAM Sched 10Sync Avail (MWh)	Day Ahead Market Scheduled 10 Minute Sync Reserve Availability (MWh) is a number representing the amount of 10 minute sync reserve availability scheduled by the NYISO for the given generator in the Day Ahead Market.	Y
	Hr HAM Sched 10Sync Avail (MWh)	Hour Ahead Scheduled 10 Minute Sync Reserve Availability (MWh) is a number representing the amount of 10 minute sync reserve availability scheduled by the NYISO for the given generator in the Hour Ahead Market.	Y
	Hr HAM AS Bid :10Sync Price ($/MW)	Hour Ahead Market Ancillary Service 10 Minute Sync Reserve Bid Price ($/MW) is a number representing the bid price of 10 minute sync reserve service during the interval, submitted by the Generator in an ancillary service bid.	Y
	Hr Adj 10NSync LOC Cred ($)~~Hr Adj 10NSync LOC Stlmnt ($)~~	Hourly Adjusted 10-Minute Non-Synchronous Operating Reserves Lost Opportunity Cost ~~Settlement~~ Credit ($) is a number representing the 10-Minute Non-Synchronous Operating Reserves Lost Opportunity Cost Credit, adjusted for usage, but unadjusted for ~~and~~ supply performance, for the given generator, for the given hour.	Y

Bill Code	Title	Business Description	DSS Value
~~240~~	Hr Op Res LOC Credit ($)~~Hr Op Res LOC Stlmnt ($)~~	Hourly Operating Reserves Lost Opportunity Cost~~s~~ ~~Settlement~~ Credit ($) is a number representing the ~~settlement~~ credit amount for Operating Reserves Lost Opportunity Cost~~s~~, unadjusted for supply performance, for the given generator, for the given hour; due to either being backed down off of its economic dispatch point or blocked from being scheduled to provide market energy in order to provide operating reserves service.	Y
215	Hr VSS LOC Stlmnt ($)	Voltage Support Service Lost Opportunity Cost Settlement ($) is a number representing the BAS-determined voltage support service lost opportunity cost settlement for the generator for the interval.	Y
	Hr Reg Energy Margin ($)		Y
	Hr DAM Elig for Startup Cost Flag	Hourly Day Ahead Market Eligible for Startup Cost Flag is a character representing whether or not the given generator is eligible to possibly recover their DAM startup costs in the DAM Bid Production Cost Guarantee settlement (determined from a DAM Generation Bid - startup cost curve).	N
	Hr RT Start Up Cost :BME ($)	Real-Time Startup Cost ($) is a number representing the amount of generator RT start-up cost determined during the Balancing Market Evaluation (BME) process.	N

1.1.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
219	Hr Sup Sched Reg Avail (MW)	Hourly Supplemental Scheduled Regulation Availability (MW) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market net of the amount scheduled in the Day Ahead Market, or zero of DAM schedule > HAM schedule), for the given hour	Y
	Hr Sup Sched 10Sync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Synchronous Operating Reserves Availability	Y

Bill Code	Title	Business Description	DSS Value
		(MW) values.	
	SCD RT Total Price :Gen ($/MW)	Total Real-Time Price ($/MW) is a number representing the total LBMP price of a load bus.	Y
	SCD Total BalMkt Stlmnt :Gen ($)	Total Balancing Market Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's total balancing energy market settlement; sum of the balancing energy market energy, loss, and congestion component settlements.	Y
	SCD Grp Gen Alloc Ratio	SCD Group Generator Allocation Ratio is a number representing a ratio for each generator (child) part of a group generator scenario (parent) used to allocate the group's SCD Basepoint (MW) to each individual generator (child).	N
	SCD Gen RT BPCG Basis (MW)	SCD Generation Real-Time (RT) Bid Production Cost Guarantee (BPCG) Basis (MW) is a number representing the generation output value used as the basis for the determination of the amount of the given generator's real-time BPCG settlement (MW), for the given SCD-interval.	N
	Hr NASR Reg Margin ($)	Hourly Net Ancillary Service Revenue (NASR) Regulation Margin ($) is a number representing the total net amount of supplemental regulation and frequency control service revenue that exceeds supplemental regulation and frequency control service bid cost for the given hour and generator.	N
	Hr NASR OpRes Margin ($)	Hourly Net Ancillary Service Revenue (NASR) Operating Reserve Margin ($) is a number representing the total net amount of supplemental operating reserve service revenue that exceeds supplemental operating reserve service bid cost for the given hour and generator.	N
	SCD RT Incremental Energy Cost ($)	SCD Real-Time (RT) Incremental Energy Cost ($) is a number representing the total amount of real-time bid production cost determined under the incremental energy portion of the generator's Hour Ahead Market (HAM) Generation Bid, which corresponds to the generator's real-time output, for the given generator and SCD-interval.	N
	SCD DAM Incremental Energy Cost ($)	SCD Day Ahead Market (DAM) Incremental Energy Cost ($) is a number representing the total amount of real-time bid production cost determined under the incremental energy portion of the generator's Hour Ahead Market (HAM) Generation Bid, which corresponds to the generator's DAM commitments, for the given	N

Bill Code	Title	Business Description	DSS Value
		generator and SCD-interval.	
	SCD DAM Minimum Generation Cost ($)	SCD Day Ahead Market (DAM) Minimum Generation Cost ($) is a number representing the total amount of real-time minimum generation cost which corresponds to the generator's DAM commitments, determined from the generator's Hour Ahead Market (HAM) Generation Bid, for the given generator and SCD-interval.	N
	SCD Economic Basepoint (MW)	SCD Economic Basepoint (MW) is a number representing the dispatch basepoint at which a generator would be economically dispatched. This dispatch value does not include any adjustments due to system reliability and/or constraints (out of merit).	N
	SCD EPL Revenue ($)	SCD Energy Payment Limit Revenue ($) is a number representing the amount of real-time revenue associated with the generator's actual output up to it real-time economic dispatch basepoint (MW), for the given generator and SCD-interval.	N
	SCD RT Energy Cost ($)	Real-Time Energy Cost ($) is a number representing the amount of total balancing market energy cost (derived from energy bid curves and schedules) for the given SCD dispatch interval and generator.	Y
	SCD RT Net Energy Cost ($)	SCD Real-Time Net Energy Cost ($) is a number representing the amount of total net balancing market energy cost that exceeds balancing market revenues for the given SCD dispatch interval and generator.	Y
	Hr RT Net Energy Cost ($)	Hourly Real-Time Net Energy Cost ($) is a number representing the amount of total net balancing market energy cost that exceeds balancing market revenues for the given hour and generator.	Y
	Hr RT Net AS Rev ($)	Hourly Real-Time Net Ancillary Service Revenue ($) is a number representing the amount of total net balancing market ancillary service revenues (amount of cost greater than revenues) for the given hour and generator.	Y
210	Hr RT Total Net Cost ($)	Hourly Real-Time Total Net Cost ($) is a number representing the amount of total net balancing market energy and HAM ancillary service costs that exceed the corresponding balancing market revenues for the given hour and generator.	Y
	Day RT Total Net Cost ($)	Daily Real-Time Total Net Cost ($) is a number	Y

Bill Code	Title	Business Description	DSS Value
		representing the amount of total net balancing market energy and HAM ancillary service costs that exceed the corresponding balancing market revenues for the given day and generator.	
	Day RT Startup Cost ($)	Daily Real Time Startup Cost ($) is a number representing the amount of real time startup costs for a generator for the given day.	Y

1.1.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
305	Day RT BPCG Stlmnt ($)	Real-Time Bid Production Cost Guarantee Settlement ($) is a number representing the BAS-determined real-time bid production cost guarantee settlement for the given generator.	Y

1.1.4.3 Eligibility

Generators are eligible for Real-Time Bid Production Cost Guarantee ($) if:

- A Generator's real-time eligible total costs (energy, ancillary services, and start-up) exceed its total real-time/balancing market revenues (Balancing Market Energy and Supplemental Ancillary Service settlements ($)) for the given day.

The following are scenarios for which Real-Time Bid Production Cost ($) does not apply:

- Real-Time Bid Production Cost is not calculated for:
  - Station Service (Generator Type Description = "STATION SERVICE GROUP").
  - Grouped Generators (Generator Type Description = "GROUP UNIT"); see notes in the algorithm section below regarding how generators associated with a Grouped Generator are addressed.
  - Generators belonging to a Grouped Generator (sub-generator) when the generator was scheduled in the DAM (Hr DAM Sched Gen (MWh) <> 0).
  - PURPA Generators (Day PURPA Units Class Type is Class 1 or 2 during the given interval).
  - Generators that are Out of Merit for the following reasons:
    - OOM GENERATOR REQUEST (3)
    - OOM FOR DMNC TESTING (25)

The following are scenarios for which Real-Time Startup Cost ($) does not apply:

- The Generator did not produce energy in real-time (Hr Gen Avg Actual Energy (MW) <= 0).

- The Generator served Transaction Contract schedules (∑ SCD RT Sched Trans :Gen (MW) > 0 for all positive value SCD-Intervals in a given hour).
- The Generator is a Grouped Generator (Gen Type Desc = “GROUP UNIT”) (not a generator associated with a Group, but the Group itself).
- The Generator is one of the following types of generators: Generator Type Description equals CURTAILABLE LOAD, SELF SUPPLY LOAD, MPM QUICK START, NORMAL QUICK START
- The Generator was eligible for start-up in the Day Ahead Market (Hr DAM Elig for Startup Cost Flag = “Y”)
- The Generator was not scheduled in the Hour Ahead Market (HAM) (Hr HAM Sched Gen (MW) <= 0), with the exception of Generators of the following type: Gen Type Desc = NORMAL 30 MIN START
- Real-Time Bid Production Cost Guarantee is not calculated for “PURPA” Generators (Day PURPA Units Class Type is not Class 1 or 2).

1.1.4.4 Settlement Algorithm

Real-Time Bid Production Cost Guarantee ($) is calculated as:

Day RT BPCG Stlmnt ($) =

Max{Day RT Total Net Cost ($) + Day RT Startup Cost ($), 0}

Where Day RT Total Net Cost ($) is calculated as:

Day RT Total Net Cost ($) =

∑ Hr RT Total Net Cost ($), for all hours in a day.

Where:

Hr RT Total Net Cost ($) =

Hr RT Net Energy Cost ($) - Hr RT Net AS Rev ($)

And Hr RT Net Energy Cost ($) is calculated as:

Hr RT Net Energy Cost ($) =

∑ SCD RT Net Energy Cost ($), for all SCD-Intervals in an hour.

Where:

SCD RT Net Energy Cost ($) =

SCD RT Energy Cost ($) - SCD Total BalMkt Stlmnt :Gen ($)

And SCD Total BalMkt Stlmnt :Gen ($) is calculated as:

SCD Total BalMkt Stlmnt :Gen ($) =

SCD BalMkt Energy Stlmnt :Gen ($) + SCD BalMkt Loss Stlmnt :Gen ($) - SCD BalMkt Cong Stlmnt :Gen ($)

NOTE: For generators that are part of a Grouped Generator:

A similar algorithm applies for these generators as with non-grouped generators (standalone), except that the Grouped Generator's Total Balancing Market Energy Settlement ($) is allocated to each generator in the Group, based on a ratio of the individual generator's SCD Basepoint (MW) to the Grouped Generator's Total SCD Basepoint (MW) during the interval. However, when the Grouped Generator's Total SCD Basepoint (MW) is "NULL" or "0", SCD Total BalMkt Stlmnt :Gen ($) = 0 (for the generator in the group).

In addition, t~~T~~he allocated balancing market revenue (for the generator in the Group) is then ~~is~~ multiplied by ~~a ratio as follows~~the following ratio (algorithm below uses values for the Grouped Generator):

If SCD Gen Adjusted Energy (MW) > Hr DAM Sched Gen (MWh) and SCD Basepoint (MW) > Hr DAM Sched Gen (MWh), the ratio is determined as follows:

SCD Grp Gen Alloc Ratio = Min{(SCD Gen Adjusted Energy (MW) - Hr DAM Sched Gen (MWh)) ÷ (SCD Basepoint (MW) - Hr DAM Sched Gen (MWh)), 1}

Else:

SCD Grp Gen Alloc Ratio = 1.

And SCD RT Energy Cost ($) is calculated as:

The determination of SCD RT Energy Cost ($) varies under a few different scenarios, which are detailed in the following sections:

1. Generator is not eligible for any real-time energy cost guarantee during the interval.

2. Generator was not providing regulation up service, was ramp rate constrained during the interval, not dispatched Out of Merit, and was not a gas turbine generator.

~~2.~~3. Generator was scheduled only in real-time (no DAM or transaction contract schedules).

~~3.~~4. Generator was scheduled in the DAM and in real-time, and the DAM schedule (plus additional real-time schedule transactions) is *greater* than minimum generation (MW).

~~4.~~Generator was scheduled in the DAM and in real-time, and the DAM schedule (plus additional real-time schedule transactions) is *less* than minimum generation (MW).

5. ~~Generator was not providing regulation up service, was ramp rate constrained during the interval, not dispatched Out of Merit, and was not a gas turbine generator.~~

(1) SCD RT Energy Cost ($) by market rule is equal to the given generator's balancing market revenue (SCD RT Net Energy Cost ($) equals zero) for the given SCD-Interval if any of the following conditions are true:

- A Generator's real-time dispatch schedule (MW) or adjusted energy (MW) is less than or equal to its DAM scheduled energy (MW) (Min(SCD Basepoint (MW), SCD Gen Adjusted Energy (MW)) <= Hr DAM Sched Gen (MWh)), and the unit is not part of a group (GenGrp PTID is "NULL").
- A Generator's real-time dispatch schedule (MW) is less than or equal to its DAM scheduled energy (MW) (SCD Basepoint (MW) <= Hr DAM Sched Gen (MWh)), and the unit is part of a group (GenGrp PTID is not "NULL").
- A Generator's real-time dispatch schedule (MW) is less than or equal to zero, and the generator was not placed Out of Merit (SCD Basepoint (MW) <= 0 and Hr Out of Merit Flag = "N").
- The Generator was not producing energy during the interval (SCD Gen Adjusted Energy (MW) <= 0, and GenGrp PTID is "NULL") OR (SCD Gen Adjusted Energy (MW) <= 0, and GenGrp PTID is not "NULL").
  - **NOTE:** For generators that are part of a Grouped Generator (i.e. GenGrp PTID is not "NULL"): The same rule applies for these generators as with non-grouped generators (standalone), except that the actual output of the generator is measured for the Grouped Generator, therefore the entire Grouped Generator must not be producing energy during the interval.
- The Generator was scheduled in the DAM (Hr DAM Sched Gen (MWh) > 0) but was not on-dispatch (SCD On Dispatch Ind = "N") during the interval in real-time, the given hour is later than 08/29/2001 (energy payment limit's (EPL) effective date), and the generator was not out of merit for one of the following reasons:
  - COMMITED FOR ISO RELIABILITY (1)
  - OOM FOR TO LOCAL SECURITY (2)
  - COMMITTED FOR ISO RESERVES (4)
  - OOM FOR ISO SECURITY (5)
  - ISO ENERGY LIMITED RES (21)
  - ISO VOLTAGE SUPPORT (23)
  - TO VOLTAGE SUPPORT (24)
  - ISO COM FAILURE (26)
  - TO COM FAILURE (27)
- The Generator was not scheduled in the DAM or HAM (Hr DAM Sched Gen (MWh) and Hr HAM Sched Gen (MWh) = 0), was not on-dispatch (SCD On Dispatch Ind = "N") during the interval in real-time, the given hour is later than 08/29/2001 (energy payment limit's (EPL) effective date), the generator was not placed Out of Merit (Hr Out of Merit Flag = "N") and the unit is not part of a group (GenGrp PTID is "NULL").

~~OOM GENERATOR REQUEST (3)~~

~~OOM FOR DMNC TESTING (25)~~

- ~~COMMITED FOR ISO RELIABILITY (1)~~
- ~~OOM FOR TO LOCAL SECURITY (2)~~
- ~~COMMITTED FOR ISO RESERVES (4)~~
- ~~OOM FOR ISO SECURITY (5)~~
- ~~CAPACITY LIMITED RESOURCE (20)~~
- ~~ISO ENERGY LIMITED RES (21)~~
- ~~TO ENERGY LIMITED RES (22)~~
- ~~ISO VOLTAGE SUPPORT (23)~~
- ~~TO VOLTAGE SUPPORT (24)~~
- ~~ISO COM FAILURE (26)~~
- ~~TO COM FAILURE (27)~~
- ~~GENERATOR DERATE (28)~~

(2) Else the Generator is not providing regulation up service, is ramp rate constrained in Real Time, not dispatched Out of Merit, and is not a gas turbine generator:

If all of the conditions below are true:

- The generator is In Service during the interval, but ramp rate constrained (SCD In Service Ind = “R”).
- The generator was not Out of Merit during the interval (Hr Out of Merit Flag = “N”).
- The generator is not a Grouped Generator (Gen Type Desc = “GROUP UNIT” or “STATION SERVICE GROUP").
- The given SCD-Interval is >= 02/07/2000 (date when correction was made to the determination of Out of Merit flags).
- The generator is not a gas turbine generator (Gen Type Desc: “MPM 30 MIN START”, “MPM QUICK START”, “NORMAL 30 MIN START”, and “NORMAL QUICK START”).
- The generator is not on control (SCD On Control Ind <> “Y” or “NULL”), OR is not providing regulation up service (SCD AGC Basepoint (MW) <= SCD Basepoint (MW)), OR the current interval is < 12/01/2000 (the Regulation Up Effective Date), then:

If SCD RT Sched Trans :Gen (MW) and Hr DAM Sched Gen (MWh) = 0, RT Energy Cost ($) is determined as follows.

If Hr HAM Gen Bid :Min Gen (MW) <> 0

SCD RT Energy Cost ($) =

Min[Hr HAM Gen Bid :Min Gen Cost ($), (Hr HAM Gen Bid :Min Gen Cost ($) ÷ Hr HAM Gen Bid :Min Gen (MW)) * SCD Gen Adjusted Energy (MW)] * {SCD Interval Seconds ÷ 3,600 Seconds}

Else:

SCD RT Energy Cost ($) = 0

Else RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):

SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)

(3~~2~~) Else the Generator is scheduled in Real Time but was NOT scheduled in the Day Ahead Market or via Transactions (SCD RT Sched Trans :Gen (MW) and Hr DAM Sched Gen (MWh) = 0):

If SCD Gen RT BPCG Basis (MW) >= (Hr HAM Gen Bid :Min Gen (MW) + Hr HAM Sched Reg Avail (MW))

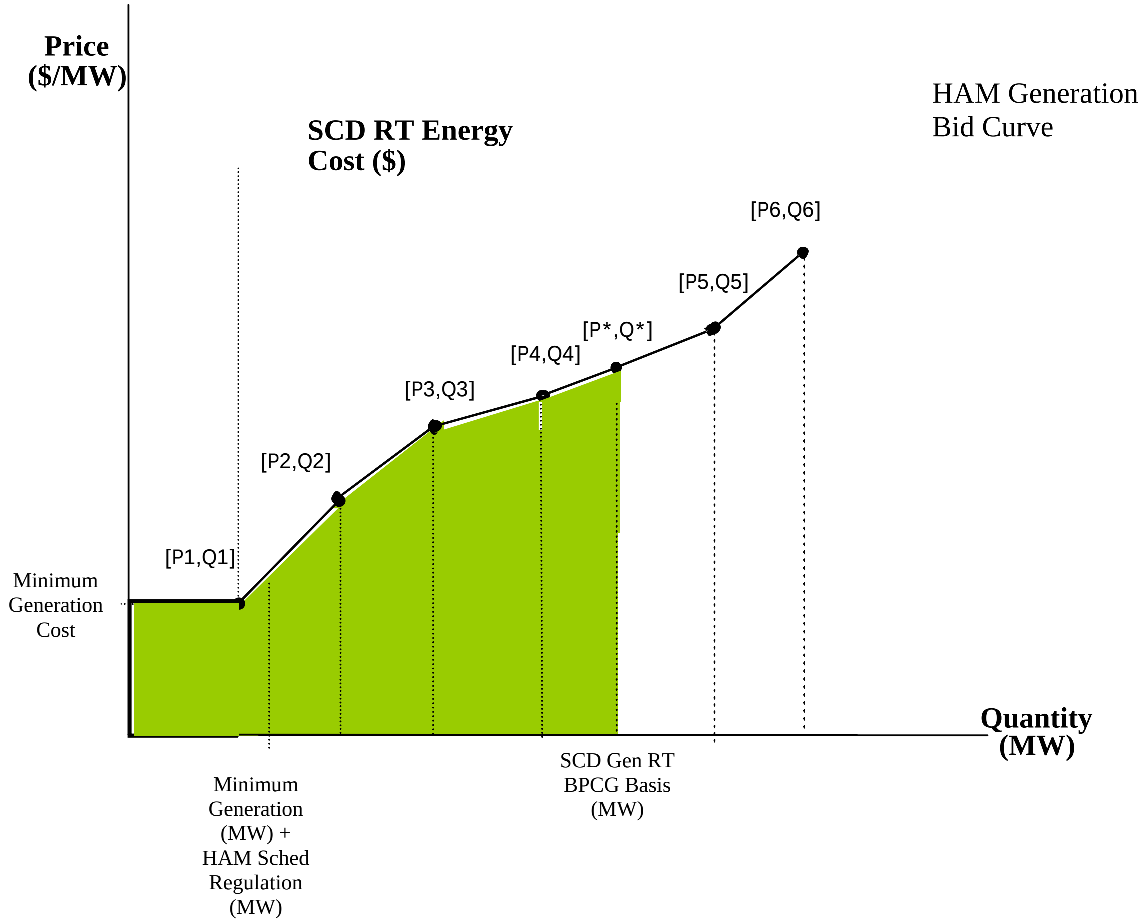
SCD RT Energy Cost ($) =

{Hr HAM Gen Bid :Min Gen Cost ($) + SCD RT Incremental Energy Cost ($)} * {SCD Interval Seconds ÷ 3,600 Seconds}

Else:

SCD RT Energy Cost ($) = 0

Where SCD RT Incremental Energy Cost ($) is the sum of the Bid Production Cost under the HAM Generation Bid for each dispatch segment from Hr HAM Gen Bid :Min Gen (MW) + Hr HAM Sched Reg Avail (MW) to SCD Gen RT BPCG Basis (MW).



Note the following exceptions:

If there are no incremental bid points for the given generator and interval (Hr HAM Gen Bid Dispatch Seg :Curve + Hr HAM Gen Bid Dispatch Seg :Block = 0, or NULL), RT Energy Cost ($) is determined as only the generator's Minimum Generation Costs ($) provided on their HAM Generation Bid, as follows:

SCD RT Energy Cost ($) =

Hr HAM Gen Bid :Min Gen Cost ($) * {SCD Interval Seconds ÷ 3,600 Seconds}

Else the generator's RT BPCG energy basis is less than its Minimum Generation level (SCD Gen RT BPCG Basis (MW) < Hr HAM Gen Bid :Min Gen (MW)), RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):

SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)

Else the generator is off dispatch (SCD On Dispatch Ind = "N"), the given SCD-Interval is > 08/29/2001 (Energy Payment Limit Effective

Date), and the generator was not out of merit for one of the following reasons:

- COMMITED FOR ISO RELIABILITY (1)
- OOM FOR TO LOCAL SECURITY (2)
- COMMITTED FOR ISO RESERVES (4)
- OOM FOR ISO SECURITY (5)
- ISO ENERGY LIMITED RES (21)
- ISO VOLTAGE SUPPORT (23)
- TO VOLTAGE SUPPORT (24)
- ISO COM FAILURE (26)
- TO COM FAILURE (27)

~~OOM GENERATOR REQUEST (3)~~

~~CAPACITY LIMITED RESOURSE (20)~~

~~OOM FOR DMNC TESTING (25)~~

~~GENERATOR DERATE (28)~~

- If Hr HAM Gen Bid :Min Gen (MW) <> 0~~COMMITED FOR ISO RELIABILITY (1)~~
- ~~OOM FOR TO LOCAL SECURITY (2)~~
- ~~COMMITTED FOR ISO RESERVES (4)~~
- ~~OOM FOR ISO SECURITY (5)~~
- ~~CAPACITY LIMITED RESOURCE (20)~~
- ~~ISO ENERGY LIMITED RES (21)~~
- ~~TO ENERGY LIMITED RES (22)~~
- ~~ISO VOLTAGE SUPPORT (23)~~
- ~~TO VOLTAGE SUPPORT (24)~~
- ~~ISO COM FAILURE (26)~~
- ~~TO COM FAILURE (27)~~
- ~~GENERATOR DERATE (28)~~

SCD RT Energy Cost ($) =

Min[Hr HAM Gen Bid :Min Gen Cost ($), (Hr HAM Gen Bid :Min Gen Cost ($) ÷ Hr HAM Gen Bid :Min Gen (MW)) * Min{SCD Gen

Adjusted Energy (MW), SCD Energy Pmt Limit (MW)}] * {SCD Interval Seconds ÷ 3,600 Seconds}

Else:

SCD RT Energy Cost ($) = 0

NOTE: In this specific scenario, the revenue is also calculated slightly differently. Therefore, the following calculation should be used instead of the generator's total balancing market energy settlement (SCD Total BalMkt Stlmnt :Gen ($)) on the revenue side of the overall algorithm:

If SCD RT Total Price :Gen ($/MW) >= 0

SCD EPL Revenue ($) =

Min{SCD Gen Adjusted Energy (MW), SCD Energy Pmt Limit (MW)} * SCD RT Total Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 Seconds}

Else

SCD EPL Revenue ($) =

-Hr HAM Gen Bid :Min Gen (MW) * SCD RT Total Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 Seconds}

~~{Hr HAM Gen Bid :Min Gen Cost ($) - (Max{SCD RT Incremental Energy Cost ($) + SCD EPL Revenue ($)), 0}} * {SCD Interval Seconds ÷ 3,600 Seconds}~~

~~Where SCD EPL Revenue ($) =~~

~~Max[Min{SCD Gen Adjusted Energy (MW), SCD Energy Pmt Limit (MW)} - SCD Economic Basepoint (MW), 0] * SCD RT Total Price :Gen ($/MW)~~

~~And SCD RT Incremental Energy Cost ($) is the sum of the Bid Production Cost under the HAM Generation Bid for each dispatch segment from Hr HAM Gen Bid :Min Gen (MW) to the SCD Economic Basepoint (MW).~~

~~And SCD Economic Basepoint (MW) is the point on the generator's HAM Generation Bid corresponding to the SCD RT Total Price :Gen ($/MW) for the given generator, for the given interval.~~

And SCD RT Total Price :Gen ($/MW) =

SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)

~~**NOTE:** For generators that are part of a Grouped Generator: The same rule applies for these generators as with non-grouped generators (standalone), except that the actual output of the generator is measured for the Grouped Generator, vs. the individual generators within the Group.~~

~~If there are no incremental bid points for the given generator and interval (Hr HAM Gen Bid Dispatch Seg :Curve + Hr HAM Gen Bid Dispatch Seg :Block = 0, or NULL), RT Energy Cost ($) is determined as only the generator's Minimum Generation Costs ($) provided on their HAM Generation Bid, as follows:~~

~~SCD RT Energy Cost ($) =~~

~~Hr HAM Gen Bid :Min Gen Cost ($) * {SCD Interval Seconds ÷ 3,600 Seconds}~~

~~If the generator's RT BPCG energy basis is less than its Minimum Generation level (SCD Gen RT BPCG Basis (MW) < Hr HAM Gen Bid :Min Gen (MW)), RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):~~

~~SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)~~

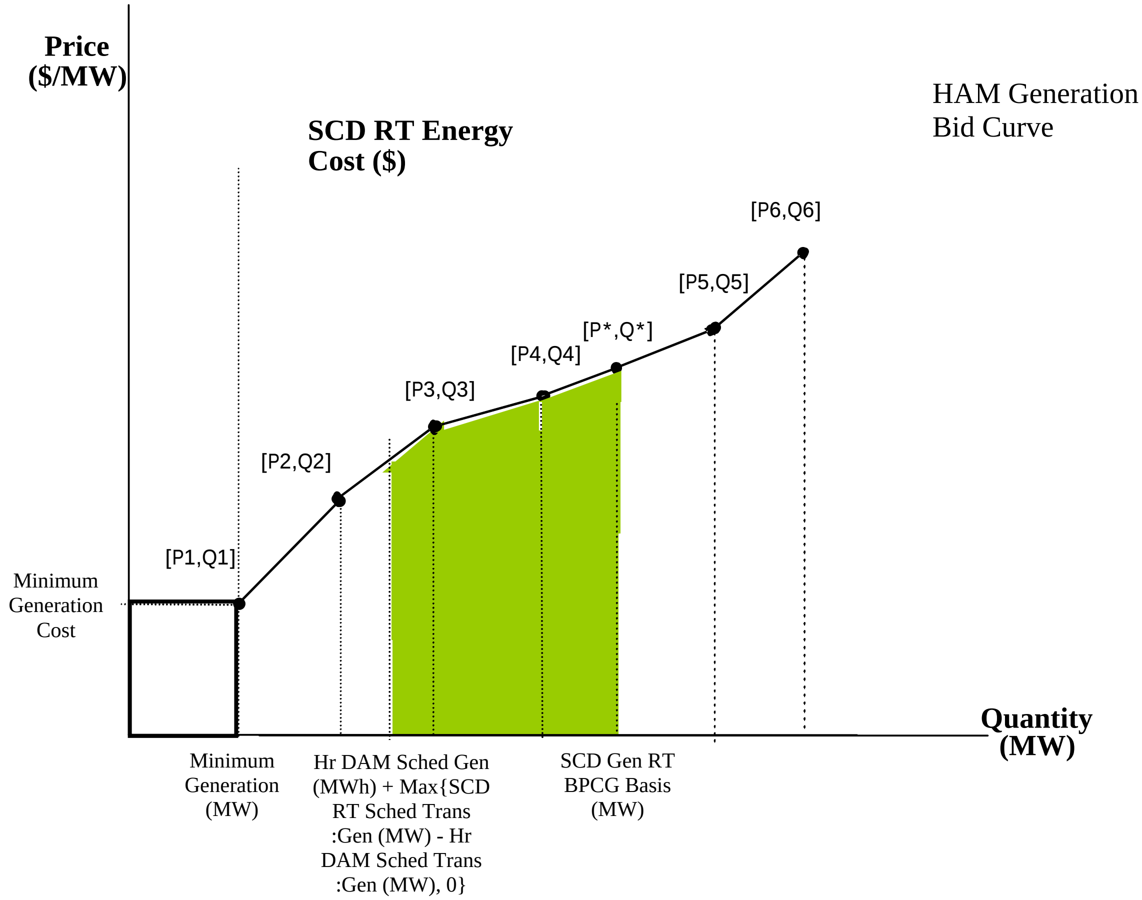
(4~~3~~) Else the Generator is scheduled in the Day Ahead and Real Time Markets, and its total DAM and Transaction related energy ~~the DAM Schedule Generation plus any additional RT Transaction Schedule~~ is greater than / equal to the generator's Minimum Generation level as defined by its HAM Generation Bid (Hr DAM Sched Gen (MWh) + Max{SCD RT Sched Trans :Gen (MW) - Hr DAM Sched Trans :Gen (MW), 0} >= Hr HAM Gen Bid :Min Gen (MW))

SCD RT Energy Cost ($) =

{SCD RT Incremental Energy Cost ($) - SCD DAM Incremental Energy Cost ($)} * {SCD Interval Seconds ÷ 3,600 Seconds}

Where SCD RT Incremental Energy Cost ($) is the sum of the Bid Production Cost under the HAM Generation Bid for each dispatch segment from Hr HAM Gen Bid :Min Gen (MW) to SCD Gen RT BPCG Basis (MW).

And SCD DAM Incremental Energy Cost ($) is the sum of the Bid Production Cost under the HAM Generation Bid for each dispatch segment from Hr HAM Gen Bid :Min Gen (MW) to Hr DAM Sched Gen (MWh) + Max{SCD RT Sched Trans :Gen (MW) - Hr DAM Sched Trans :Gen (MW), 0}.



Note the following exceptions:

If there are no incremental bid points for the given generator and interval (Hr HAM Gen Bid Dispatch Seg :Curve + Hr HAM Gen Bid Dispatch Seg :Block = 0, or NULL), RT Energy Cost ($) is zero:

SCD RT Energy Cost ($) = 0

Else the generator's RT BPCG energy basis is less than its Minimum Generation level (SCD Gen RT BPCG Basis (MW) < Hr HAM Gen Bid :Min Gen (MW)), RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):

SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)

Else the generator is:

- Scheduled to provide regulation service (Hr HAM Sched Reg Avail (MW) > 0) but is not scheduled in the DAM at a level greater than its regulation schedule (MW) plus its minimum generation level (MW) (Hr HAM Sched Reg Avail (MW) + Hr HAM Gen Bid :Min Gen (MW) > Hr DAM Sched Gen (MWh)),

- Not dispatched Out of Merit (Hr Out of Merit Flag = "N"),
- And the current interval is < 05/31/2002 (downward regulation effective date),

RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):

SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)

(~~5~~4) Else the Generator is scheduled in the Day Ahead and Real Time Markets, and its total DAM and Transaction related energy ~~the DAM Schedule Generation plus any additional RT Transaction Schedule~~ is less than the generator's Minimum Generation level as defined by its HAM Generation Bid (Hr DAM Sched Gen (MWh) + Max{SCD RT Sched Trans :Gen (MW) - Hr DAM Sched Trans :Gen (MW), 0} < Hr HAM Gen Bid :Min Gen (MW))

SCD RT Energy Cost ($) =

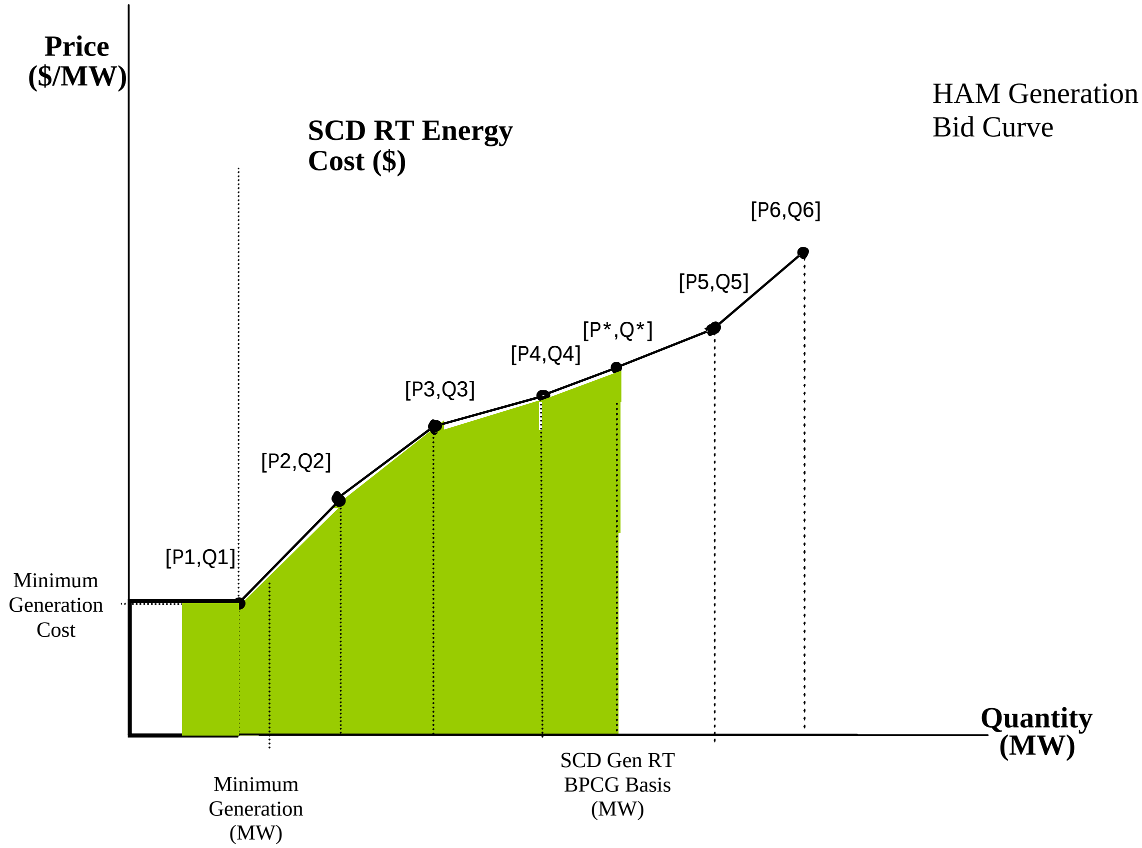
{Hr HAM Gen Bid :Min Gen Cost ($) + SCD RT Incremental Energy Cost ($) - SCD DAM Minimum Generation Cost ($)} * {SCD Interval Seconds ÷ 3,600 Seconds}

Where SCD RT Incremental Energy Cost ($) is the sum of the Bid Production Cost under the HAM Generation Bid for each dispatch segment from Hr HAM Gen Bid :Min Gen (MW) to SCD Gen RT BPCG Basis (MW).

And SCD DAM Minimum Generation Cost ($) =

Hr HAM Gen Bid :Min Gen Cost ($) *

[{Hr DAM Sched Gen (MWh) + Max{SCD RT Sched Trans :Gen (MW) - Hr DAM Sched Trans :Gen (MW), 0}} ÷ Hr HAM Gen Bid :Min Gen (MW)]



Note the following exceptions:

If there are no incremental bid points for the given generator and interval (Hr HAM Gen Bid Dispatch Seg :Curve + Hr HAM Gen Bid Dispatch Seg :Block = 0, or NULL), RT Energy Cost ($) is determined as the generator's HAM Minimum Generation Cost ($) minus the amount of HAM Minimum Generation Costs ($) corresponding to its DAM Scheduled Generation plus any additional RT Transaction Schedules:

SCD RT Energy Cost ($) =

{Hr HAM Gen Bid :Min Gen Cost ($) - SCD DAM Minimum Generation Cost ($)} * {SCD Interval Seconds ÷ 3,600 Seconds}

Where SCD DAM Minimum Generation Cost ($) =

Hr HAM Gen Bid :Min Gen Cost ($) *

[{Hr DAM Sched Gen (MWh) + Max{SCD RT Sched Trans :Gen (MW) - Hr DAM Sched Trans :Gen (MW), 0}} ÷ Hr HAM Gen Bid :Min Gen (MW)]

Else the generator's RT BPCG energy basis is less than its Minimum Generation level (SCD Gen RT BPCG Basis (MW) < Hr HAM Gen Bid :Min Gen (MW)), RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):

SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)

Else the generator is:

- Scheduled to provide regulation service (Hr HAM Sched Reg Avail (MW) > 0) but it not scheduled in the DAM at a level greater than its regulation schedule (MW) plus its minimum generation level (MW) (Hr HAM Sched Reg Avail (MW) + Hr HAM Gen Bid :Min Gen (MW) > Hr DAM Sched Gen (MWh)),
- Not dispatched Out of Merit (Hr Out of Merit Flag = "N"),
- And the current interval is < 05/31/2002 (downward regulation effective date),

RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):

SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)

~~*(5) Else the Generator is not providing regulation up service, is ramp rate constrained in Real Time, not dispatched Out of Merit, and is not a gas turbine generator:*~~

~~If all of the conditions below are true:~~

- ~~The generator is In Service during the interval, but ramp rate constrained (SCD In Service Ind = "R").~~
- ~~The generator was not Out of Merit during the interval (Hr Out of Merit Flag = "N").~~
- ~~The generator is not a Grouped Generator (Gen Type Desc = "GROUP UNIT").~~
- ~~The given SCD Interval is >= 02/07/2000 (date when correction was made to the determination of Out of Merit flags).~~
- ~~The generator is not a gas turbine generator (Gen Type Desc: "MPM 30 MIN START", "MPM QUICK START", "NORMAL 30 MIN START", "NORMAL QUICK START").~~
- ~~The generator is not on control (SCD On Control Ind <> "Y" or "NULL"), is not providing regulation up service (SCD AGC Basepoint (MW) <= SCD Basepoint (MW)), and the current interval is < 12/01/2000 (the Regulation Up Effective Date), then:~~

~~If SCD RT Sched Trans :Gen (MW) and Hr DAM Sched Gen (MWh) = 0, RT Energy Cost ($) is determined as only the generator's Minimum Generation Costs ($) provided on their HAM Generation Bid, as follows.~~

~~If Hr HAM Gen Bid :Min Gen (MW) <> 0~~

~~SCD RT Energy Cost ($) =~~

~~Min[Hr HAM Gen Bid :Min Gen Cost ($), (Hr HAM Gen Bid :Min Gen Cost ($) ÷ Hr HAM Gen Bid :Min Gen (MW)) * SCD Gen Adjusted Energy (MW)]~~

~~Else:~~

~~SCD RT Energy Cost ($) = 0~~

~~SCD RT Energy Cost ($) =~~

~~Hr HAM Gen Bid :Min Gen Cost ($) * {SCD Interval Seconds ÷ 3,600 Seconds}~~

~~Else RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):~~

~~SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)~~

NOTES:

1. –Please see Appendix A, Figure 1.3 for more information on how to determine the incremenatal cost ($) on a given Generation Bid corresponding to a specific upper and lower generation output level (MW).
2. If neither of the above (5) scenarios are met, RT Energy Cost ($) is equal to the generator's balancing market revenue in the given interval (Net Energy Cost ($) equals zero):

   SCD RT Energy Cost ($) = SCD Total BalMkt Stlmnt :Gen ($)

And SCD Gen RT BPCG Basis (MW) is calculated as:

The determination of SCD Gen RT BPCG Basis (MW) varies under a couple of different scenarios:

1. Out of Merit Generators
2. Non-Regulating Generators (Gilboa)
3. In Service Regulating Generators
4. Non-Regulating Generators
5. Off Service Generators

(1) Out of Merit generator:

If the generator was considered out of merit for the given hour (Hr Out of Merit Flag = "Y"), the basis value will always be set to the generators adjusted energy:

SCD Gen RT BPCG Basis (MW) = SCD Gen Adjusted Energy (MW)

*(2) For a Gilboa (*Gen PTID = 23599, 23756, 23757, 23758, or 23759*) and Non-Regulating (SCD On Control Ind <> "Y") generator:*

The Gilboa generators will be settled using the minimum of their Basepoint (MW) or Adjusted Energy (MW), as follows:

SCD Gen RT BPCG Basis (MW) = Min{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}

(3) For an In Service (SCD In Service Ind = "Y" or "R") and Regulating (SCD On Control Ind = "Y") generator:

If the generator under-generated during the interval (SCD Gen Adjusted Energy (MW) < SCD AGC Basepoint (MW)):

If the generator was instructed to regulate-down (SCD AGC Basepoint (MW) < SCD Basepoint (MW)):

SCD Gen RT BPCG Basis (MW) =

SCD Gen Adjusted Energy (MW)

Else If the generator was instructed to regulate-up (SCD AGC Basepoint (MW) >= SCD Basepoint (MW)):

SCD Gen RT BPCG Basis (MW) =

Min{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}

Else If the generator over-generated during the interval (SCD Gen Adjusted Energy (MW) >= SCD AGC Basepoint (MW)):

If the given SCD-Interval was a Reserve Pickup Interval (SCD Reserve Pickup Ind = "Y"):

SCD Gen RT BPCG Basis (MW) =

Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}

NOTE: For this specific case, SCD Reserve Pickup Ind can be overridden and set to "Y" when the generator is considered Out of Merit during the interval and SCD Max Gen Flag = "Y".

Else (given SCD-Interval was NOT a Reserve Pickup Interval (SCD Reserve Pickup Ind <> "Y")

If the generator was instructed to regulate-up (SCD AGC Basepoint (MW) >= SCD Basepoint (MW)):

SCD Gen RT BPCG Basis (MW) = SCD Basepoint (MW)

Else If the generator was instructed to regulate-down (SCD AGC Basepoint (MW) < SCD Basepoint (MW)):

SCD Gen RT BPCG Basis (MW) = SCD AGC Basepoint (MW)

~~2. In-Service Regulating Generators~~

(4~~1~~) Non-Regulating (SCD On Control Ind <> "Y") generator:

If the generator under-generated during the interval, or the given SCD-Interval was a Reserve Pickup Interval (SCD Gen Adjusted Energy (MW) < SCD Basepoint (MW) or SCD Reserve Pickup Ind = "Y"):

SCD Gen RT BPCG Basis (MW) = SCD Gen Adjusted Energy (MW)

NOTE: For this specific case, SCD Reserve Pickup Ind can be overridden and set to "Y" when the generator is considered Out of Merit during the interval and Hr Max Gen Flag = "Y".

Else the generator produced as expected or over-generated during the interval and was not A Reserve Pickup Interval (SCD Gen Adjusted Energy (MW) >= SCD Basepoint (MW) and SCD Reserve Pickup Ind <> "Y"):

SCD Gen RT BPCG Basis (MW) = SCD Basepoint (MW)

NOTE: NYISO implemented the Energy Payment Limit (EPL) (MW) feature on 08/29/2001 to allow non-regulating generators (SCD On Control Ind <> "Y") to chase real-time market prices within defined limits. This market change impacted the determination of a generator's RT BPCG basis (MW) as follows:

- Prior to 08/29/2001, no impact (determined as noted above).
- On or after 08/29/2001, SCD Energy Pmt Limit (MW) would be used in place of SCD Basepoint (MW) to calculate SCD Gen RT BPCG Basis (MW) for case (4) non-regulating generators.

(5) For an Off Service (SCD In Service Ind <> "Y" or "R") generator:

SCD Gen RT BPCG Basis (MW) = 0.

~~*(2) For an In Service (SCD In Service Ind = "Y" or "R") and Regulating (SCD On Control Ind = "Y") generator:*~~

~~If the generator under-generated during the interval (SCD Gen Adjusted Energy (MW) < SCD AGC Basepoint (MW)):~~

~~If the generator was instructed to regulate-down (SCD AGC Basepoint (MW) < SCD Basepoint (MW)):~~

~~SCD Gen RT BPCG Basis (MW) =~~

~~SCD Gen Adjusted Energy (MW)~~

~~Else If the generator was instructed to regulate-up (SCD AGC Basepoint (MW) >= SCD Basepoint (MW)):~~

~~SCD Gen RT BPCG Basis (MW) =~~

~~Min{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}~~

~~Else If the generator over-generated during the interval (SCD Gen Adjusted Energy (MW) >= SCD AGC Basepoint (MW)):~~

~~If the given SCD-Interval was a Reserve Pickup Interval (SCD Reserve Pickup Ind = “Y”):~~

~~SCD Gen RT BPCG Basis (MW) =~~

~~Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}~~

~~**NOTE:** For this specific case, SCD Reserve Pickup Ind can be overridden and set to “Y” when the generator is considered Out of Merit during the interval and SCD Max Gen Flag Hr Max Gen Flag = “Y”.~~

~~Else (given SCD-Interval was NOT a Reserve Pickup Interval (SCD Reserve Pickup Ind <> “Y”)~~

~~If the generator was instructed to regulate-up (SCD AGC Basepoint (MW) >= SCD Basepoint (MW)):~~

~~SCD Gen RT BPCG Basis (MW) = SCD Basepoint (MW)~~

~~Else If the generator was instructed to regulate-down (SCD AGC Basepoint (MW) < SCD Basepoint (MW)):~~

~~SCD Gen RT BPCG Basis (MW) = SCD AGC Basepoint (MW)~~

NOTES:

1. For generators that are part of a Grouped Generator (children of the group): the SCD Gen RT BPCG Basis (MW) is determined slightly different than above, as follows:

If SCD Gen Adjusted Energy (MW) > Hr DAM Sched Gen (MWh) and SCD Basepoint (MW) > Hr DAM Sched Gen (MWh), for the Grouped Generator~~the ratio is determined as follows~~:

SCD Gen RT BPCG Basis (MW) =

SCD Basepoint (MW) * SCD Grp Gen Alloc Ratio~~a ratio determined using the follow algorithm and data from the Grouped Generator:~~

Where:

SCD Grp Gen Alloc Ratio = Min{(SCD Gen Adjusted Energy (MW) - Hr DAM Sched Gen (MWh)) ÷ (SCD Basepoint (MW) - Hr DAM Sched Gen (MWh)), 1}

Else

SCD Gen RT BPCG Basis (MW) = 0

2. If the given generator's ~~SCD Gen BalMkt Basis (MW)~~SCD Gen RT BPCG Basis (MW) is negative, and the generator is ~~not~~Not a Gilboa generator (Gen PTID <> 23599, 23756, 23757, 23758, or 23759):

SCD Gen RT BPCG Basis (MW) = 0

And Hr RT Net AS Rev ($) is calculated as:

Hr RT Net AS Rev ($) =

Hr NASR Reg Margin ($) + Hr NASR OpRes Margin ($) + Hr VSS LOC Stlmnt ($)[2]

Where:

Hr NASR Reg Margin ($) =

Max{[Hr Sup Reg Avail Stlmnt ($) - {Hr Sup Sched Reg Avail (MW) * Hr HAM AS Bid Reg :Price ($/MW)}], 0} + Hr Reg Energy Margin ($)

Hr NASR OpRes Margin ($) =

[Hr Sup 10Sync Unadj Avail ($)~~Hr Sup 10Sync Avail Stlmnt ($)~~ - {Hr Sup Sched 10Sync Avail (MWh) * Hr HAM AS Bid :10Sync Price ($/MW)}] + Hr Op Res LOC Credit ($)~~Hr Op Res LOC Stlmnt ($)~~ + Hr Adj 10NSync LOC Cred ($)~~Hr Adj 10NSync LOC Stlmnt ($)~~

Where:

Hr Sup Sched Reg Avail (MW) =

Max{Hr HAM Sched Reg Avail (MW) - Hr DAM Sched Reg Avail (MWh), 0}

Hr Sup Sched 10Sync Avail (MWh) =

Max{Hr HAM Sched 10Sync Avail (MWh) - Hr DAM Sched 10Sync Avail (MWh), 0}

And Day RT Startup Cost ($) is calculated as:

Day RT Startup Cost ($) =

[2] See section on Voltage Support Service Lost Opportunity Cost (LOC) settlement.

∑ Hr RT Start Up Cost :BME ($), for all hours in a day where Hr Gen Meter Energy (MWh) > 0 (or Hr Gen Avg Actual Energy (MW) > 0 in cases where Hr Gen Meter Energy (MWh) = "NULL".

NOTES:

- Real-Time Start-Up cost is a function of a generator's actual down time during the Real-Time Market and its Start-Up cost curve (above any generator Start-Up cost incurred during the DAM). Start-Up cost is computed during NYISO's Balancing Market Evaluation (BME) process and provided to its Billing and Accounting System (BAS) for application to the power supplier Real-Time BPCG settlement.
- For individual generators that are part of a Group (i.e. GenGrp PTID is not "NULL"):
  - Hr Gen Meter Energy (MWh) and Hr Gen Avg Actual Energy (MW) are measured for the Grouped Generator.
- Start-Up cost is ineligible for recovery for generators that have bilateral commitments.
  - If ∑ SCD RT Sched Trans :Gen (MW) > 0 for all positive value SCD-Intervals in a given hour.

    Set Hr RT Start Up Cost :BME ($) = 0

1.1.4.5 Additional Information

- In cases where the Hour Ahead Market (HAM) Generation Bid does not exist, the above calculation of SCD RT Energy Cost ($)~~settlement~~ will be calculated using the Day Ahead Market (DAM) Generation Bid (if it exists), making the assumption that the HAM Generation Bid is the same as the DAM Generation Bid. If neither a HAM or DAM Generation Bid exists, SCD RT Energy Cost ($) is set to 0.
  - To ~~To~~ determine whether a HAM/DAM Generation Bid exists, evaluate Hr HAM Gen Bid :Status ID & Hr DAM Gen Bid :Status ID:~~determine whether a DAM/HAM Generation Bid exists, evaluate Hr DAM Ind & Hr HAM Ind:~~
    - If ~~If~~ Hr HAM Gen Bid :Status ID = "10 (Bid Accepted), 12 (Modified), or 8 (Bid Rejected)", then a HAM Generation Bid exists, otherwise:~~Hr DAM Ind = "N", then no DAM Generation Bid exists.~~
    - If ~~If~~ Hr DAM Gen Bid :Status ID = "10 (Bid Accepted), or 6 (Validation Passed)", then a DAM Generation Bid exists.

~~Hr HAM Ind = "N", then no HAM Generation Bid exists.~~

1.1.4.6 References

The applicability of Real-Time Bid Production Cost Guarantee Payments is described within Attachment C of the MST (Market Administration and Control Area Services Tariff). It is also referenced within Schedule 1 (Section 4 B) of the OATT (Open Access Transmission Tariff).

1.1.5 Day-Ahead Market (DAM) Margin Assurance

1.1.5.1 Description

The Day-Ahead Market (DAM) Margin Assurance settlement ($) is a payment for Power Suppliers that are required to purchase energy in the NYISO Balancing Energy Market as a result of being dispatched below their DAM schedule by NYISO for reliability reasons. Therefore, this settlement guarantees a generator's DAM margin (profit) is not reduced by balancing market energy settlements in Real-Time due to NYISO scheduling.

The DAM Margin Assurance ($) is calculated as the difference between balancing market charges and DAM Generation Bid incremental cost intended to address generators that are dispatched out of merit by the NYISO in real-time at values less than their DAM scheduled generation (MW).

This settlement can result from two different conditions: (1) generators dispatched below their DAM scheduled generation (MW) or moved out of merit by NYISO for reliability reasons, and (2) generators moved by a transmission owner for local reliability reasons (under the local reliability rules (LRR)). The settlement is the same in both cases.

This settlement is a payment (when related Balancing Market Cost > Bid Cost) to the Power Supplier. It is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each generator dispatched below their DAM scheduled generation (MW).

The total settlement is the net of 2 major components as follows:

- *DAM Margin Assurance Balancing Market Cost* ($) - The charges associated to the quantity (MW) a generator is required to purchase in the NYISO Balancing Market (at the real-time prices (LBMP) for energy, losses, and congestion) as a result of being dispatched below its DAM schedule.
- *DAM Margin Assurance Bid Cost* ($) - The generation incremental cost a Market Participant would save for not producing the energy equivalent to the quantity (MW) a generator is dispatched below its DAM schedule.

1.1.5.2 Required Data Elements

1.1.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	GenGrp PTID	Generator Group PTID is a number representing the unique point identifier for a group of generators.	Y
	Hr DAM Ind	Hourly DAM Indicator is a character that represents whether a DAM Generation Bid exists.	Y
	Hr DAM Gen Bid :Min Gen (MW)	Day Ahead Market Generator Bid Minimum Generation is a number representing the minimum generation level (MW) for the generator during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MW) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales)	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Sched 10Sync Avail (MW)	Hourly Hour Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MW) is a number representing the amount of Hour Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MW)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MW) is a number representing the amount of Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 30Min Avail (MW)	Hourly Hour Ahead Market Scheduled 30-Minute Operating Reserves Availability (MW) is a number representing the amount of Hour Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	SCD Gen Upper Op Limit (MW)	SCD Generator Uper Operating Limit (MW) is a number indicating the maximum operating capacity for a generator during the given period.	Y
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y
	SCD Basepoint (MW)	Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated over approximately 5 minute time intervals communicated to support generation dispatch	Y
	SCD RT Energy Price :Gen ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component)	Y
	SCD RT Loss Price :Gen ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component)	Y
	SCD RT Cong Price :Gen ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component)	Y
	Hr Out of Merit Type ID	Hourly Out of Merit Type ID is a number representing the reason for an out of economic merit dispatch for the given generator and hour.	Y
5220	Hr Out of Merit Type Desc	Hourly Out of Merit Type Description represents the reason for an out of economic merit dispatch	Y

Bill Code	Title	Business Description	DSS Value
		for the given generator and hour.	
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y
5270	Hr # Seconds On Dispatch	Hourly Number of Seconds On Dispatch is a number representing the amount of time in seconds a generator is actually on NYISO generation dispatch for the given hour.	Y
	Hr HAM Gen Bid On Dispatch Ind	Hourly Hour Ahead Market Generation Bid On Dispatch Indicator is a character representing whether or not the generator was bid into the NYISO Hour Ahead Market by the generator's organization as an on dispatch generator (values are Y or N).	Y
	SCD Reg Negative Error (MW)	SCD Regulation Negative Error (MW) is a number representing the average amount of energy the given non-regulating generator produced short of its SCD Basepoint (below acceptable tolerance levels) for the given SCD-interval.	Y
	SCD Eligible for 10Sync LOC Ind	SCD Eligible for 10 Minute Synchronous Reserve Lost Opportunity Cost Indicator is a character representing whether or not the given generator is eligible for a 10 Minute Synchronous Reserve LOC Payment in the given ~~hour~~ SCD-interval (values are Y or N).	N

1.1.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD RT Total Price :Gen ($/MW)	Real-Time Total Price ($/MW) is a number representing the total LBMP price of a generator bus	Y
	SCD Adj DAM Sched Gen (MW)	SCD Day Ahead Adjusted Scheduled Generation (MW) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales), adjusted if the generator is derated such that it cannot fulfill its entire Operating Reserve Availability schedules (commitment).	N

	SCD DAM MarginAssrc BalMkt Cost ($)	SCD Day Ahead Market Margin Assurance Balancing Market Cost ($) is a number representing the amount of balancing market energy costs a generator incurred (due to NYISO dispatching the unit in real-time below their Day Ahead Market commitment) that is eligible for DAM Margin Assurance recovery.	N
	SCD DAM MarginAssrc Bid Cost ($)	SCD Day Ahead Market Margin Assurance Bid Cost ($) is a number representing the amount of determined bid cost (from a generator's HAM generation bid curve) that corresponds to the costs eligible for DAM Margin Assurance recovery.	N
	SCD DAM Margin Assurance ($)	SCD Day Ahead Margin Assurance ($) is a number representing the DAM Margin Assurance settlement amount which is designed to ensure a generator dispatched in real-time by NYISO below the DAM commitment does not have its DAM margin eroded by additional balancing market energy charges; for the given generator for the given SCD-interval.	Y

1.1.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
239	Hr DAM Margin Assurance ($)	Hourly Day Ahead Margin Assurance ($) is a number representing the DAM Margin Assurance settlement amount which is designed to ensure a generator dispatched in real-time by NYISO below the DAM commitment does not have its DAM margin eroded by additional balancing market energy charges; for the given generator for the given hour.	Y
238	Hr DAM Margin Assurance :LRR ($)	Hourly Day Ahead Margin Assurance Local Reliability Rules ($) is a number representing the DAM Margin Assurance settlement amount which is designed to ensure a generator dispatched in real-time by a transmission owner below the DAM commitment does not have its DAM margin eroded by additional balancing market energy charges; for the given generator for the given hour.	Y

1.1.5.3 Eligibility

Generators are eligible for DAM Margin Assurance ($) if any of the following conditions exist:

- The generator is placed Out of Merit by NYISO for the following reasons: “COMMITED FOR ISO RELIABILITY”, “OOM FOR TO LOCAL SECURITY”, “COMMITED FOR ISO RESERVES”, or “OOM FOR ISO SECURITY” , and the unit is part of a group (GenGrp PTID <> “NULL”).

- The generator's:
  - SCD Basepoint (MW) < Hr DAM Sched Gen (MWh), and
  - Is not designated as a PURPA generator, and
  - Is on NYISO dispatch during the hour (Hr # Seconds On Dispatch > 0 & Hr HAM Gen Bid On Dispatch Ind = "Y").
    - **NOTE:** When Hr # Seconds On Dispatch is NULL, set to 3600. When Hr HAM Gen Bid On Dispatch Ind is NULL, set to "Y".

- ~~If the given interval < 08/29/2001 00:00 (Regulation Negative Control Error Date), the DAM Margin Assurance settlement is calculated as noted below. However, if the given interval is >= 08/29/2001 00:00, the generator's SCD Gen Adjusted Energy (MW) must be greater than its SCD Reg Negative Error (MW). Otherwise, SCD DAM Margin Assurance ($) = 0.~~

The following are scenarios for which DAM Margin Assurance ($) does not apply:

- When the generator is in the absence of a Day Ahead Market (DAM) Generation Bid (Hr DAM Ind = "N")
- When the generator is derated following the Day-Ahead Market (Hr Out of Merit Type Desc is equal to "GENERTOR DERATE") such that:

  SCD Gen Upper Op Limit (MW) < {Hr HAM Sched 10Sync Avail (MW) + Hr HAM Sched 10NSync Avail (MW) + Hr HAM Sched 30Min Avail (MW)}
- When the generator is eligible for a 10 Minute Synchronous Reserve Lost Opportunity Cost (LOC) payment:
  - SCD Eligible for 10Sync LOC Ind = "Y", and
  - Hr Out of Merit Type Desc is not equal to "COMMITED FOR ISO RELIABILITY", "OOM FOR TO LOCAL SECURITY", "COMMITED FOR ISO RESERVES", or "OOM FOR ISO SECURITY", and
  - DAM Margin Assurance payment is positive for the given SCD interval.
- DAM Margin Assurance ($) is not calculated for Grouped Generators (Generator Type = "GROUP UNIT" or "STATION SERVICE GROUP").

1.1.5.4 Settlement Algorithm

Hr DAM Margin Assurance ($) is calculated as:

Hr DAM Margin Assurance ($) =

∑ SCD DAM Margin Assurance ($) for all SCD-intervals in the given hour.

If Hr DAM Margin Assurance ($) < 0, then Hr DAM Margin Assurance ($) = 0

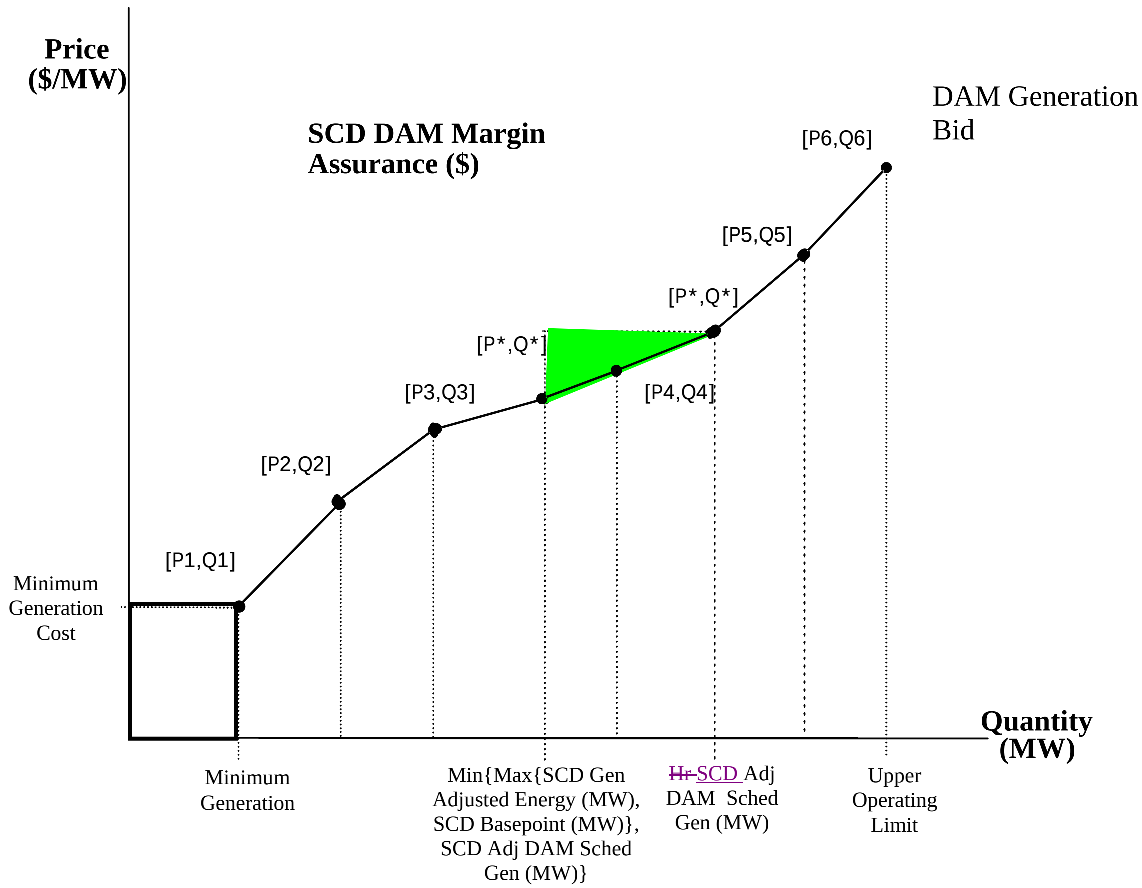
Where:

Prior to 08/29/2001 (Regulation Negative Control Error Date) OR (on or after 08/29/2001 AND the generator's SCD Gen Adjusted Energy (MW) > SCD Reg Negative Error (MW))

SCD DAM Margin Assurance ($) =

{SCD DAM MarginAssrc BalMkt Cost ($) - SCD DAM MarginAssrc Bid Cost ($)} * {SCD Interval Seconds ÷ 3,600 seconds}[3]

Otherwise, SCD DAM Margin Assurance ($) = 0.



The triangular area noted in green (above the Generation Bid) within the above graphical example represents the amount of DAM Margin Assurance ($) that a Market Participant would be paid corresponding to NYISO's out of merit dispatch of the given generator.

The area is calculated by subtracting SCD DAM MarginAssrc Bid Cost ($) from SCD DAM MarginAssrc BalMkt Cost ($). For further details, please see the following sections.

SCD DAM MarginAssrc BalMkt Cost ($) is calculated as:

SCD DAM MarginAssrc BalMkt Cost ($) =

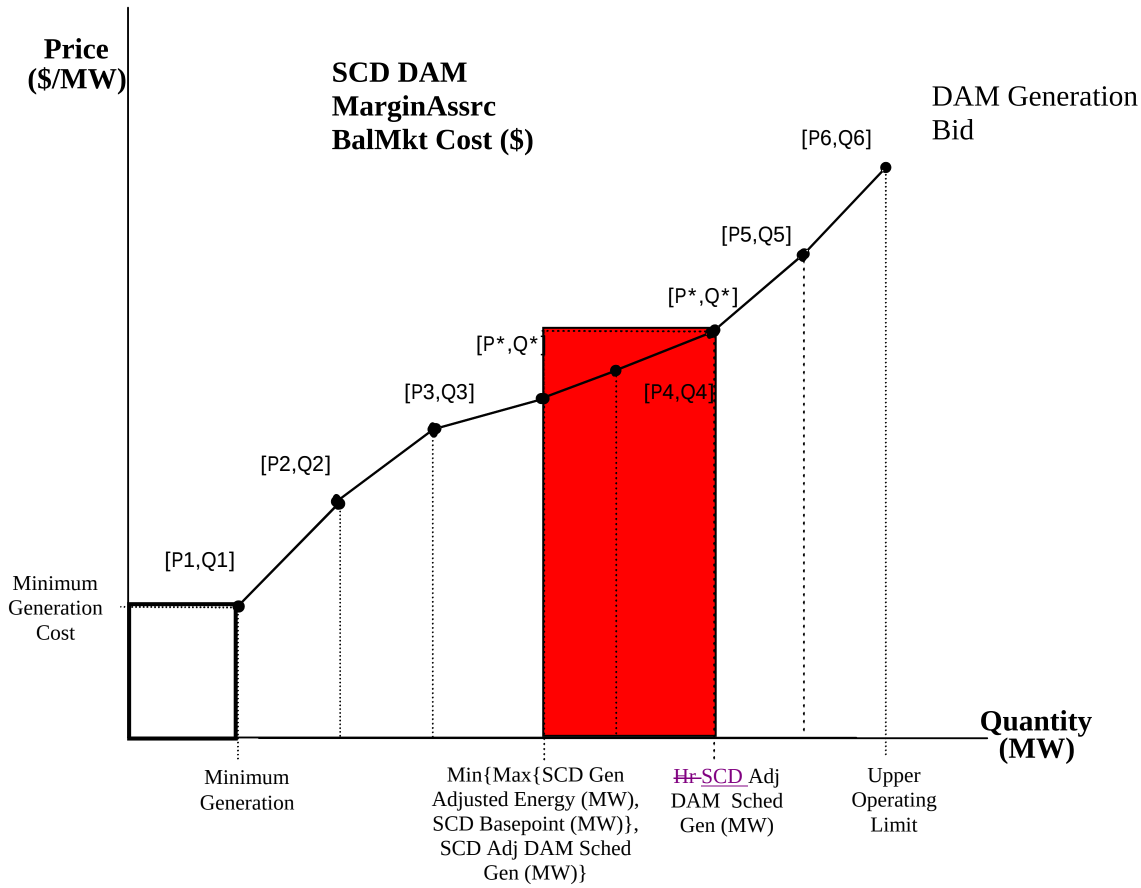
{SCD Adj DAM Sched Gen (MW) - Min{Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}, SCD Adj DAM Sched Gen (MW)}} * SCD RT Total Price :Gen ($/MW)

SCD RT Total Price :Gen ($/MW) =

[3] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)

See below section for more information on SCD Adj DAM Sched Gen (MW).



The rectangular area in red (above and below the Generation Bid) within the above graphical example represents the amount of balancing market charges that a Market Participant would incur for energy purchased in the NYISO Balancing Market corresponding to NYISO's out of merit dispatch of the given generator.

The area is calculated as the difference between the generator's SCD Adj DAM Sched Gen (MW) and the Min{Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}, SCD Adj DAM Sched Gen (MW)} multiplied by the SCD RT Total Price :Gen ($/MW) for energy purchased/sold in the NYISO Balancing Energy Market.

SCD DAM MarginAssrc Bid Cost ($) is calculated as:

SCD DAM MarginAssrc Bid Cost ($) is the sum of the incremental cost under the DAM Generation Bid for each dispatch segment from ~~SCD Adj DAM Sched Gen (MW) to~~ the Max{Min{Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}, SCD Adj DAM Sched Gen (MW)}, Hr DAM Gen Bid :Min Gen (MW)} to SCD Adj DAM Sched Gen (MW).

NOTE: If SCD DAM MarginAssrc Bid Cost ($) < 0, then SCD DAM MarginAssrc Bid Cost ($) = 0.

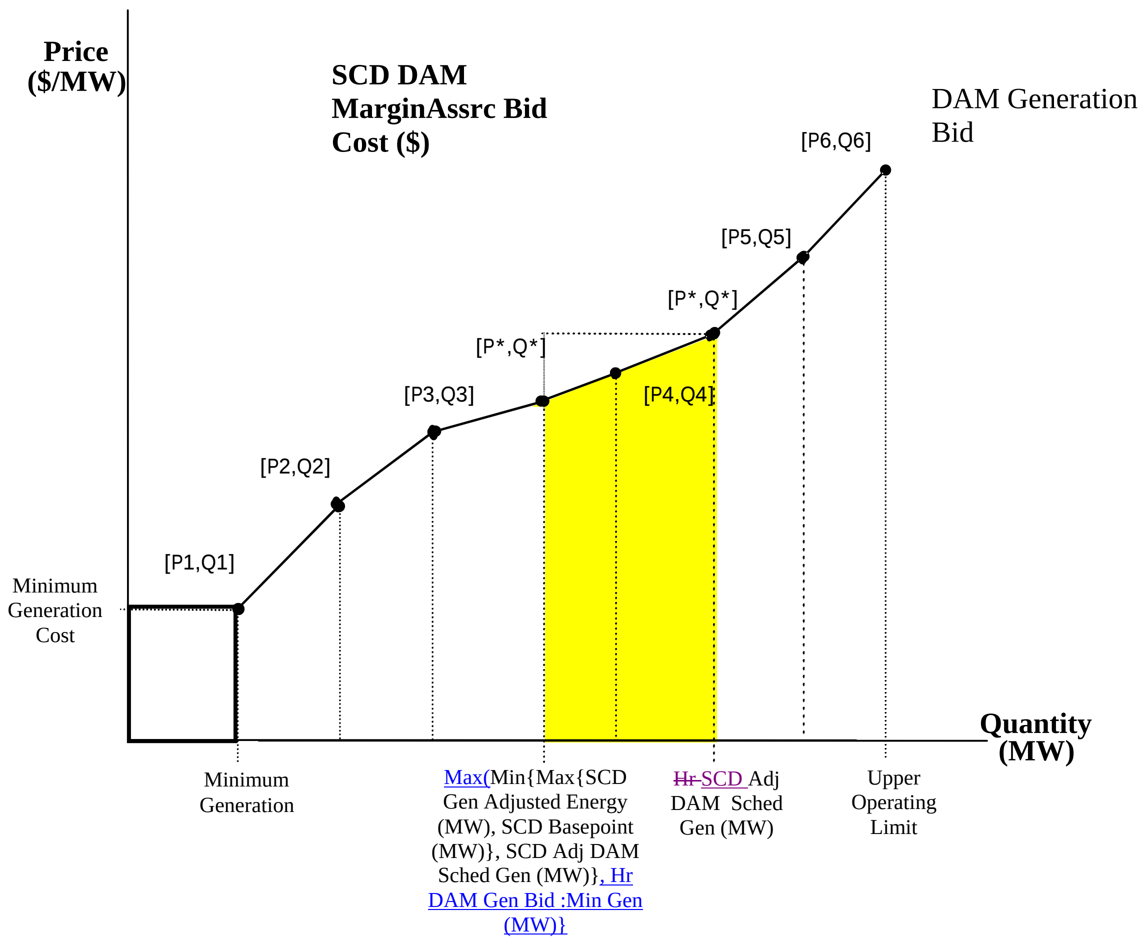
Please see Appendix A, Figure 1.3 for more information on how to determine the incremental cost ($) on a given Generation Bid corresponding to a specific upper and lower generation output level (MW).

*The corresponding Bid Prices (P*_Upper & P*_Lower) ($/MW) are calculated as:*

1. P*_Upper ($/MW) is the price on the generator's DAM Generation Bid corresponding to their SCD Adj DAM Sched Gen (MW) for the given generator, for the given interval, and
2. P*_Lower ($/MW) is the price on the generator's DAM Generation Bid corresponding to their Max{Min{Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}, SCD Adj DAM Sched Gen (MW)}, Hr DAM Gen Bid :Min Gen (MW)} for the given generator, for the given interval.

   Please see Appendix A, Figure 1.3 for more information on how to determine prices ($/MW) on a given Generation Bid corresponding to specific generation output levels (MW).

See below section for more information on SCD Adj DAM Sched Gen (MW).



The area in yellow (below the Generation Bid) within the above graphical example represents the amount of incremental cost that a Market Participant would save for not having produced the energy corresponding to NYISO's out of merit dispatch of the given generator.

The area is calculated by summing each individual dispatch segment's incremental cost ($) under the DAM Generation Bid between the two MW output levels, where the incremental cost under the DAM Generation Bid for a given dispatch segment can be calculated as discussed in Appendix A, Figure 1.3.

SCD Adj DAM Sched Gen (MW) is calculated as:

If Hr Out of Merit Type Desc is equal to "GENERTOR DERATE" (Hr Out of Merit Type ID = 28),

SCD Adj DAM Sched Gen (MW) =

Min[SCD Gen Upper Op Limit (MW) - {Hr HAM Sched 10Sync Avail (MW) + Hr HAM Sched 10NSync Avail (MW) + Hr HAM Sched 30Min Avail (MW)}, Hr DAM Sched Gen (MWh)]

Else

SCD Adj DAM Sched Gen (MW) = Hr DAM Sched Gen (MWh)

NOTE: The adjustment to the Hr DAM Sched Gen (MWh) is made in cases where a generator's SCD Gen Upper Op Limit (MW) is reduced enough that the generator's Operating Reserve Availability commitments cannot be fulfilled.

1.1.5.5 Additional Information

Hr DAM Margin Assurance :LRR ($) is calculated as:

If the generator is placed Out of Merit by NYISO for local reliability reasons (under the local reliability rules (LRR)): Hr Out of Merit Type Desc = OOM FOR TO LOCAL SECURITY (Hr Out of Merit Type ID = 2)

Hr DAM Margin Assurance :LRR ($) =

∑ SCD DAM Margin Assurance ($) for all SCD-intervals in the given hour.

If Hr DAM Margin Assurance :LRR ($) < 0, then Hr DAM Margin Assurance :LRR ($) = 0

Where:

Prior to 08/29/2001 (Regulation Negative Control Error Date) OR (on or after 08/29/2001 AND the generator's SCD Gen Adjusted Energy (MW) > SCD Reg Negative Error (MW))

SCD DAM Margin Assurance ($) =

{SCD DAM MarginAssrc BalMkt Cost ($) - SCD DAM MarginAssrc Bid Cost ($)} * {SCD Interval Seconds ÷ 3,600 seconds}[4]

Otherwise, SCD DAM Margin Assurance ($) = 0.

[4] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

NOTE: If the generator is placed Out of Merit by NYISO for local reliability reasons, Hr DAM Margin Assurance ($) is set to zero and vice versa.

When the generator is under/over-generating during the interval:

If the SCD Gen Adjusted Energy (MW) (adjusted metered generation) is below the SCD Basepoint (MW) (dispatch instruction) (under-generating), then the NYISO will only guarantee DAM margin (profit) up to the SCD Basepoint (MW) value (only the part the NYISO's scheduling is responsible for).

On the other hand, if a generator over-generates (i.e. above the SCD Basepoint (MW)), then the NYISO will only guarantee to the SCD Gen Adjusted Energy (MW) value since the difference between SCD Basepoint (MW) and SCD Gen Adjusted Energy (MW) would have already been accounted for in the real-time balancing market (again, only the part the NYISO's scheduling is responsible for).

The formula handling a generator that is under/over-generating in the above algorithm section is as follows:

Min{Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}, SCD Adj DAM Sched Gen (MW)}

NOTE: The formula is slightly different when calculating SCD DAM MarginAssrc Bid Cost ($) using Max(Min{Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}, SCD Adj DAM Sched Gen (MW)}, Hr DAM Gen Bid :Min Gen (MW)}

1.1.5.6 References

The applicability of Day-Ahead Margin Assurance Payments is described within Attachment J of the MST (Market Administration and Control Area Services Tariff).

1.1.6 Energy Limited Resource (ELR) DAM Margin Assurance

1.1.6.1 Description

The Energy Limited Resource (ELR) Day Ahead Market (DAM) Margin Assurance ($) settlement is intended to compensate Power Suppliers, with a generator classified as energy limited (ELRs), who offer that generator's capacity to the NYISO in the DAM but then are dispatched out of merit by NYISO below their DAM schedule in real-time. Therefore, this settlement guarantees an ELR generator's DAM margin (profit) is not reduced by balancing market energy settlements in Real-Time due to NYISO scheduling for reliability reasons.

An Energy Limited Resource (ELR) is defined as a generator that is unable to operate continuously on a daily basis due to design considerations, environmental restrictions on operations, cyclical requirements (such as the need to recharge or refill), or other non-economic reasons, but is able to operate for at least four consecutive hours each day.

This settlement can result from two different conditions: (1) generators moved out of merit by NYISO for reliability reasons, and (2) generators moved by a transmission owner for local reliability reasons (under the local reliability rules (LRR)). The settlement is the same in both cases. However, if the generator is out of merit for LRR, please refer to the section titled Day-Ahead Market (DAM) Margin Assurance - Local Reliability Rules (LRR). This section refers to only the first condition (for NYISO reliability reasons).

ELR DAM Margin Assurance ($) is determined as the generator's replacement costs minus its DAM energy revenues, DAM Energy Margin, and RT Energy Margin. A generator's replacement cost is the cost of the generator's DAM Scheduled Generation (MW) using the hourly time-weighted average

Real-Time market prices ($/MW). The DAM and RT Energy Margins ($) represent the generator's revenues in excess of its bid production costs in each respective market.

This settlement is a payment to the Power Supplier. It is determined at the daily level for each generator classified as an ELR dispatched below their DAM scheduled generation (MW) in real-time.

1.1.6.2 Required Data Elements

1.1.6.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr Out of Merit Type ID	Hourly Out of Merit Type ID is a number representing the reason for an out of economic merit dispatch for the given generator and hour.	Y
5220	Hr Out of Merit Type Desc	Hourly Out of Merit Type Description represents the reason for an out of economic merit dispatch for the given generator and hour.	Y
	Hr RT Energy Price :Gen ($/MW)	Hourly Real-Time Energy Price - Generator ($/MW) is a number representing the time-weighted hourly price of energy at the given demand response bus (LBMP energy component).	N
	Hr RT Loss Price :Gen ($/MW)	Hourly Real-Time Loss Price - Generator ($/MW) is a number representing the time-weighted hourly price of losses at the given demand response bus (LBMP loss component).	N
	Hr RT Cong Price :Gen ($/MW)	Hourly Real-Time Congestion Price - Generator ($/MW) is a number representing the time-weighted hourly price of congestion at the given demand response bus (LBMP congestion component).	N
	Hr DAM Energy Price :Gen ($/MW)	Hourly Day Ahead Market Energy Price - Generator ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component)	Y
	Hr DAM Loss Price :Gen ($/MW)	Hourly Day Ahead Market Loss Price - Generator ($/MW) is a number representing the price of losses at a generator bus (LBMP loss component)	Y
	Hr DAM Cong Price :Gen ($/MW)	Hourly Day Ahead Market Congestion Price - Generator ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component)	Y
	Hr SCD Basepoint (MW)	Hourly Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated as a time-weighted average of the approximately 5 minute time intervals communicated to support	Y

Bill Code	Title	Business Description	DSS Value
		generation dispatch.	
	Hr Gen Avg Actual Energy (MW)	Hourly Generator Average Actual Energy (MW) is a number representing average actual output of a generator over the hour. It is the average of the 6-second-level data coming from the NYISO SCADA system.	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MWh) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales)	Y
	Hr Total DAM Stlmnt :Gen ($)	Total Day Ahead Market Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's total Day Ahead Market energy settlement; sum of the DAM energy, loss, and congestion component settlements.	Y

1.1.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total RT Price :Gen ($/MW)	Hourly Real-Time Total Price - Generator ($/MW) is a number representing the time-weighted hourly total LBMP price at the given generator bus.	N
203	Hr DAM Total Price :Gen ($/MW)	Hourly Day Ahead Market Total Price - Generator ($/MW) is a number that represents the total DAM LBMP price at a generator bus.	Y
301	Day Total DAM Stlmnt :Gen ($)	Total Day Ahead Market Settlement - Generator ($) is a number representing the BAS-determined amount of a generator's total Day Ahead Market energy settlement; sum of the DAM energy, loss, and congestion component settlements.	Y
	Hr ELR MargAssrc Repl Cost ($)	Hourly Energy Limited Resource (ELR) Margin Assurance Replacement Cost ($) is a number representing the total cost of the ELR's DAM Scheduled Generation (MW) at the hourly average total real-time market price ($/MW).	N
	Day ELR MargAssrc Repl Cost ($)	Day Energy Limited Resource (ELR) Margin Assurance Replacement Cost ($) is a number representing the total cost of the ELR's DAM Scheduled Generation (MW) at the hourly average total real-time market price ($/MW).	N

	Hr DAM MargAssrc Bid Price ($/MW)	Hourly Day Ahead Market (DAM) Margin Assurance Bid Price ($/MW) is a number representing the price on the generator's Hour DAM Generation Bid corresponding to the generator's DAM Scheduled Generation (MW).	N
	Hr RT MargAssrc Bid Price ($/MW)	Hourly Real-Time Margin Assurance Bid Price ($/MW) is a number representing the price on the generator's Hour Ahead Market (HAM) Generation Bid corresponding to the generator's hourly average actual output (MW), determined from NYISO's PTS.	N
	Hr DAM MargAssrc Energy Margin ($)	Hourly Day Ahead Market (DAM) Margin Assurance Energy Margin ($) is a number representing the amount of net energy revenue margin (revenue above bid production costs) the generator earned in the Day Ahead Market (DAM) for the given hour.	N
	Hr RT MargAssrc Energy Margin ($)	Hourly Real-Time Margin Assurance Energy Margin ($) is a number representing the amount of net energy revenue margin (revenue above bid production costs) the generator earned in the real-time market for the given hour.	N
	Day DAM MargAssrc Energy Margin ($)	Day Day Ahead Market (DAM) Margin Assurance Energy Margin ($) is a number representing the amount of net energy revenue margin (revenue above bid production costs) the generator earned in the Day Ahead Market (DAM) for the given day.	N
	Day RT MargAssrc Energy Margin ($)	Day Real-Time Margin Assurance Energy Margin ($) is a number representing the amount of net energy revenue margin (revenue above bid production costs) the generator earned in the real-time market for the given day.	N

1.1.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
314	Day ELR DAM Margin Assurance ($)	Day Energy Limited Resource (ELR) Day Ahead Margin Assurance ($) is a number representing the DAM Margin Assurance settlement amount which is designed to ensure a generator dispatched as an energy limited resource in real-time by NYISO below the DAM commitment does not have its DAM margin eroded by additional balancing market energy charges; for the given generator for the given day.	N

1.1.6.3 Eligibility

Generators will receive a payment for ELR DAM Margin Assurance ($) if all of the following conditions exist:

- The generator is an energy limited resource, and is placed Out of Merit by NYISO.
    - Hr Out of Merit Type Desc = “ISO ENERGY LIMITED RES” (ID = 21)
- The generator’s actual output (MW) is less than its DAM schedule (MW).
    - Hr Gen Avg Actual Energy (MW) < Hr DAM Sched Gen (MWh)

1.1.6.4 Settlement Algorithm

If Day ELR MargAssrc Repl Cost ($) > Day RT MargAssrc Energy Margin ($), then

Day ELR DAM Margin Assurance ($) =

Max{Day ELR MargAssrc Repl Cost ($) - Day RT MargAssrc Energy Margin ($) - Day DAM MargAssrc Energy Margin ($) - Day Total DAM Stlmnt :Gen ($), 0}

Where:

Day ELR MargAssrc Repl Cost ($) is calculated as:

Day ELR MargAssrc Repl Cost ($) =

Sum of all hours for the given day of Hr ELR MargAssrc Repl Cost ($), where:

Hr ELR MargAssrc Repl Cost ($) =

[Hr DAM Sched Gen (MWh) * {Hr RT Energy Price :Gen ($/MW) + Hr RT Loss Price :Gen ($/MW) - Hr RT Cong Price :Gen ($/MW)}]

Day RT MargAssrc Energy Margin ($) is calculated as:

Day RT MargAssrc Energy Margin ($) =

Sum of all hours for the given day of Hr RT MargAssrc Energy Margin ($), where:

Hr RT MargAssrc Energy Margin ($) =

[{Hr Gen Avg Actual Energy (MW) * Hr Total RT Price :Gen ($/MW)} - {Hr Gen Avg Actual Energy (MW) * Hr RT MargAssrc Bid Price ($/MW)}]

Where Hr RT MargAssrc Bid Price ($/MW) is:

Hr RT MargAssrc Bid Price ($/MW) is the price on the generator’s HAM Generation Bid corresponding to their Hr Gen Avg Actual Energy (MW) for the given generator, for the given hour.

Please see Appendix A, Figure 1.1 for more information on how to determine the price ($/MW) on a given Generation Bid corresponding to a specific generation output level (MW).

Day DAM MargAssrc Energy Margin ($) is calculated as:

Day DAM MargAssrc Energy Margin ($) =

Sum of all hours for the given day of Hr DAM MargAssrc Energy Margin ($), where:

Hr DAM MargAssrc Energy Margin ($) =

[{Hr DAM Sched Gen (MWh) * Hr DAM Total Price :Gen ($/MW)} - {Hr DAM Sched Gen (MWh) * Hr DAM MargAssrc Bid Price ($/MW)}]

Where Hr DAM MargAssrc Bid Price ($/MW) is:

Hr DAM MargAssrc Bid Price ($/MW) is the price on the generator's DAM Generation Bid corresponding to their Hr DAM Sched Gen (MWh) for the given generator, for the given hour.

Please see Appendix A, Figure 1.1 for more information on how to determine the price ($/MW) on a given Generation Bid corresponding to a specific generation output level (MW).

Day Total DAM Stlmnt :Gen ($) is calculated as:

Day Total DAM Stlmnt :Gen ($) =

Sum of all hours for the given day of Hr Total DAM Stlmnt :Gen ($).

NOTE: For more information regarding the determination of Hr Total DAM Stlmnt :Gen ($), please see section 3.1.1 of this document.

1.1.6.5 Additional Information

Grouped Generator Scenarios:

Generators that are part of a Grouped Generator scenario have their actual output (MW) set equal to their time-weighted SCD Basepoint (MW) since actual output (MW) is not collected or stored at that level (a grouped generator data element), as follows:

Hr Gen Avg Actual Energy (MW) =

Sum of all SCD-intervals in the hour of: SCD Basepoint (MW) * {SCD Interval Seconds ÷ 3,600}

1.1.6.6 References

The applicability of Power Supplier Day Ahead Margin Assurance Payments for Energy Limited Resources is described within Article 4 (Section 4.18 C) of the MST (Market Administration and Control Area Services Tariff).

1.1.7 Ancillary Services

1.1.7.1 Regulation

1.1.7.1.1 DAM Regulation and Frequency Response Service Availability

1.1.7.1.1.1 Description

The Day Ahead Market (DAM) Regulation and Frequency Response Service Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as Regulation and Frequency Response Service to the NYISO in the DAM.

The purpose for Regulation & Frequency Response Service is to ensure sufficient capacity to balance supply with system demand during real time operation and to assist in maintaining scheduled Interconnection frequency at 60 hertz. Regulation and Frequency Response Service is accomplished by committing on-line generators whose outputs are increased or decreased, predominately through the use of Automatic Generation Control (AGC), as necessary to follow changes in system load. Generators are not obligated to provide Regulation and Frequency Response Service unless they have been offered to the market and scheduled by the NYISO to supply the service.

The DAM Regulation and Frequency Response Service Availability settlement is based upon the Regulation and Frequency Response Service capacity scheduled for the generator, the corresponding DAM Regulation and Frequency Response Service Market Clearing Price (MCP), and any required adjustment due to generator non-performance (see below). It is determined at the hourly-level for each generator scheduled to provide this service in the DAM.

This DAM Regulation and Frequency Response Service Availability settlement is reduced under certain conditions, and the reduction is calculated as follows:

- Prior to August 01, 2001: Availability payments are reduced for intervals when the scheduled generators were not available for AGC dispatch (i.e. off control).
- Beginning August 01, 2001: Availability payments are not necessarily reduced, as long as regulation performance is within pre-determined limits.

Power Suppliers offering their generators into NYISO's DAM Regulation and Frequency Response Service market must be capable of providing that regulation and frequency response energy adjustments in the given regulation interval (~6 seconds).

1.1.7.1.1.2 Required Data Elements

1.1.7.1.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
218	Hr DAM Reg Price ($/MW)	Hourly Day Ahead Market Regulation Price ($/MW) is a number representing the hourly market clearing price for the DAM regulation service being provided by generators in the NYISO control area.	Y
217	Hr DAM Sched Reg Avail (MWh)	Hourly Day Ahead Market Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Day Ahead Market for the given hour.	Y
	Hr HAM Sched Reg Avail (MWh)	Hourly Hour Ahead Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market for the given hour.	Y

	Hr # Seconds On Control	Hourly Number of Seconds On Control is a number representing the amount of time in seconds a generator providing regulation service is actually on regulation control for the given hour.	Y
	Hr # Seconds Operating Interval	Hourly Number of Seconds Operating Interval is a number representing the number of seconds in the given generator's operating interval for the given hour.	Y
	Hr Market Participation Threshold	Hourly Market Participation Threshold is a number representing an Hourly Performance Index value that must be maintained on an hourly basis to avoid forfeiture of availability payments for regulation service for the given hour (values are between 0 and 1).	Y
	Hr Payment Scaling Factor	Hourly Payment Scaling Factor is a number representing the value of service differences among regulation service providers with performance at or above the Hourly Market Participation Threshold (values are between 0 and the Market Participant Threshold).	Y
	Hr Performance Index	Hourly Performance Index is a number representing a measurement of regulation performance as calculated by the NYISO Performance Tracking System (values are between 0 and 1).	Y

1.1.7.1.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
216	Hr Resource Availability Index	Hourly Resource Availability Index is a number representing a measurement of regulation performance as calculated by the NYISO using the number of seconds the generator was on control for the given hour (values are between 0 and 1).	Y

1.1.7.1.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM Reg Avail Stlmnt ($)	Hourly Day Ahead Market Regulation Availability Settlement ($) is a number representing the BAS-determined DAM regulation settlement for the generator for the hour.	Y

1.1.7.1.1.3 Eligibility

Generators scheduled in the NYISO Day Ahead Market (DAM) Regulation and Frequency Response Service market are eligible to receive the DAM Regulation and Frequency Response Service Availability settlement.

Hr DAM Sched Reg Avail (MWh) > 0

1.1.7.1.1.4 Settlement Algorithm

Hr DAM Reg Avail Stlmnt ($) is calculated as:

Prior to the date when changes were made to the determination of the performance adjustment (08/01/2001):

If Hr HAM Sched Reg Avail (MWh) <> 0

Hr DAM Reg Avail Stlmnt ($) =

Hr DAM Reg Price ($/MW) * Hr DAM Sched Reg Avail (MWh) * Hr Resource Availability Index

Where:

Hr Resource Availability Index = {3,600 Seconds - Hr # Seconds Operating Interval + Hr # Seconds On Control} ÷ 3,600 Seconds

Else

Hr DAM Reg Avail Stlmnt ($) =

Hr DAM Reg Price ($/MW) * Hr DAM Sched Reg Avail (MWh)

On or After this date (08/01/2001):

If Hr HAM Sched Reg Avail (MWh) <> 0

If the generator's performance was within its acceptable performance threshold level (Hr Performance Index >= Hr Market Participation Threshold), or if the Hr Payment Scaling Factor <> 1, then:

Hr DAM Reg Avail Stlmnt ($) =

Hr DAM Reg Price ($/MW) * Hr DAM Sched Reg Avail (MWh) *

{(Hr Performance Index - Hr Payment Scaling Factor) ÷ (1 - Hr Payment Scaling Factor)}

Else (generator was outside performance threshold level, or Hr Payment Scaling Factor = 1):

Hr DAM Reg Avail Stlmnt ($) = 0

Else

Hr DAM Reg Avail Stlmnt ($) =

Hr DAM Reg Price ($/MW) * Hr DAM Sched Reg Avail (MWh)

NOTES:

- The generator's performance level cannot exceed 1.0. Therefore:

  If Hr Performance Index > 1.0, then Hr Performance Index = 1.0.

1.1.7.1.1.5 Additional Information

None

1.1.7.1.1.6 References

The scheduling and dispatch of Regulation Service are described in detail in the NYISO Ancillary Services Manual at Chapter 4: Regulation & Frequency Response Service.

The applicability of Day Ahead Regulation and Frequency Response Service Availability Payments is described within Schedule 3 of the MST (Market Administration and Control Area Services Tariff), and Schedule 3 of the OATT (Open Access Transmission Tariff).

1.1.7.1.2 Supplemental Regulation and Frequency Response Service Availability

1.1.7.1.2.1 Description

The Supplemental Regulation and Frequency Response Service Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as Regulation and Frequency Response Service to the NYISO via the Hour Ahead Market (HAM).

The purpose for Regulation & Frequency Response Service is to ensure sufficient capacity to balance supply with system demand during real time operation and to assist in maintaining scheduled Interconnection frequency at 60 hertz. Regulation and Frequency Response Service is accomplished by committing on-line generators whose outputs are increased or decreased, predominately through the use of Automatic Generation Control (AGC), as necessary to follow changes in system load. Generators are not obligated to provide Regulation and Frequency Response Service unless they have been offered to the market and scheduled by the NYISO to supply the service.

The Supplemental Regulation and Frequency Response Service Availability settlement is based upon the Regulation and Frequency Response Service capacity scheduled for the generator, the corresponding HAM Regulation and Frequency Response Service Market Clearing Price (MCP), and any required adjustment due to generator non-performance (see below). It is determined at the hourly-level for each generator scheduled to provide this service in the supplemental regulation market.

This Supplemental Regulation and Frequency Response Service Availability settlement is reduced under certain conditions, and the reduction is calculated as follows:

- Prior to August 01, 2001: Availability payments are reduced for intervals when the scheduled generators were not available for AGC dispatch (i.e. off control).
- Beginning August 01, 2001: Availability payments are not necessarily reduced, as long as regulation performance is within pre-determined limits.

Power Suppliers offering their generators into NYISO's Supplemental Regulation and Frequency Response Service market must be capable of providing that regulation and frequency response energy adjustments in the given regulation interval (~6 seconds).

1.1.7.1.2.2 Required Data Elements

1.1.7.1.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
220	Hr HAM Reg Price ($/MW)	Hourly Hour Ahead Market Regulation Price ($/MW) is a number representing the hourly market clearing price for the HAM regulation service being provided by generators in the NYISO control area.	Y
217	Hr DAM Sched Reg Avail (MWh)	Hourly Day Ahead Market Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Day Ahead Market for the given hour.	Y
	Hr HAM Sched Reg Avail (MWh)	Hourly Hour Ahead Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market for the given hour.	Y
	Hr # Seconds On Control	Hourly Number of Seconds On Control is a number representing the amount of time in seconds a generator providing regulation service is actually on regulation control for the given hour.	Y
	Hr # Seconds Operating Interval	Hourly Number of Seconds Operating Interval is a number representing the number of seconds in the given generator's operating interval for the given hour.	Y
	Hr Market Participation Threshold	Hourly Market Participation Threshold is a number representing an Hourly Performance Index value that must be maintained on an hourly basis to avoid forfeiture of availability payments for regulation service for the given hour (values are between 0 and 1).	Y
	Hr Payment Scaling Factor	Hourly Payment Scaling Factor is a number representing the value of service differences among regulation service providers with performance at or above the Hourly Market Participation Threshold (values are between 0 and the Market Participant Threshold).	Y
	Hr Performance Index	Hourly Performance Index is a number representing a measurement of regulation performance as calculated by the NYISO Performance Tracking System (values are between 0 and 1).	Y

1.1.7.1.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

219	Hr Sup Sched Reg Avail (MWh)	Hourly Supplemental Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market net of the amount scheduled in the Day Ahead Market, or zero of DAM schedule > HAM schedule), for the given hour.	Y
216	Hr Resource Availability Index	Hourly Resource Availability Index is a number representing a measurement of regulation performance as calculated by the NYISO using the number of seconds the generator was on control for the given hour (values are between 0 and 1).	Y

1.1.7.1.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Sup Reg Avail Stlmnt ($)	Hourly Supplemental Regulation Availability Settlement ($) is a number representing the BAS-determined supplemental regulation settlement for the generator for the hour.	Y

1.1.7.1.2.3 Eligibility

Generators scheduled in the NYISO Hour Ahead Market (HAM) Regulation and Frequency Response Service market in excess of their Day Ahead Market (DAM) Regulation and Frequency Response Service schedule are eligible to receive the Supplemental Regulation and Frequency Response Service Availability settlement.

Hr Sup Sched Reg Avail (MWh) > 0

1.1.7.1.2.4 Settlement Algorithm

Hr Sup Reg Avail Stlmnt ($) is calculated as:

Prior to the date when changes were made to the determination of the performance adjustment (08/01/2001):

Hr Sup Reg Avail Stlmnt ($) =

Hr HAM Reg Price ($/MW) * Hr Sup Sched Reg Avail (MWh) * Hr Resource Availability Index

Where:

Hr Resource Availability Index = {3,600 Seconds - Hr # Seconds Operating Interval + Hr # Seconds On Control} ÷ 3,600 Seconds

On or After this date (08/01/2001):

If the generator's performance was within its acceptable performance threshold level (Hr Performance Index >= Hr Market Participation Threshold), or if the Hr Payment Scaling Factor <> 1, then:

Hr Sup Reg Avail Stlmnt ($) =

Hr HAM Reg Price ($/MW) * Hr Sup Sched Reg Avail (MWh) *

{(Hr Performance Index - Hr Payment Scaling Factor) ÷ (1 - Hr Payment Scaling Factor)}

Else (generator was outside performance threshold level, or Hr Payment Scaling Factor = 1):

Hr Sup Reg Avail Stlmnt ($) = 0

Where Hr Sup Sched Reg Avail (MWh) is calculated as:

Hr Sup Sched Reg Avail (MWh) = Max{Hr HAM Sched Reg Avail (MWh) - Hr DAM Sched Reg Avail (MWh), 0}

NOTES:

- The generator's performance level cannot exceed 1.0. Therefore:

  If Hr Performance Index > 1.0, then Hr Performance Index = 1.0.

1.1.7.1.2.5 Additional Information

None

1.1.7.1.2.6 References

The scheduling and dispatch of Regulation Service are described in detail in the NYISO Ancillary Services Manual at Chapter 4: Regulation & Frequency Response Service.

The applicability of Supplemental Regulation and Frequency Response Service Availability Payments is described within Schedule 3 of the MST (Market Administration and Control Area Services Tariff), and Schedule 3 of the OATT (Open Access Transmission Tariff).

1.1.7.1.3 Regulation and Frequency Response Replacement Cost Settlement

1.1.7.1.3.1 Description

The Regulation and Frequency Response Service Replacement Cost settlement ($) is intended to recover NYISO's costs to replace DAM Regulation and Frequency Response Service Availability due to Power Suppliers who offer their generator's capacity as Regulation and Frequency Response Service to the NYISO in the DAM, but then are not able (un-available) to provide the service. The replacement capacity is purchased by NYISO in Hour Ahead Market (HAM) as Supplemental Reserve Service.

The purpose for Regulation & Frequency Response Service is to ensure sufficient capacity to balance supply with system demand during real time operation and to assist in maintaining scheduled Interconnection frequency at 60 hertz. Regulation and Frequency Response Service is accomplished by committing on-line generators whose outputs are increased or decreased, predominately through the use of Automatic Generation Control (AGC), as necessary to follow changes in system load. Generators are not obligated to provide Regulation and Frequency Response Service unless they have been offered to the market and scheduled by the NYISO to supply the service.

The Regulation and Frequency Response Service Replacement Cost settlement is based upon NYISO's costs to procure the Supplemental Regulation and Frequency Response Service. It is allocated to generators based on the ratio of the generator's DAM Replacement (MWh) to the total NYISO DAM Replacement (MWh).

It is determined at the hourly-level for each generator scheduled to provide DAM Regulation and Frequency Response Service.

1.1.7.1.3.2 Required Data Elements

1.1.7.1.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
218	Hr DAM Reg Price ($/MW)	Hourly Day Ahead Market Regulation Price ($/MW) is a number representing the hourly market clearing price for the DAM regulation service being provided by generators in the NYISO control area.	Y
220	Hr HAM Reg Price ($/MW)	Hourly Hour Ahead Market Regulation Price ($/MW) is a number representing the hourly market clearing price for the HAM regulation service being provided by generators in the NYISO control area.	Y
217	Hr DAM Sched Reg Avail (MWh)	Hourly Day Ahead Market Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Day Ahead Market for the given hour.	Y
	Hr HAM Sched Reg Avail (MWh)	Hourly Hour Ahead Market Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market for the given hour.	Y
	Hr # Seconds On Control	Hourly Number of Seconds On Control is a number representing the amount of time in seconds a generator providing regulation service is actually on regulation control for the given hour.	Y
	Hr # Seconds Operating Interval	Hourly Number of Seconds Operating Interval is a number representing the number of seconds in the given generator's operating interval for the given hour.	Y

1.1.7.1.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

219	Hr Sup Sched Reg Avail (MWh)	Hourly Supplemental Scheduled Regulation Availability (MWh) is a number representing the amount of regulation availability scheduled by the NYISO for the given generator in the Hour Ahead Market net of the amount scheduled in the Day Ahead Market, or zero of DAM schedule > HAM schedule), for the given hour	Y
	Hr DAM Reg Replacement (MW)	Hourly Day Ahead Market Regulation Replacement (MW) is a number representing the amount of regulation availability that had to be replaced by NYISO for the given generator in the Day Ahead Market for the given hour.	Y
	Hr Sup Reg Replacement (MWh)	Hourly Supplemental Regulation Replacement (MWh) is a number representing the amount of regulation availability that had to be replaced by NYISO for the given generator in the Hour Ahead Market for the given hour.	Y
	Hr Tot NYISO DAM Reg Repl (MWh)	Hourly Total NYISO Day Ahead Market Regulation Replacement (MWh) is a number representing the NYISO-wide total amount of regulation availability that had to be replaced by NYISO in the Day Ahead Market for the given hour.	Y
	Hr Tot NYISO SUP Reg Repl (MWh)	Hourly Total NYISO Supplemental Regulation Replacement (MWh) is a number representing the NYISO-wide total amount of regulation availability that had to be replaced by NYISO in the Hour Ahead Market for the given hour.	Y
216	Hr Resource Availability Index	Hourly Resource Availability Index is a number representing a measurement of regulation performance as calculated by the NYISO using the number of seconds the generator was on control for the given hour (values are between 0 and 1).	Y
	Hr Resource Un-Available Index	Hourly Resource Un-Available Index is a number representing a measurement of regulation non-performance as calculated by the NYISO using the total number of seconds in the hour (3600) minus the number of seconds the generator was on control for the given hour (values are between 0 and 1).	Y
	Hr NYISO Reg Replacement Cost Cap ($)	Hourly NYISO Regulation Replacement Cost Cap ($) is a number representing the maximum amount of regulation replacement costs that can be charged to all NYISO generators (in total) in the Regulation Replacement settlements for the given hour; based on the total amount of supplemental regulation procured by NYISO.	Y
	Hr Tot NYISO Reg Replacement Cost ($)	Hourly Total NYISO Regulation Replacement Cost ($) is a number representing the total amount of NYISO regulation replacement costs to be allocated to generators for the given hour.	Y

1.1.7.1.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
221	Hr Reg Replacement Cost ($)	Hourly Regulation Replacement Cost ($) is a number representing the amount of NYISO total regulation replacement costs allocated to the given generator for the given hour.	Y

1.1.7.1.3.3 Eligibility

Generators scheduled in the NYISO Day Ahead Market (DAM) Regulation and Frequency Response Service market could be charged the DAM Regulation and Frequency Response Service Replacement Cost settlement if the generator was unavailable during the given interval.

- Hr DAM Sched Reg Avail (MWh) > 0
- Hr Resource Un-Available Index <> 0

1.1.7.1.3.4 Algorithm

Hr Reg Replacement Cost ($) is calculated as:

Hr Reg Replacement Cost ($) =

Max[Hr Tot NYISO Reg Replacement Cost ($) * {Hr DAM Reg Replacement (MWh) ÷ Hr Tot NYISO DAM Reg Repl (MWh)}, 0]

Where Hr Tot NYISO DAM Reg Repl (MWh) is the sum of all generator's Hr DAM Reg Replacement (MWh) in the given hour.

Hr Tot NYISO Reg Replacement Cost ($) is calculated as:

Hr Tot NYISO Reg Replacement Cost ($) =

Hr Tot NYISO DAM Reg Repl (MWh) * {Hr HAM Reg Price ($/MW) - Hr DAM Reg Price ($/MW)}

The Total NYISO Regulation Replacement Cost is capped at NYISO's cost to procure Supplemental Regulation Service (MWh) in the Hour Ahead Market, as follows:

If Hr Tot NYISO Reg Replacement Cost ($) > Hr NYISO Reg Replacement Cost Cap ($):

Hr Tot NYISO Reg Replacement Cost ($) = Hr NYISO Reg Replacement Cost Cap ($)

Where Hr NYISO Reg Replacement Cost Cap ($) is calculated as:

Hr NYISO Reg Replacement Cost Cap ($) =

Hr Tot NYISO SUP Reg Repl (MWh) * {Hr HAM Reg Price ($/MW) - Hr DAM Reg Price ($/MW)}

Where Hr Tot NYISO SUP Reg Repl (MWh) is the sum of all generator's Hr Sup Reg Replacement (MWh) in the given hour.

NOTES:

- If Hr Tot NYISO Reg Replacement Cost ($) = 0, then Hr Tot NYISO Reg Replacement Cost ($) = 1
- If Hr Tot NYISO DAM Reg Repl (MWh) = 0, then Hr Tot NYISO DAM Reg Repl (MWh) = 1
- ~~If Hr Reg Replacement Cost ($) < 0, then Hr Reg Replacement Cost ($) = 0.~~

Hr DAM Reg Replacement (MWh) is calculated as:

Hr DAM Reg Replacement (MWh) =

Hr DAM Sched Reg Avail (MWh) * Hr Resource Un-Available Index

Where:

Hr Resource Un-Available Index = {1 - Hr Resource Availability Index}

And:

Hr Resource Availability Index = {3,600 - Hr # Seconds Operating Interval + Hr # Seconds On Control} ÷ 3,600

NOTE:

- A Generator will not be considered off-control during the hour if NYISO schedules the generator as off-control during the hour during the Hour Ahead Market (HAM).

If Hr HAM Sched Reg Avail (MWh) = 0,

Hr Resource Availability Index = 1.0

Hr Sup Reg Replacement (MWh) is calculated as:

Hr Sup Reg Replacement (MWh) =

Hr Sup Sched Reg Avail (MWh) * Hr Resource Availability Index

Where:

Hr Resource Availability Index = {3,600 - Hr # Seconds Operating Interval + Hr # Seconds On Control} ÷ 3,600

And Hr Sup Sched Reg Avail (MWh) is calculated as:

Hr Sup Sched Reg Avail (MWh) =

Max{Hr HAM Sched Reg Avail (MWh) - Hr DAM Sched Reg Avail (MWh), 0}

1.1.7.1.3.5 Additional Information

None

1.1.7.1.3.6 References

The applicability of Regulation and Frequency Response Replacement Costs is described within Schedule 3 of the MST (Market Administration and Control Area Services Tariff), and Schedule 3 of the OATT (Open Access Transmission Tariff).

1.1.7.1.4 Under-Generation Penalty

1.1.7.1.4.1 Description

The Under-Generation Penalty settlement ($) is intended to penalize Power Supplier generators causing regulation burden due to under-generating below their SCD Basepoint (MW) outside of acceptable tolerance levels. This penalty is applicable to non-regulating generators only.

In the above scenario, Power Suppliers who offer their generator's capacity as Day Ahead Market (DAM) and/or Supplemental Regulation and Frequency Response Service, are scheduled and dispatched by NYISO, to follow their Automatic Generation Control (AGC) dispatch basepoints in real-time to compensate for under-generating generators.

The purpose for Regulation & Frequency Response Service is to ensure sufficient capacity to balance supply with system demand during real time operation and to assist in maintaining scheduled Interconnection frequency at 60 hertz. Regulation and Frequency Response Service is accomplished by committing on-line generators whose outputs are increased or decreased, predominately through the use of Automatic Generation Control (AGC), as necessary to follow changes in system load. Generators are not obligated to provide Regulation and Frequency Response Service unless they have been offered to the market and scheduled by the NYISO to supply the service.

On-dispatch, non-regulating and off-dispatch, non-regulating generators that persistently under-generate shall be subject to the penalty. The limit below which the generator is subject to penalty shall include a tolerance and a time delay of approximately 3 SCD-intervals to give the generator a tolerance band to respond to changing prices. Generators that are Out of Merit in order to provide Voltage Support Service, those that are PURPA classified, or Gilboa when pumping during the interval are not subject to the penalty. Generators that persistently over-generate may be subject to a regulation penalty in the future.

The Under-Generation Penalty settlement is based upon the amount of energy the generator deviates (below acceptable tolerance levels) from its SCD basepoints in real-time. The penalty amount is calculated as the generator's energy deviation (MW) multiplied against the corresponding Hour Ahead Market (HAM) price for regulation service (or against the DAM price if the HAM price does not exist) in the given hour.

The Under-Generation Penalty settlement is determined at the SCD-level for each generator under-generating below their SCD Basepoint outside of acceptable tolerance levels.

1.1.7.1.4.2 Required Data Elements

1.1.7.1.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
218	Hr DAM Reg Price ($/MW)	Hourly Day Ahead Market Regulation Price ($/MW) is a number representing the hourly market clearing price for the DAM regulation service being provided by generators in the NYISO control area.	Y
220	Hr HAM Reg Price ($/MW)	Hourly Hour Ahead Market Regulation Price ($/MW) is a number representing the hourly market clearing price for the HAM regulation service being provided by generators in the NYISO control area.	Y
	SCD Basepoint (MW)	Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated over approximately 5 minute time intervals communicated to support generation dispatch	Y
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y
	SCD Reg Negative Error (MW)	SCD Regulation Negative Error (MW) is a number representing the average amount of energy the given non-regulating generator produced short of its SCD Basepoint (below acceptable tolerance levels) for the given SCD-interval.	Y
	SCD Reg Positive Error (MW)	SCD Regulation Positive Error (MW) is a number representing the average amount of energy the given non-regulating generator produced in excess of its SCD Basepoint (above acceptable tolerance levels) for the given SCD-interval.	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y
	SCD In Service Ind	In Service Indicator is a character representing whether or not the generator is in service (physically connected and providing energy onto the NYISO electrical grid)	Y
5260	SCD On Control Ind	On Control Indicator is a character representing whether or not the generator is on NYISO regulation control	Y

5200	Hr Out of Merit Flag	Hourly Out of Merit Flag is a character representing whether or not the given generator was dispatched out of economic merit order during the hour.	Y
	SCD PURPA Units Class Type	SCD PURPA Class Type is a character representing the class of the PURPA Generator (Class 1 or Class 2) during the given SCD-interval.	Y
	SCD Reserve Pickup Ind	SCD Reserve Pick Up Indicator is a character which indicates whether the SCD interval was initiated as a reserve pickup.	Y
	Hr VSS Flag	Hourly Voltage Support Service Flag is a character representing whether or not the unit is Out of Merit in order to provide voltage support service during the hour (values are Y or N).	Y
	Hr Max Gen Flag	Hourly Maximum Generation Flag is a character representing whether or not the given generator is operating at its maximum output level for the given hour (values are Y or N).	Y

1.1.7.1.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD Reg Energy Deviation (MW)	SCD Regulation Energy Deviation (MW) is a number representing the average amount of energy the given non-regulating generator deviated from its expected level of output when following SCD basepoints in real-time, for the given SCD-interval.	N

1.1.7.1.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Reg Penalty ($)	SCD Regulation Penalty ($) is a number representing the amount of the generator's Regulation Penalty settlement, charged due to a generator's regulation non-performance, for the given SCD-interval.	Y

1.1.7.1.4.3 Eligibility

Generators are subject to receive a charge for Under-Generation Penalty ($) if all of the following conditions exist:

- If the generator is in service but not on-control (SCD In Service Ind = “Y” or “R”~~= Y/R~~ & SCD On Control Ind <> “Y”), or the generator is not in service and not on control but is producing at least 5MW of output energy (SCD In Service Ind <> “Y” or “R”~~= N~~ & SCD On Control Ind <> “Y” & SCD Gen Adjusted Energy (MW) > 5 MW).
- The generator is dispatched by NYISO in the SCD-interval (SCD Basepoint (MW) > 0).

- The generator is producing energy in the SCD-interval (SCD Gen Adjusted Energy (MW) > 0).
- The generator is not Out of Merit in order to provide Voltage Support Service during the SCD-interval (Hr Out of Merit Flag <> “Y” & Hr VSS Flag <> “Y”).
- The generator is not a PURPA generator (SCD PURPA Units Class Type is not Class 1 or 2).
- The generator is not a Gilboa generator pumping during the SCD-interval (SCD Gen Adjusted Energy (MW) < 0).

1.1.7.1.4.4 Settlement Algorithm

SCD Reg Penalty ($) is calculated as:

If Hr HAM Reg Price ($/MW) >0 (use HAM Regulation Prices):

SCD Reg Penalty ($) =

SCD Reg Energy Deviation (MW) * Hr HAM Reg Price ($/MW) * {SCD Interval Seconds ÷3,600}

Else (HAM Regulation Prices do not exist, use DAM Regulation Prices):

SCD Reg Penalty ($) =

SCD Reg Energy Deviation (MW) * Hr DAM Reg Price ($/MW) * {SCD Interval Seconds ÷3,600}

If SCD Reg Penalty ($) < 0, then

SCD Reg Penalty ($) = 0

Where SCD Reg Energy Deviation (MW) is calculated as:

Effective 10/01/2001, NYISO changed how it determines the amount of energy deviation (MW). After this date, SCD Reg Energy Deviation (MW) is calculated as:

SCD Reg Energy Deviation (MW) = SCD Reg Negative Error (MW)

And prior to this date as follows:

If Hr Max Gen Flag = Y & SCD Reserve Pickup Ind = Y

SCD Reg Energy Deviation (MW) = Abs{SCD Reg Negative Error (MW)}

Else

SCD Reg Energy Deviation (MW) = Abs{SCD Reg Negative Error (MW)} + Abs{SCD Reg Positive Error (MW)}

1.1.7.1.4.5 Additional Information

None

1.1.7.1.4.6 References

The scheduling and dispatch of Regulation Service are described in detail in the NYISO Ancillary Services Manual at Chapter 4: Regulation & Frequency Response Service.

The applicability of Regulation and Frequency Response Penalty is described within Schedule 3 of the MST (Market Administration and Control Area Services Tariff), and Schedule 3 of the OATT (Open Access Transmission Tariff).

1.1.7.2 Voltage Support Services

1.1.7.2.1 Voltage Support Service Payment

1.1.7.2.1.1 Description

The Voltage Support Service (VSS) settlement ($) is intended to compensate Power Suppliers who offer their generator's capacity as Voltage Support Service to the NYISO.

The purpose for Voltage Support Service is to ensure sufficient capacity to maintain desired voltage levels on the New York Control Area (NYCA) transmission/distribution grid during real time operation. Voltage Support Service is accomplished through the use of on-line generators whose outputs are increased/ decreased to produce/absorb reactive energy, including the use of Automatic Voltage Response (AVR), as necessary to maintain desired voltage levels.

The Voltage Support Service Payment settlement is based upon the annually-determined Voltage Support Service Rate ($) for the generator, divided by the number of days in the year, multiplied times a ratio of the amount of time during the hour the generator was considered to be providing VSS. It is determined at the hourly-level for each generator selected to provide Voltage Support Service.

1.1.7.2.1.2 Required Data Elements

1.1.7.2.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Capability Period	Capability Period represents the capability period that the day falls in (either Winter or Summer)	Y
	Hr Gen Contr Ins Cap :Summer (MW)	Hourly Generator Contracted Summer Installed Capacity (MW) is a number representing the amount of installed capacity effective for the summer capacity period for the given generator.	Y
	Hr Gen Contr Ins Cap :Winter (MW)	Hourly Generator Contracted Winter Installed Capacity (MW) is a number representing the amount of installed capacity effective for the winter capacity period for the given generator.	Y
	Gen Contract VSS (MVAR)	Generator Contract Voltage Support Service (MVAR) is the amount of voltage support service a generator has been contracted by NYISO to	Y

Bill Code	Title	Business Description	DSS Value
		provide.	
	Gen Tested VSS (MVAR)	Generator Tested Voltage Support Service (MVAR) is the amount of voltage support service a generator has proven via required tests to be capable of providing to the NYISO.	Y
	Gen Type Desc	Generator Type Description represents the name of the type of Generator	Y
5200	Hr Out of Merit Flag	Hourly Out of Merit Flag is a character representing whether or not the given generator was dispatched out of economic merit order during the hour.	Y
	Hr # Seconds In Service	Hourly Number of Seconds In Service is a number representing the amount of time in seconds a generator is actually in service for the given hour.	Y
	Hr # Seconds On AVR	Hourly Number of Seconds On Automatic Voltage Response is a number representing the amount of time in seconds a generator providing voltage support service is actually on automatic voltage response for the given hour.	Y
	Hr # Seconds Operating Interval	Hourly Number of Seconds Operating Interval is a number representing the number of seconds in the given generator's operating interval for the given hour.	Y
	Yr VSS Rate ($)	Annual Voltage Support Service Rate ($) is a number representing the amount determined by NYISO annually to be paid to generators providing voltage support services for a given year.	N
	# Hrs in Month	Number of Hours in Month is a number representing the number of hours in the given month (values are 672-744).	Y

1.1.7.2.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr VSS Rate ($)	Hourly Voltage Support Service Rate ($) is a number representing the amount determined by NYISO annually to be paid to generators providing voltage support services for a given hour.	Y
	Hr VSS In Service	Hourly Voltage Support Service In Service is a number representing a ratio of the amount of time during the hour a generator is considered to have provided voltage support service.	N

1.1.7.2.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
214	Hr VSS Stlmnt ($)	Hourly Voltage Support Service Settlement ($) is a number representing the payment to a generator providing voltage support services for the given hour.	Y

1.1.7.2.1.3 Eligibility

Generators will receive a payment for Voltage Support Service ($) if all of the following conditions exist:

- The generator is capable of providing Voltage Support Service.
- The generator is selected by NYISO to provide Voltage Support Service.

1.1.7.2.1.4 Settlement Algorithm

Hr VSS Stlmnt ($) is calculated as:

Hr VSS Stlmnt ($) = Hr VSS Rate ($) * Hr VSS In Service

NOTE: Non-Utility Generators and PURPA Classified Generators (Gen Type Desc = “NON-UTILTY GENERATOR” and “PURPA GENERATOR”) are settled slightly differently than other generators, as follows:

If Gen Contract VSS (MVAR) < Gen Tested VSS (MVAR)

Hr VSS Stlmnt ($) = Gen Contract VSS (MVAR) * Hr VSS Rate ($) * Hr VSS In Service

Else

Hr VSS Stlmnt ($) = Gen Tested VSS (MVAR) * Hr VSS Rate ($) * Hr VSS In Service

Where Hr VSS Rate ($) is calculated as:

Hr VSS Rate ($) = Yr VSS Rate ($) ÷ {12 * # Hrs in Month}

And Hr VSS In Service is calculated as:

If {Capability Period = “SUMMER” and Hr Gen Contr Ins Cap :Summer (MW) > 0}

OR {Capability Period = “WINTER” and Hr Gen Contr Ins Cap :Winter (MW) > 0}

OR Hr Out of Merit Flag = ‘Y”

Hr VSS In Service = 1.0

Else

If Hr # Seconds In Service <= Hr # Seconds On AVR[5]

Hr VSS In Service = {3,600 - Hr # Seconds Operating Interval + Hr # Seconds In Service} ÷ 3,600

Else

Hr VSS In Service = {3,600 - Hr # Seconds Operating Interval + Hr # Seconds On AVR} ÷ 3,600

1.1.7.2.1.5 Additional Information

Hr VSS In Service (%) is calculated as:

Hr VSS In Service (%) = Hr VSS In Service * 100

1.1.7.2.1.6 References

The applicability of Voltage Support Service Payments is described within Schedule 2 of the MST (Market Administration and Control Area Services Tariff), and Schedule 2 of the OATT (Open Access Transmission Tariff).

1.1.7.2.2 Voltage Support Service Lost Opportunity Cost Payment

1.1.7.2.2.1 Description

The Voltage Support Service (VSS) Lost Opportunity Cost (LOC) settlement ($) is intended to provide generators with a payment to offset any lost revenue in the energy markets as a result of being dispatched out of merit in real-time to provide Voltage Support Service.

The purpose for Voltage Support Service is to ensure sufficient capacity to maintain desired voltage levels on the New York Control Area (NYCA) transmission/distribution grid during real time operation. Voltage Support Service is accomplished through the use of on-line generators whose outputs are increased / decreased to produce/absorb reactive energy, including the use of Automatic Voltage Response (AVR), as necessary to maintain desired voltage levels.

The VSS LOC Payment settlement is based upon the generator's lost revenue from the real-time energy markets due to being dispatched out of merit by NYISO for VSS, minus the bid production costs of that energy determined from the generator's Hour Ahead Market (HAM) Generation Bid.

It is determined at the SCD-interval level for each generator dispatched out of merit in real-time by NYISO to provide voltage support service.

1.1.7.2.2.2 Required Data Elements

1.1.7.2.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	SCD Gen Upper Op Limit (MW)	SCD Generator Upper Operating Limit (MW) is a number indicating the maximum operating capacity for a generator during the given period.	Y

[5] Generators are not considered to be on voltage response if it is not in service.

Bill Code	Title	Business Description	DSS Value
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y
	SCD RT Energy Price :Gen ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component)	Y
	SCD RT Loss Price :Gen ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component)	Y
	SCD RT Cong Price :Gen ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component)	Y
	Hr VSS Flag	Hourly Voltage Support Service Flag is a character representing whether or not the unit is Out of Merit in order to provide voltage support service during the hour (values are Y or N).	Y
	Hr HAM Gen Bid Type Ind	Hour Ahead Market Generation Bid Type Indicator is a character representing the type of HAM generation bid submitted by the generator (block or curve)	Y
	Hr HAM Gen Bid Dispatch Seg :Block	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given HAM generation bid (block generation bid type).	Y
	Hr HAM Gen Bid Dispatch Seg :Curve	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given HAM generation bid (curve generation bid type).	Y
	Hr HAM Gen Bid :Gen 1 (MW)	Hour Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Gen 2 (MW)	Hour Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Gen 3 (MW)	Hour Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Gen 4 (MW)	Hour Ahead Market Generator Bid Generation #4 is a number representing the amount of generation	Y

Bill Code	Title	Business Description	DSS Value
		(MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid	
	Hr HAM Gen Bid :Gen 5 (MW)	Hour Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Gen 6 (MW)	Hour Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Price 1 ($/MW)	Hour Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Price 2 ($/MW)	Hour Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Price 3 ($/MW)	Hour Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Price 4 ($/MW)	Hour Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Price 5 ($/MW)	Hour Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid	Y
	Hr HAM Gen Bid :Price 6 ($/MW)	Hour Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid	Y

1.1.7.2.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD RT Total Price :Gen ($/MW)	Real-Time Total Price ($/MW) is a number representing the total LBMP price of a generator bus	Y
	SCD VSS LOC :Revenue ($)	SCD Voltage Support Service Lost Opportunity Cost -Revenue ($) is a number representing the amount of potential revenue lost related to a generator's dispatch to provide voltage support service in the given interval.	Y

	SCD VSS LOC :Cost ($)	SCD Voltage Support Service Lost Opportunity Cost -Cost ($) is a number representing the amount of cost determined from a Hour Ahead Market Generation Bid curve related to a generator's dispatch to provide voltage support service in the given interval.	Y

1.1.7.2.2.2.3 Results

Bill Code	**Title**	**Business Description**	**DSS Value**
	SCD VSS LOC Stlmnt ($)	SCD Voltage Support Service Lost Opportunity Cost Settlement ($) is a number representing the payment made to generators providing voltage support service designed to cover any lost revenue due to being dispatched off of their economic basepoint to provide VSS for the given interval.	Y

1.1.7.2.2.3 Eligibility

Generators will receive a payment for Voltage Support Service ($) if all of the following conditions exist:

- The generator is capable of providing Voltage Support Service.
- The generator is selected by NYISO to provide Voltage Support Service.
- The generator was Out of Merit in order to provide Voltage Support Service during the SCD-interval (Hr VSS Flag = “Y”).

1.1.7.2.2.4 Settlement Algorithm

SCD VSS LOC Stlmnt ($) is calculated as:

SCD VSS LOC Stlmnt ($) =

{SCD VSS LOC :Revenue ($) - SCD VSS LOC :Cost ($)} * {SCD Interval Seconds ÷ 3,600}

SCD VSS LOC :Revenue ($) is calculated as:

SCD VSS LOC :Revenue ($) =

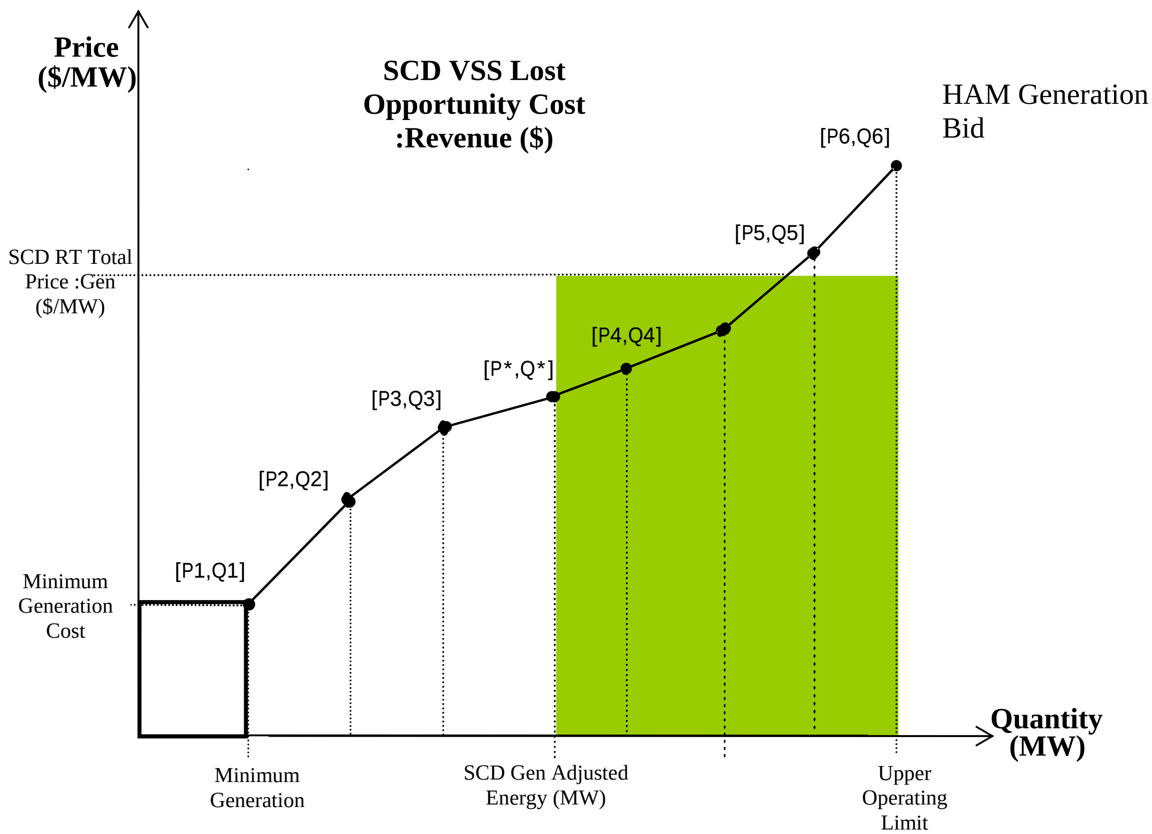
{SCD Gen Upper Op Limit (MW) - SCD Gen Adjusted Energy (MW)} * SCD RT Total Price :Gen ($/MW)

Where SCD RT Total Price :Gen ($/MW) can be calculated as:

SCD RT Total Price :Gen ($/MW) =

SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)

NOTE: The below graphic represents the SCD VSS LOC :Revenue ($):

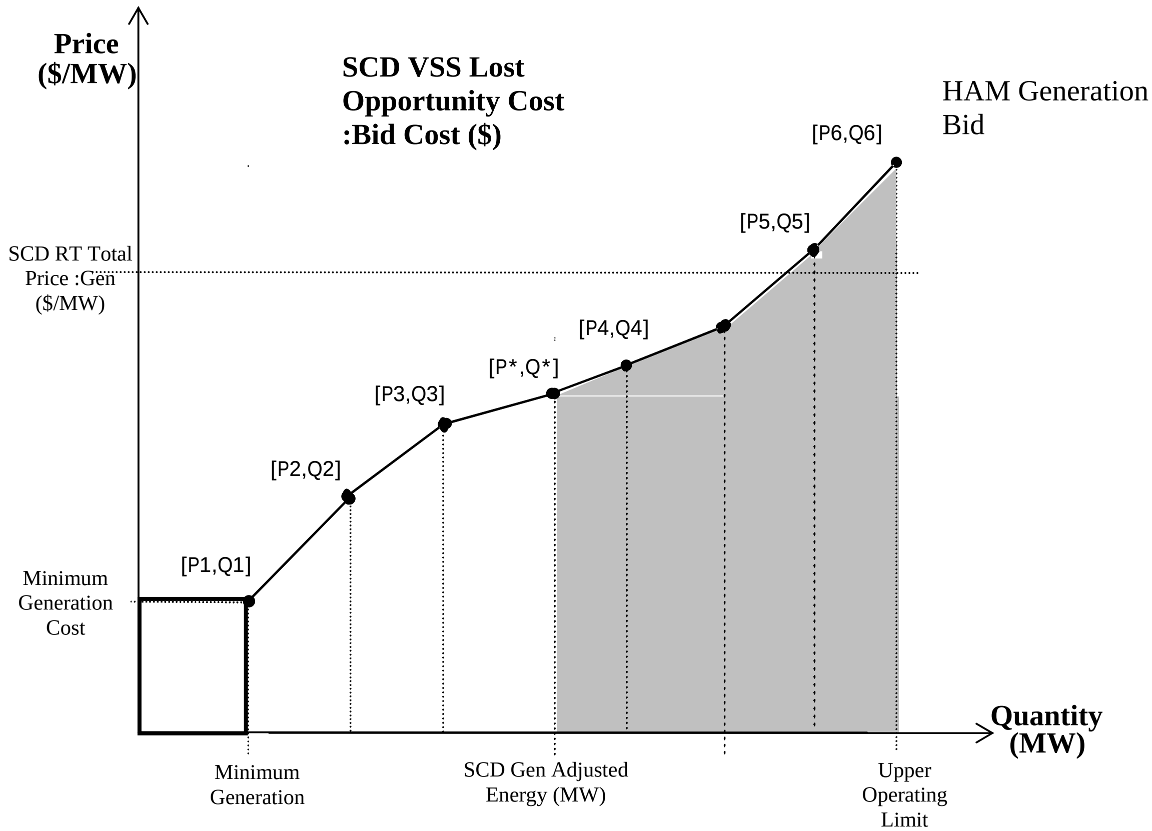


SCD VSS LOC :Cost ($) is calculated as:

SCD VSS LOC :Cost ($) is the bid production cost ($) under the generator's Hour Ahead Market (HAM) Generation Bid up to its Upper Operating Limit (MW), minus the bid production cost ($) under the generator's HAM Generation Bid up to its Generator Adjusted Energy (MW).

Please see Appendix A, Figure 1.3 for more information on how to determine the bid production cost ($) on a given Generation Bid corresponding to a specific upper and lower generation output level (MW).

NOTE: The below graphic represents the SCD VSS LOC :Cost ($):



1.1.7.2.2.5 Additional Information

None

1.1.7.2.2.6 References

The applicability of Voltage Support Lost Opportunity Cost Payments is described within Schedule 2 of the MST (Market Administration and Control Area Services Tariff), and Schedule 2 of the OATT (Open Access Transmission Tariff).

1.1.7.3 Black Start

1.1.7.3.1 Black Start Service Payment

1.1.7.3.1.1 Description

The Black Start Service Payment settlement ($) is intended to compensate Power Suppliers who offer their generator for Black Start Service as part of NYISO's Black Start Restoration Plan.

Black Start Service represents those generators that, following a system-wide blackout, can start without the availability of outside electric supply and are available to participate in restoration activities. The NYISO maintains the Black Start Restoration Plan for the New York State Power System, and identifies the generators that are needed due to their location in critical areas of the NYCA.

Generators capable of providing Black Start Service that are selected by NYISO as part of the NYISO's Black Start Recovery Plan are eligible to receive this settlement. Generators which are obligated to supply Black Start Service as a result of divestiture agreements are not eligible for this service.

The Black Start Service Payment settlement is based upon the annually-determined Black Start Rate ($) for the generator, divided by the number of days in the year. It is determined at the daily-level for each generator selected to provide Black Start Service.

1.1.7.3.1.2 Required Data Elements

1.1.7.3.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	# Days in Year	Number of Days in Year is a number representing the number of days in the given year (values are 365-366).	Y
	Yr Black Start Rate ($)	~~Monthly~~ Yearly Black Start Rate ($) is a number representing the ~~monthly~~ yearly amount determined for black start payments to capable generators for providing black start service to the NYISO~~; annual amount is divided by 12 to determine monthly value.~~.	Y

1.1.7.3.1.2.2 Intermediates

None

1.1.7.3.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
312	Day Black Start Stlmnt ($)	Daily Black Start Settlement ($) is a number representing the amount of the black start payment to a generator capable of providing black start service to NYISO for the given day.	Y

1.1.7.3.1.3 Eligibility

Generators will receive a payment for Black Start Service ($) if all of the following conditions exist:

- The generator is capable of providing Black Start Service.
- The generator is selected by NYISO as part of the NYISO Black Start Restoration Planning process.

The following are conditions for which Black Start Service ($) does not apply:

- Generators which are obligated to supply Black Start Service as a result of divestiture agreements.

1.1.7.3.1.4 Settlement Algorithm

Day Black Start Stlmnt ($) is calculated as:

Day Black Start Stlmnt ($) = Yr Black Start Rate ($) ÷ # Days in Year

1.1.7.3.1.5 Additional Information

- The Yearly Black Start Rate ($) is the summation of a generator's annual capital costs and annual operations & maintenance costs for black start related equipment, and the Annual Restoration Plan training costs.

1.1.7.3.1.6 References

The applicability of Black Start Service Payments is described within Schedule 5 of the MST (Market Administration and Control Area Services Tariff), and Schedule 6 of the OATT (Open Access Transmission Tariff).

1.1.7.4 Operating Reserve

1.1.7.4.1 DAM 10-Minute Synchronous Reserve Availability

1.1.7.4.1.1 Description

The Day-Ahead Market (DAM) 10-Minute Synchronous Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as 10-Minute Synchronous Reserve Service to the NYISO in the DAM.

The DAM 10-Minute Synchronous Availability settlement is based upon the 10-Minute Synchronous Reserve Service capacity scheduled for the generator, the corresponding DAM 10-Minute Synchronous Reserve Market Clearing Price (MCP), and any required adjustment due to generator non-performance. It is determined at the hourly-level for each generator scheduled to provide this service in the DAM.

Power Suppliers offering their generators into NYISO's DAM 10-Minute Synchronous Reserve Service market must be synchronous to the NYCA transmission grid in real-time, and capable of providing that reserve energy within 10-minutes of a reserve pickup.

1.1.7.4.1.2 Required Data Elements

1.1.7.4.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr DAM 10Sync Price East ($/MW)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for DAM 10-Minute Synchronous Operating Reserves service based on the set of generators in the East Ancillary Service	Y

Bill Code	Title	Business Description	DSS Value
		Pricing Region selected by SCUC.	
	Hr DAM 10Sync Price West ($/MW)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for DAM 10-Minute Synchronous Operating Reserves service based on the set of generators in the West Ancillary Service Pricing Region selected by SCUC.	Y
	Hr DAM Sched 10Sync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y

1.1.7.4.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM 10Sync Unadj Avail ($)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Unadjusted Availability ($) is a number representing the unadjusted settlement amount for Day Ahead Market 10-Minute Synchronous Operating Reserves service, unadjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM 10Sync Avail Stlmnt ($)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Availability Settlement ($) is a number representing the settlement amount for the availability of Day	Y

Bill Code	Title	Business Description	DSS Value
		Ahead Market 10-Minute Synchronous Operating Reserves service, adjusted for supply performance, for the given generator, for the given hour.	

1.1.7.4.1.3 Eligibility

Generators will receive a payment for DAM 10-Minute Synchronous Reserve Availability ($) if the following condition exists:

- The generator is scheduled to provide such service in the DAM, and

  Hr DAM Sched 10Sync Avail (MWh) > 0.

The following are conditions for when DAM 10-Minute Synchronous Reserve Availability ($) does not apply:

- Power Suppliers located outside of the NYCA are not able to participate in NYISO Power Supplier Ancillary Services markets at the present time.
  - Gen AS Pricing Region Ind = "EXT" for a particular generator.

1.1.7.4.1.4 Settlement Algorithm

Hr DAM 10Sync Avail Stlmnt ($) is calculated as:

Hr DAM 10Sync Avail Stlmnt ($) =

Hr DAM 10Sync Unadj Avail ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr DAM 10Sync Unadj Avail ($) =

Hr DAM Sched 10Sync Avail (MWh) * Hr DAM 10Sync Price ($/MW)

NOTE: The Hr DAM 10Sync Price ($/MW) is based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr DAM 10Sync Price East ($/MW), Hr DAM 10Sync Price West ($/MW)).

1.1.7.4.1.5 Additional Information

Daily Operating Reserves Average Supply Ratio:

The Daily Operating Reserves Average Supply Ratio (Day Op Res Avg Supply Perf Ratio) is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. The ratio is computed by dividing the SCD Gen Avg Actual Energy (MW) (average actual generation output in real-time) by the generator's SCD Basepoint (MW) (dispatch instruction) at the Security Constrained Dispatch (SCD) level, and then averaging those values across the day. This daily value is then stored for each hour of the day. Operating Reserve Availability payments are adjusted by this ratio to reflect the generator's failure to fulfill their commitments to provide Operating Reserve Service.

NOTES:

1. This SCD-level calculation is performed for reserve pickup intervals only throughout the day. If there are no reserve pickup intervals for the day, Daily Operating Reserves Average Supply Ratio = 1
2. If SCD Basepoint (MW) = 0, then SCD-level Operating Reserves Average Supply Ratio = 1
3. If SCD-level Operating Reserves Average Supply Ratio > 1, then SCD-level Operating Reserves Average Supply Ratio = 1

1.1.7.4.1.6 References

The applicability of Day Ahead 10-Minute Synchronous Reserve Availability Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff), and Schedule 5 of the OATT (Open Access Transmission Tariff).

1.1.7.4.2 Supplemental 10-Minute Synchronous Reserve Availability

1.1.7.4.2.1 Description

The Supplemental 10-Minute Synchronous Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as 10-Minute Synchronous Reserve Service to the NYISO in the Hour Ahead Market (HAM).

The Supplemental 10-Minute Synchronous Availability settlement is based upon the Supplemental 10-Minute Synchronous Reserve Service capacity scheduled for the generator, the corresponding HAM 10-Minute Synchronous Reserve Market Clearing Price (MCP), and any required adjustment due to generator non-performance. The Supplemental 10-Minute Synchronous Reserve Service capacity scheduled is the net of the generator's HAM and DAM 10-Minute Synchronous Reserve Service schedules, or zero (whichever is greater). It is determined at the hourly-level for each generator scheduled to provide this service in the HAM above their DAM 10-Minute Synchronous Reserve Service schedule.

Power Suppliers offering their generators into NYISO's HAM 10-Minute Synchronous Reserve Service market must be synchronous to the NYCA transmission grid in real-time, and capable of providing that reserve energy within 10-minutes of a reserve pickup.

1.1.7.4.2.2 Required Data Elements

1.1.7.4.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr HAM 10Sync Price East ($/MW)	Hourly Hour Ahead Market 10-Minute Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly	Y

Bill Code	Title	Business Description	DSS Value
		market clearing price for HAM 10-Minute Synchronous Operating Reserves service based on the set of generators in the East Ancillary Service Pricing Region selected by BME.	
	Hr HAM 10Sync Price West ($/MW)	Hourly Hour Ahead Market 10-Minute Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for HAM 10-Minute Synchronous Operating Reserves service based on the set of generators in the West Ancillary Service Pricing Region selected by BME.	Y
	Hr DAM Sched 10Sync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10Sync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y

1.1.7.4.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Sup 10Sync Unadj Avail ($)	Hourly Supplemental 10-Minute Synchronous Operating Reserves Unadjusted Availability Credit ($) is a number representing the unadjusted settlement amount for Supplemental 10-Minute Synchronous Operating Reserves Service, unadjusted for supply performance, for the given generator, for the given hour.	Y
	Hr Sup Sched 10Sync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of	Y

Bill Code	Title	Business Description	DSS Value
		Supplemental 10-Minute Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Synchronous Operating Reserves Availability (MWh) values.	

1.1.7.4.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Sup 10Sync Avail Stlmnt ($)	Hourly Supplemental 10-Minute Synchronous Operating Reserves Availability Settlement ($) is a number representing the settlement amount for availability of Supplemental 10-Minute Synchronous Operating Reserves Service, adjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.2.3 Eligibility

Generators will receive a payment for Supplemental 10-Minute Synchronous Reserve Availability ($) if the following condition exists:

- The generator is scheduled to provide such service in the HAM, and

  Hr Sup Sched 10Sync Avail (MWh) > 0.

The following are conditions for when Supplemental 10-Minute Synchronous Reserve Availability ($) does not apply:

- Power Suppliers located outside of the NYCA are not able to participate in NYISO Power Supplier Ancillary Services markets at the present time.
  - Gen AS Pricing Region Ind = “EXT” for a particular generator.

1.1.7.4.2.4 Settlement Algorithm

Hr Sup 10Sync Avail Stlmnt ($) is calculated as:

Hr Sup 10Sync Avail Stlmnt ($) =

Hr Sup 10Sync Unadj Avail ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr Sup 10Sync Unadj Avail ($) =

Hr Sup Sched 10Sync Avail (MWh) * Hr HAM 10Sync Price ($/MW)

Hr Sup Sched 10Sync Avail (MWh) =

Max{Hr HAM Sched 10Sync Avail (MWh) - Hr DAM Sched 10Sync Avail (MWh), 0}

NOTE: The Hr HAM 10Sync Price ($/MW) is based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr HAM 10Sync Price East ($/MW), Hr HAM 10Sync Price West ($/MW)).

1.1.7.4.2.5 Additional Information

Daily Operating Reserves Average Supply Ratio:

The Daily Operating Reserves Average Supply Ratio (Day Op Res Avg Supply Perf Ratio) is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. The ratio is computed by dividing the SCD Gen Avg Actual Energy (MW) (average actual generation output in real-time) by the generator's SCD Basepoint (MW) (dispatch instruction) at the Security Constrained Dispatch (SCD) level, and then averaging those values across the day. This daily value is then stored for each hour of the day. Operating Reserve Availability payments are adjusted by this ratio to reflect the generator's failure to fulfill their commitments to provide Operating Reserve Service.

NOTES:

1. This SCD-level calculation is performed for reserve pickup intervals only throughout the day. If there are no reserve pickup intervals for the day, Daily Operating Reserves Average Supply Ratio = 1
2. If SCD Basepoint (MW) = 0, then SCD-level Operating Reserves Average Supply Ratio = 1
3. If SCD-level Operating Reserves Average Supply Ratio > 1, then SCD-level Operating Reserves Average Supply Ratio = 1

1.1.7.4.2.6 References

The applicability of Supplemental 10-Minute Synchronous Reserve Availability Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff), and Schedule 5 of the OATT (Open Access Transmission Tariff).

1.1.7.4.3 DAM 10-Minute Non-Synchronous Reserve Availability

1.1.7.4.3.1 Description

The Day-Ahead Market (DAM) 10-Minute Non-Synchronous Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as 10-Minute Non-Synchronous Reserve Service to the NYISO in the DAM.

The DAM 10-Minute Non-Synchronous Availability settlement is based upon the 10-Minute Non-Synchronous Reserve Service capacity scheduled for the generator, the corresponding DAM 10-Minute Non-Synchronous Reserve Market Clearing Price (MCP), and any required adjustment due to generator non-performance. It is determined at the hourly-level for each generator scheduled to provide this service in the DAM.

Power Suppliers offering their generators into NYISO's DAM 10-Minute Non-Synchronous Reserve Service market must be non-synchronous to the NYCA transmission grid in real-time, and capable of providing that reserve energy within 10-minutes of a reserve pickup.

1.1.7.4.3.2 Required Data Elements

1.1.7.4.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr DAM 10NSync Price East ($/MW)	Hourly Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for DAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the East Ancillary Services Pricing Region selected by SCUC.	Y
	Hr DAM 10NSync Price West ($/MW)	Hourly Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for DAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the West Ancillary Services Pricing Region selected by SCUC.	Y
	Hr DAM Sched 10NSync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y

1.1.7.4.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr DAM 10NSync Unadj Avail ($)	Hourly Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Unadjusted Availability ($) is a number representing the unadjusted settlement amount for Day Ahead Market 10-Minute Non-Synchronous Operating Reserves service, unadjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM 10NSync Avail Stlmnt ($)	Hourly Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Availability ($) is a number representing the availability settlement for Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service, adjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.3.3 Eligibility

Generators will receive a payment for DAM 10-Minute Non-Synchronous Reserve Availability ($) if the following condition exists:

- The generator is scheduled to provide such service in the DAM, and

  Hr DAM Sched 10NSync Avail (MWh) > 0.

The following are conditions for when DAM 10-Minute Non-Synchronous Reserve Availability ($) does not apply:

- Power Suppliers located outside of the NYCA are not able to participate in NYISO Power Supplier Ancillary Services markets at the present time.
  - Gen AS Pricing Region Ind = “EXT” for a particular generator.

1.1.7.4.3.4 Settlement Algorithm

Hr DAM 10NSync Avail Stlmnt ($) is calculated as:

Hr DAM 10NSync Avail Stlmnt ($) =

Hr DAM 10NSync Unadj Avail ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr DAM 10NSync Unadj Avail ($) =

Hr DAM Sched 10NSync Avail (MWh) * Hr DAM 10NSync Price ($/MW)

NOTE: The Hr DAM 10NSync Price ($/MW) is based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr DAM 10NSync Price East ($/MW), Hr DAM 10NSync Price West ($/MW)).

1.1.7.4.3.5 Additional Information

Daily Operating Reserves Average Supply Ratio:

The Daily Operating Reserves Average Supply Ratio (Day Op Res Avg Supply Perf Ratio) is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. The ratio is computed by dividing the SCD Gen Avg Actual Energy (MW) (average actual generation output in real-time) by the generator's SCD Basepoint (MW) (dispatch instruction) at the Security Constrained Dispatch (SCD) level, and then averaging those values across the day. This daily value is then stored for each hour of the day. Operating Reserve Availability payments are adjusted by this ratio to reflect the generator's failure to fulfill their commitments to provide Operating Reserve Service.

NOTES:

1. This SCD-level calculation is performed for reserve pickup intervals only throughout the day. If there are no reserve pickup intervals for the day, Daily Operating Reserves Average Supply Ratio = 1
2. If SCD Basepoint (MW) = 0, then SCD-level Operating Reserves Average Supply Ratio = 1
3. If SCD-level Operating Reserves Average Supply Ratio > 1, then SCD-level Operating Reserves Average Supply Ratio = 1

1.1.7.4.3.6 References

The applicability of Day Ahead 10-Minute Non-Synchronous Reserve Availability Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff), and Schedule 5 of the OATT (Open Access Transmission Tariff).

1.1.7.4.4 Supplemental 10-Minute Non-Synchronous Reserve Availability

1.1.7.4.4.1 Description

The Supplemental 10-Minute Non-Synchronous Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as 10-Minute Non-Synchronous Reserve Service to the NYISO in the Hour Ahead Market (HAM).

The Supplemental 10-Minute Non-Synchronous Availability settlement is based upon the Supplemental 10-Minute Non-Synchronous Reserve Service capacity scheduled for the generator, the corresponding HAM 10-Minute Non-Synchronous Reserve Market Clearing Price (MCP), and any required adjustment due to generator non-performance. The Supplemental 10-Minute Non-Synchronous Reserve Service capacity scheduled is the net of the generator's HAM and DAM 10-Minute Non-Synchronous Reserve Service schedules, or zero (whichever is greater). It is determined at the hourly-level for each generator scheduled to provide this service in the HAM above their DAM 10-Minute Non-Synchronous Reserve Service schedule.

Power Suppliers offering their generators into NYISO's HAM 10-Minute Non-Synchronous Reserve Service market must be non-synchronous to the NYCA transmission grid in real-time, and capable of providing that reserve energy within 10-minutes of a reserve pickup.

1.1.7.4.4.2 Required Data Elements

1.1.7.4.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr HAM 10NSync Price East ($/MW)	Hourly Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for HAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the East Ancillary Service Pricing Region selected by BME.	Y
	Hr HAM 10NSync Price West ($/MW)	Hourly Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for HAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the West Ancillary Service Pricing Region selected by BME.	Y
	Hr DAM Sched 10NSync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y

1.1.7.4.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Sup 10NSync Unadj Avail ($)	Hourly Supplemental 10-Minute Non-Synchronous Operating Reserves Unadjusted Availability ($) is a number representing the unadjusted settlement amount for Supplemental 10-Minute Non-Synchronous Operating Reserves Service, unadjusted for supply performance, for the given generator, for the given hour.	Y
	Hr Sup Sched 10NSync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Non-Synchronous Operating Reserves Availability (MWh) values.	Y

1.1.7.4.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Sup 10NSync Avail Stlmnt ($)	Hourly Supplemental 10-Minute Non-Synchronous Operating Reserves Availability Settlement ($) is a number representing the settlement amount for the availability of Supplemental 10-Minute Non-Synchronous Operating Reserves Service, adjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.4.3 Eligibility

Generators will receive a payment for Supplemental 10-Minute Non-Synchronous Reserve Availability ($) if the following condition exists:

- The generator is scheduled to provide such service in the HAM, and

  Hr Sup Sched 10NSync Avail (MWh) > 0.

The following are conditions for when Supplemental 10-Minute Non-Synchronous Reserve Availability ($) does not apply:

- Power Suppliers located outside of the NYCA are not able to participate in NYISO Power Supplier Ancillary Services markets at the present time.
  - Gen AS Pricing Region Ind = “EXT” for a particular generator.

1.1.7.4.4.4 Settlement Algorithm

Hr Sup 10NSync Avail Stlmnt ($) is calculated as:

Hr Sup 10NSync Avail Stlmnt ($) =

Hr Sup 10NSync Unadj Avail ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr Sup 10NSync Unadj Avail ($) =

Hr Sup Sched 10NSync Avail (MWh) * Hr HAM 10NSync Price ($/MW)

Hr Sup Sched 10NSync Avail (MWh) =

Max{Hr HAM Sched 10NSync Avail (MWh) - Hr DAM Sched 10NSync Avail (MWh), 0}

NOTE: The Hr HAM 10NSync Price ($/MW) is based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr HAM 10NSync Price East ($/MW), Hr HAM 10NSync Price West ($/MW)).

1.1.7.4.4.5 Additional Information

Daily Operating Reserves Average Supply Ratio:

The Daily Operating Reserves Average Supply Ratio (Day Op Res Avg Supply Perf Ratio) is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. The ratio is computed by dividing the SCD Gen Avg Actual Energy (MW) (average actual generation output in real-time) by the generator's SCD Basepoint (MW) (dispatch instruction) at the Security Constrained Dispatch (SCD) level, and then averaging those values across the day. This daily value is then stored for each hour of the day. Operating Reserve Availability payments are adjusted by this ratio to reflect the generator's failure to fulfill their commitments to provide Operating Reserve Service.

NOTES:

1. This SCD-level calculation is performed for reserve pickup intervals only throughout the day. If there are no reserve pickup intervals for the day, Daily Operating Reserves Average Supply Ratio = 1
2. If SCD Basepoint (MW) = 0, then SCD-level Operating Reserves Average Supply Ratio = 1
3. If SCD-level Operating Reserves Average Supply Ratio > 1, then SCD-level Operating Reserves Average Supply Ratio = 1

1.1.7.4.4.6 References

The applicability of Supplemental 10-Minute Non-Synchronous Reserve Availability Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff), and Schedule 5 of the OATT (Open Access Transmission Tariff).

1.1.7.4.5 DAM 30-Minute Operating Reserve Availability

1.1.7.4.5.1 Description

The Day-Ahead Market (DAM) 30-Minute Operating Reserve Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as 30-Minute Operating Reserve Service to the NYISO in the DAM.

The DAM 30-Minute Operating Availability settlement is based upon the 30-Minute Operating Reserve Service capacity scheduled for the generator, the corresponding DAM 30-Minute Operating Reserve Market Clearing Price (MCP), and any required adjustment due to generator non-performance. It is determined at the hourly-level for each generator scheduled to provide this service in the DAM.

Power Suppliers offering their generators into NYISO's DAM 30-Minute Operating Reserve Service market must be synchronous to the NYCA transmission grid in real-time, and capable of providing that reserve energy within 30-minutes of a reserve pickup.

1.1.7.4.5.2 Required Data Elements

1.1.7.4.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr DAM 30Min Price East ($/MW)	Hourly Day Ahead Market 30-Minute Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for DAM 30-Minute Operating Reserves Service based on the set of generators in the East Ancillary Services Pricing Region selected by SCUC.	Y
	Hr DAM 30Min Price West ($/MW)	Hourly Day Ahead Market 30-Minute Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for DAM 30-Minute Operating Reserves Service based on the set of generators in the West Ancillary Services Pricing Region selected by SCUC.	Y
	Hr DAM Sched 30Min Avail (MWh)	Hourly Day Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions	Y

Bill Code	Title	Business Description	DSS Value
		over the day. This daily value is stored for each hour of the day.	

1.1.7.4.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM 30Min Unadj Avail ($)	Hourly Day Ahead Market 30-Minute Operating Reserves Unadjusted Availability ($) is a number representing the unadjusted settlement amount for Day Ahead Market 30-Minute Operating Reserves Service, unadjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM 30Min Avail Stlmnt ($)	Hourly Day Ahead Market 30-Minute Operating Reserves Availability Settlement ($) is a number representing the settlement amount for the availability of Day Ahead Market 30-Minute Operating Reserves Service, adjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.5.3 Eligibility

Generators will receive a payment for DAM 30-Minute Operating Reserve Availability ($) if the following condition exists:

- The generator is scheduled to provide such service in the DAM, and

  Hr DAM Sched 30Min Avail (MWh) > 0.

The following are conditions for when DAM 30-Minute Operating Reserve Availability ($) does not apply:

- Power Suppliers located outside of the NYCA are not able to participate in NYISO Power Supplier Ancillary Services markets at the present time.
  - Gen AS Pricing Region Ind = “EXT” for a particular generator.

1.1.7.4.5.4 Settlement Algorithm

Hr DAM 30Min Avail Stlmnt ($) is calculated as:

Hr DAM 30Min Avail Stlmnt ($) =

Hr DAM 30Min Unadj Avail ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr DAM 30Min Unadj Avail ($) =

Hr DAM Sched 30Min Avail (MWh) * Hr DAM 30Min Price ($/MW)

NOTE: The Hr DAM 30Min Price ($/MW) is based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr DAM 30Min Price East ($/MW), Hr DAM 30Min Price West ($/MW)).

1.1.7.4.5.5 Additional Information

Daily Operating Reserves Average Supply Ratio:

The Daily Operating Reserves Average Supply Ratio (Day Op Res Avg Supply Perf Ratio) is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. The ratio is computed by dividing the SCD Gen Avg Actual Energy (MW) (average actual generation output in real-time) by the generator's SCD Basepoint (MW) (dispatch instruction) at the Security Constrained Dispatch (SCD) level, and then averaging those values across the day. This daily value is then stored for each hour of the day. Operating Reserve Availability payments are adjusted by this ratio to reflect the generator's failure to fulfill their commitments to provide Operating Reserve Service.

NOTES:

1. This SCD-level calculation is performed for reserve pickup intervals only throughout the day. If there are no reserve pickup intervals for the day, Daily Operating Reserves Average Supply Ratio = 1
2. If SCD Basepoint (MW) = 0, then SCD-level Operating Reserves Average Supply Ratio = 1
3. If SCD-level Operating Reserves Average Supply Ratio > 1, then SCD-level Operating Reserves Average Supply Ratio = 1

1.1.7.4.5.6 References

The applicability of Day Ahead 30-Minute Operating Reserve Availability Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff), and Schedule 5 of the OATT (Open Access Transmission Tariff).

1.1.7.4.6 Supplemental 30-Minute Operating Reserve Availability

1.1.7.4.6.1 Description

The Supplemental 30-Minute Operating Availability settlement is intended to compensate Power Suppliers who offer their generator's capacity as 30-Minute Operating Reserve Service to the NYISO in the Hour Ahead Market (HAM).

The Supplemental 30-Minute Operating Reserve Availability settlement is based upon the Supplemental 30-Minute Operating Reserve Service capacity scheduled for the generator, the corresponding HAM 30-Minute Operating Reserve Market Clearing Price (MCP), and any required adjustment due to generator non-performance. The Supplemental 30-Minute Operating Reserve Service capacity scheduled is the net of the generator's HAM and DAM 30-Minute Operating Reserve Service schedules, or zero (whichever is greater). It is determined at the hourly-level for each generator scheduled to provide this service in the HAM above their DAM 30-Minute Operating Reserve Service schedule.

Power Suppliers offering their generators into NYISO's HAM 30-Minute Operating Reserve Service market must be synchronous to the NYCA transmission grid in real-time, and capable of providing that reserve energy within 30-minutes of a reserve pickup.

1.1.7.4.6.2 Required Data Elements

1.1.7.4.6.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr HAM 30Min Price East ($/MW)	Hourly Hour Ahead Market 30-Minute Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for HAM 30-Minute Operating Reserves Service based on the set of generators in the East Ancillary Service Pricing Region selected by BME.	Y
	Hr HAM 30Min Price West ($/MW)	Hourly Hour Ahead Market 30-Minute Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for HAM 30-Minute Operating Reserves Service based on the set of generators in the West Ancillary Service Pricing Region selected by BME.	Y
	Hr DAM Sched 30Min Avail (MWh)	Hourly Day Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 30Min Avail (MWh)	Hourly Hour Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator	Y

Bill Code	Title	Business Description	DSS Value
		followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	

1.1.7.4.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Sup 30Min Unadj Avail ($)	Hourly Supplemental 30-Minute Operating Reserves Unadjusted Availability ($) is a number representing the unadjusted settlement amount for Supplemental 30-Minute Operating Reserves Service, unadjusted for supply performance, for the given generator, for the given hour.	Y
	Hr Sup Sched 30Min Avail (MWh)	Hourly Supplemental Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 30-Minute Operating Reserves Availability (MWh) values.	Y

1.1.7.4.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Sup 30Min Avail Stlmnt ($)	Hourly Supplemental 30-Minute Operating Reserves Availability Settlement ($) is a number representing the settlement amount for the availability of Supplemental 30-Minute Operating Reserves Service, adjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.6.3 Eligibility

Generators will receive a payment for Supplemental 30-Minute Operating Reserve Availability ($) if the following condition exists:

- The generator is scheduled to provide such service in the HAM, and

  Hr Sup Sched 30Min Avail (MWh) > 0.

The following are conditions for when Supplemental 30-Minute Operating Reserve Availability ($) does not apply:

- Power Suppliers located outside of the NYCA are not able to participate in NYISO Power Supplier Ancillary Services markets at the present time.
    - Gen AS Pricing Region Ind = “EXT” for a particular generator.

1.1.7.4.6.4 Settlement Algorithm

Hr Sup 30Min Avail Stlmnt ($) is calculated as:

Hr Sup 30Min Avail Stlmnt ($) =

Hr Sup 30Min Unadj Avail ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr Sup 30Min Unadj Avail ($) =

Hr Sup Sched 30Min Avail (MWh) * Hr HAM 30Min Price ($/MW)

Hr Sup Sched 30Min Avail (MWh) =

Max{Hr HAM Sched 30Min Avail (MWh) - Hr DAM Sched 30Min Avail (MWh), 0}

NOTE: The Hr HAM 30Min Price ($/MW) is based on the given generator’s location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr HAM 30Min Price East ($/MW), Hr HAM 30Min Price West ($/MW)).

1.1.7.4.6.5 Additional Information

Daily Operating Reserves Average Supply Ratio:

The Daily Operating Reserves Average Supply Ratio (Day Op Res Avg Supply Perf Ratio) is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. The ratio is computed by dividing the SCD Gen Avg Actual Energy (MW) (average actual generation output in real-time) by the generator’s SCD Basepoint (MW) (dispatch instruction) at the Security Constrained Dispatch (SCD) level, and then averaging those values across the day. This daily value is then stored for each hour of the day. Operating Reserve Availability payments are adjusted by this ratio to reflect the generator’s failure to fulfill their commitments to provide Operating Reserve Service.

NOTES:

1. This SCD-level calculation is performed for reserve pickup intervals only throughout the day. If there are no reserve pickup intervals for the day, Daily Operating Reserves Average Supply Ratio = 1
2. If SCD Basepoint (MW) = 0, then SCD-level Operating Reserves Average Supply Ratio = 1
3. If SCD-level Operating Reserves Average Supply Ratio > 1, then SCD-level Operating Reserves Average Supply Ratio = 1

1.1.7.4.6.6 References

The applicability of Supplemental 30-Minute Operating Reserve Availability Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff), and Schedule 5 of the OATT (Open Access Transmission Tariff).

1.1.7.4.7 10-Minute Synchronous Reserve Reduction

1.1.7.4.7.1 Description

The 10-Minute Synchronous Reserve Reduction settlement ($) is intended to reduce the Day Ahead Market (DAM) and Supplemental 10-Minute Synchronous Reserve Availability settlements when the given generator is unable at a later time (still prior to or during real-time) to actually provide the scheduled reserve capacity (availability). 10-Minute Synchronous Reserve Reduction ($) is charged to Power Suppliers who were selected to provide DAM and/or Supplemental 10-Minute Synchronous Operating Reserve Service in the DAM or Hour Ahead Markets (HAM) respectively, when appropriate.

The 10-Minute Synchronous Reserve Reduction settlement is a charge to the Market Participant when the scenarios below are true. This settlement occurs at the hourly-level for each generator scheduled in the DAM and/or Supplemental 10-Minute Synchronous Reserve markets.

There are two main scenarios which cause 10-Minute Synchronous Reserve Reduction:

1. A result of the generator being off-service for a period of time during the given hour.
2. When the generator's Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is decreased below its total obligation for the given derate-period(s) during the given hour.

1.1.7.4.7.2 Required Data Elements

1.1.7.4.7.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr DAM 10Sync Price East ($/MW)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for DAM 10-Minute Synchronous Operating Reserves Service based on the set of generators in the East Ancillary Services Pricing Region selected by SCUC.	Y
	Hr DAM 10Sync Price West ($/MW)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for DAM 10-Minute Synchronous Operating Reserves Service based on the set of generators in the West Ancillary Services Pricing Region selected by SCUC.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM 10Sync Price East ($/MW)	Hourly Hour Ahead Market 10-Minute Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for HAM 10-Minute Synchronous Operating Reserves service based on the set of generators in the East Ancillary Service Pricing Region selected by BME.	Y
	Hr HAM 10Sync Price West ($/MW)	Hourly Hour Ahead Market 10-Minute Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for HAM 10-Minute Synchronous Operating Reserves service based on the set of generators in the West Ancillary Service Pricing Region selected by BME.	Y
	Hr DAM Sched 10Sync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10Sync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr DAM Sched 10NSync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr DAM Sched 30Min Avail (MWh)	Hourly Day Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Sched 30Min Avail (MWh)	Hourly Hour Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
202	Hr NYISO DAM Energy (MWh)	NYISO Day-Ahead Market Energy (MWh) is a number representing the amount of generation settled in the NYISO Day-Ahead Market	Y
	Hr RT Max Sched Trans :Gen (MW)	Hourly Real-Time Maximum Scheduled Transactions :Generator (MW) is a number representing the maximum amount of transaction energy for all transactions injected at a given generator across all SCD-intervals in the given hour.	N
5200	Hr Out of Merit Flag	Hourly Out of Merit Flag is a character representing whether or not the given generator was dispatched out of economic merit order during the hour.	Y
	Op Int Gen Upper Op Limit (MW)	Operating Interval Generator Upper Operating Limit (MW) is a number indicating the maximum operating capacity for a generator during the given operating interval period. An operating interval period is defined as a length of time in which the generator's upper operating limit, in service status, and on control status are all constant. When any one of those three elements changes, a new operating interval is started.	N
	Hr # Seconds In Service	Hourly Number of Seconds In Service is a number representing the amount of time in seconds a generator is actually in service for the given hour.	Y
	Hr PURPA Unit Ind	Hourly PURPA Unit Indicator is a character indicating whether or not the given unit is a PURPA unit during the given hour.	N
	Hr # Seconds Operating Interval	Hourly Number of Seconds Operating Interval is a number representing the number of seconds in the given generator's operating status intervals for the given hour.	Y
	# Seconds Derate Interval	# of Seconds Derate Interval is a number representing the number of seconds that a generator was derated by the Market Participant for the given operating status interval, within a given hour.	N

Bill Code	Title	Business Description	DSS Value
	Op Int Gen Status In Service Ind	Operating Interval Generator In Service Indicator is a character that represents whether the given generator was in service for the given operating interval. A value of "Y" means that the given generator was in service for the given interval. An operating interval period is defined as a length of time in which the generator's upper operating limit, in service status, and on control status are all constant. When any one of those three elements changes, a new operating interval is started.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y

1.1.7.4.7.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr # Seconds Off Service	Hourly Number of Seconds Off Service is a number representing the number of seconds that the given generator was not in service for the given hour.	N
	Hr Sup Sched 10Sync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Synchronous Operating Reserves Availability (MWh) values.	Y
	Hr Sup Sched 10NSync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Non-Synchronous Operating Reserves Availability (MWh) values.	Y

Bill Code	Title	Business Description	DSS Value
	Hr Sup Sched 30Min Avail (MWh)	Hourly Supplemental Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 30-Minute Operating Reserves Availability (MWh) values.	Y
	Hr Sup 30Min Reduct :Obligation (MWh)	Hourly Supplemental 30-Minute Operating Reserves Reduction :Obligation (MWh) is a number representing the obligation used in the Supplemental 30-Minute Operating Reserves reduction calculation due to the generator's obligation exceeding its upper operating limit.	N
	Hr DAM 30Min Reduct :Obligation (MWh)	Hourly Day Ahead Market 30-Minute Operating Reserves Reduction :Obligation (MWh) is a number representing the obligation used in the Day Ahead Market 30-Minute Operating Reserves reduction calculation due to the generator's obligation exceeding its upper operating limit.	N
	Hr Sup 10Sync Reduct :Obligation (MWh)	Hourly Supplemental 10-Minute Synchronous Operating Reserves Reduction :Obligation (MWh) is a number representing the obligation used in the Supplemental 10-Minute Synchronous Operating Reserves reduction calculation due to the generator's obligation exceeding its upper operating limit.	N
	Hr DAM 10Sync Reduct :Obligation (MWh)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Reduction :Obligation (MWh) is a number representing the obligation used in the DAM 10-Minute Synchronous Operating Reserves reduction calculation due to the generator's obligation exceeding its upper operating limit.	N
	Hr 10Sync Reduct :Off Service (MWh)	Hourly 10-Minute Synchronous Reserves Reduction :Off Service (MWh) is a number representing the amount of 10-Minute Synchronous Operating Reserves service reduce for the given interval, for the given generator due to it being off service.	N
	Hr DAM 30Min Reduct :Op Limit (MWh)	Hourly Day Ahead Market 30-Minute Operating Reserves Reduction :Operating Limit (MWh) is a number representing the amount of DAM 30-Minute Operating Reserves service reduced for the given interval, for the given generator due to its operating limit being less than its operating	N

Bill Code	Title	Business Description	DSS Value
		reserves obligation.	
	Hr Sup 30Min Reduct :Op Limit (MWh)	Hourly Supplemental 30-Minute Operating Reserves Reduction :Operating Limit (MWh) is a number representing the amount of Supplemental 30-Minute Operating Reserves service reduced for the given interval, for the given generator due to its operating limit being less than its operating reserves obligation.	N
	Hr DAM 10Sync Reduct :Op Limit (MWh)	Hourly Day Ahead Market 10-Minute Synchronous Operating Reserves Reduction :Operating Limit (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service reduced for the given interval, for the given generator due to its operating limit being less than its operating reserves obligation.	N
	Hr Sup 10Sync Reduct :Op Limit (MWh)	Hourly Supplemental 10-Minute Synchronous Operating Reserves Reduction :Operating Limit (MWh) is a number representing the amount of Supplement 10-Minute Synchronous Operating Reserves service reduced for the given interval, for the given generator due to its operating limit being less than its operating reserves obligation.	N
	Hr 10Sync Reduct :Total (MWh)	Hourly 10-Minute Synchronous Operating Reserves Reduction :Total (MWh) is a number representing the total amount of reduction due to off service and due to the operating limit being less than the generator's obligation over the given hour.	Y
	Hr 10Sync Reduct Unadj Cr ($)	Hourly 10-Minute Synchronous Operating Reserves Reduction Unadjusted Credit ($) is a number representing the amount for 10-Minute Synchronous Operating Reserves reduction settlement, unadjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.7.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr 10Sync Reduct Stlmnt ($)	Hourly 10-Minute Synchronous Operating Reserves Reduction Settlement ($) is a number representing the amount for 10-Minute Synchronous Operating Reserves reduction settlement, adjusted for supply performance, for	Y

Bill Code	Title	Business Description	DSS Value
		the given generator, for the given hour.	

1.1.7.4.7.3 Eligibility

Generators will be charged 10-Minute Synchronous Reserve Reduction ($) if any of the following conditions exist:

- Generator is Off-Service.
- Generator's Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is derated below its total obligation. A generator's obligation from operating reserve schedules will be reduced in the following order until its total obligation <= Op Int Gen Upper Op Limit (MW):
    - Supplemental 30-Minute Operating Reserve
    - DAM 30-Minute Operating Reserve
    - Supplemental 10-Minute Synchronous Reserve
    - DAM 10-Minute Synchronous Reserve

The following are scenarios for which 10-Minute Synchronous Reserve Reduction ($) does not apply:

- The GILBOA generators are not subject to 10-Minute Synchronous Reserve Reduction.
- PURPA generators (Hr PURPA Unit Ind = "Y) are not subject to 10-Minute Synchronous Reserve Reduction.
- 10-Minute Synchronous Reserve Reduction ($) is not calculated for Grouped Generators (Generator Type = "GROUP UNIT").

1.1.7.4.7.4 Settlement Algorithm

Hr 10Sync Reduct Stlmnt ($) is calculated as:

Hr 10Sync Reduct Stlmnt ($) =

Hr 10Sync Reduct Unadj Cr ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr 10Sync Reduct Unadj Cr ($) =

Hr 10Sync Reduct :Total (MWh) * Hr 10Sync Price ($/MW)

Where Hr 10Sync Price ($/MW) is defined as:

If Hr HAM 10Sync Price ($/MW) > 0:

Hr 10Sync Price ($/MW) = Hr HAM 10Sync Price ($/MW)

Else

Hr 10Sync Price ($/MW) = Hr DAM 10Sync Price ($/MW)

NOTE: The Hr HAM 10Sync Price ($/MW) and Hr DAM 10Sync Price ($/MW) data elements are based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr HAM 10Sync Price East ($/MW), Hr HAM 10Sync Price West ($/MW) and Hr DAM 10Sync Price East ($/MW), Hr DAM 10Sync Price West ($/MW)).

Hr 10Sync Reduct :Total (MWh) is calculated as:

Hr 10Sync Reduct :Total (MWh) =

Hr 10Sync Reduct :Off Service (MWh) + Hr Sup 10Sync Reduct :Op Limit (MWh) + Hr DAM 10Sync Reduct :Op Limit (MWh)

NOTES:

- Hr Sup 10Sync Reduct :Op Limit (MWh) & Hr DAM 10Sync Reduct :Op Limit (MWh) are calculated for each unique operating status interval for the given hour, and then all unique interval's totals are summed together to determine the hourly values.
- See the following sections for detailed calculations of 10-Minute Synchronous Reserve Reduction :Off-Service (MWh), and DAM and Supplemental 10-Minute Synchronous Reduction :Operating Limit (MWh).

Hr 10Sync Reduct :Off Service (MWh) is calculated as:

Hr 10Sync Reduct :Off Service (MWh) =

{Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh)} * (Hr # Seconds Off Service ÷ 3,600 Seconds)

Where Hr # Seconds Off Service is:

If Hr Out of Merit Flag = "Y"

Hr # Seconds Off Service = 0.

Else

Hr # Seconds Off Service =

[3,600 Seconds - {3,600 Seconds - Hr # Seconds Operating Interval + Hr # Seconds In Service}]

NOTES:

- The 10-Minute Synchronous Reserve Reduction :Off-Service (MWh) portion (above) of the overall 10-Minute Synchronous Reduction calculation is performed first, and is calculated only once for the given hour.

- When the generator is placed Out of Merit by NYISO (Hr Out of Merit Flag = "Y"), the Market Participant will not receive a reduction for being off-service (Hr # Seconds Off Service = 0) in a given hour. However, the generator is still subject to receive DAM and Supplemental 10-Minute Synchronous Reserve Reduction.
- See below for information regarding the calculation of Hr Sup Sched 10Sync Avail (MWh).

Hr Sup 30Min Reduct :Op Limit (MWh) is calculated as:

If Op Int Gen Status In Service Ind = "Y" and Op Int Gen Upper Op Limit (MW) < Hr Sup 30Min Reduct :Obligation (MWh), then

Hr Sup 30Min Reduct :Op Limit (MWh) =

∑ [[Hr Sup Sched 30Min Avail (MWh) - {Op Int Gen Upper Op Limit (MW) - (Hr Sup 30Min Reduct :Obligation (MWh) - Hr Sup Sched 30Min Avail (MWh)}] * {# Seconds Derate Interval ÷ 3,600 seconds}] for all operating intervals in the given hour.

If Hr Sup 30Min Reduct :Op Limit (MWh) > Hr Sup Sched 30Min Avail (MWh)

Hr Sup 30Min Reduct :Op Limit (MWh) = Hr Sup Sched 30Min Avail (MWh)

Where Hr Sup 30Min Reduct :Obligation (MWh) is calculated as:

Hr Sup 30Min Reduct :Obligation (MWh) =

Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh) +

Hr DAM Sched 10NSync Avail (MWh) + Hr Sup Sched 10NSync Avail (MWh) +

Hr DAM Sched 30Min Avail (MWh) + Hr Sup Sched 30Min Avail (MWh) +

Hr NYISO DAM Energy (MWh) + Hr RT Max Sched Trans :Gen (MW)

Otherwise:

Hr Sup 30Min Reduct :Op Limit (MWh) = 0.

NOTES:

- The Supplemental 30-Minute Operating Reserve Reduction portion (above) of the overall 10-Minute Synchronous Reduction calculation is performed second, and is calculated for each time period in which the generator is derated by the Market Participant within a given hour.
- See below for information regarding the calculation of:
  - Hr Sup Sched 10Sync Avail (MWh)
  - Hr Sup Sched 10NSync Avail (MWh)
  - Hr Sup Sched 30Min Avail (MWh)

Hr DAM 30Min Reduct :Op Limit (MWh) is calculated as:

If Op Int Gen Status In Service Ind = “Y” and Op Int Gen Upper Op Limit (MW) < Hr DAM 30Min Reduct :Obligation (MWh), then

Hr DAM 30Min Reduct :Op Limit (MWh) =

∑ [[Hr DAM Sched 30Min Avail (MWh) - {Op Int Gen Upper Op Limit (MW) - (Hr DAM 30Min Reduct :Obligation (MWh) - Hr DAM Sched 30Min Avail (MWh)}] * {# Seconds Derate Interval ÷ 3,600 seconds}] for all operating intervals in the given hour.

If Hr DAM 30Min Reduct :Op Limit (MWh) > Hr DAM Sched 30Min Avail (MWh)

Hr DAM 30Min Reduct :Op Limit (MWh) = Hr DAM Sched 30Min Avail (MWh)

Where Hr DAM 30Min Reduct :Obligation (MWh) is calculated as:

Hr DAM 30Min Reduct :Obligation (MWh) =

Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh) +

Hr DAM Sched 10NSync Avail (MWh) + Hr Sup Sched 10NSync Avail (MWh) +

Hr DAM Sched 30Min Avail (MWh) + Hr Sup Sched 30Min Avail (MWh) +

Hr NYISO DAM Energy (MWh) + Hr RT Max Sched Trans :Gen (MW) -

Hr Sup 30Min Reduct :Op Limit (MWh)

Otherwise:

Hr DAM 30Min Reduct :Op Limit (MWh) = 0.

NOTES:

- The Day Ahead Market 30-Minute Operating Reserve Reduction portion (above) of the overall 10-Minute Synchronous Reserve Reduction calculation is performed third, and is calculated for each time period in which the Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is less than the obligation level for DAM 30-Minute Operating Reserves.
- See below for information regarding the calculation of:
    - Hr Sup Sched 10Sync Avail (MWh)
    - Hr Sup Sched 10NSync Avail (MWh)
    - Hr Sup Sched 30Min Avail (MWh)

Hr Sup 10Sync Reduct :Op Limit (MWh) is calculated as:

If Op Int Gen Status In Service Ind = “Y” and Op Int Gen Upper Op Limit (MW) < Hr Sup 10Sync Reduct :Obligation (MWh), then:

Hr Sup 10Sync Reduct :Op Limit (MWh) =

∑ [[Hr Sup Sched 10Sync Avail (MWh) - {Op Int Gen Upper Op Limit (MW) - (Hr Sup 10Sync Reduct :Obligation (MWh) - Hr Sup Sched 10Sync Avail (MWh)}] * {# Seconds Derate Interval ÷ 3,600 seconds}] for all operating intervals in the given hour.

If Hr Sup 10Sync Reduct :Op Limit (MWh) > Hr Sup Sched 10Sync Avail (MWh)

Hr Sup 10Sync Reduct :Op Limit (MWh) = Hr Sup Sched 10Sync Avail (MWh)

Where Hr Sup 10Sync Reduct :Obligation (MWh) is calculated as:

Hr Sup 10Sync Reduct :Obligation (MWh) =

Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh) +

Hr DAM Sched 10NSync Avail (MWh) + Hr Sup Sched 10NSync Avail (MWh) +

Hr DAM Sched 30Min Avail (MWh) + Hr Sup Sched 30Min Avail (MWh) +

Hr NYISO DAM Energy (MWh) + Hr RT Max Sched Trans :Gen (MW) -

Hr Sup 30Min Reduct :Op Limit (MWh) - Hr DAM 30Min Reduct :Op Limit (MWh)

Otherwise:

Hr Sup 10Sync Reduct :Op Limit (MWh) = 0.

NOTES:

- The Supplemental 10-Minute Synchronous Reserve Reduction portion (above) of the overall 10-Minute Synchronous Reserve Reduction calculation is performed fourth, and is calculated for each time period in which the Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is less than the obligation level for Sup 10-Minute Synchronous Reserves.
- See below for information regarding the calculation of:
    - Hr Sup Sched 10Sync Avail (MWh)
    - Hr Sup Sched 10NSync Avail (MWh)
    - Hr Sup Sched 30Min Avail (MWh)

Hr DAM 10Sync Reduct :Op Limit (MWh) is calculated as:

If Op Int Gen Status In Service Ind = “Y” and Op Int Gen Upper Op Limit (MW) < Hr DAM 10Sync Reduct :Obligation (MWh), then:

Hr DAM 10Sync Reduct :Op Limit (MWh) =

∑ [[Hr DAM Sched 10Sync Avail (MWh) - {Op Int Gen Upper Op Limit (MW) - (Hr DAM 10Sync Reduct :Obligation (MWh) - Hr DAM Sched 10Sync Avail (MWh)}] * {# Seconds Derate Interval ÷ 3,600 seconds}] for all operating intervals in the given hour.

If Hr DAM 10Sync Reduct :Op Limit (MWh) > Hr DAM Sched 10Sync Avail (MWh)

Hr DAM 10Sync Reduct :Op Limit (MWh) = Hr DAM Sched 10Sync Avail (MWh)

Where Hr DAM 10Sync Reduct :Obligation (MWh) is calculated as:

Hr DAM 10Sync Reduct :Obligation (MWh) =

Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh) +

Hr DAM Sched 10NSync Avail (MWh) + Hr Sup Sched 10NSync Avail (MWh) +

Hr DAM Sched 30Min Avail (MWh) + Hr Sup Sched 30Min Avail (MWh) +

Hr NYISO DAM Energy (MWh) + Hr RT Max Sched Trans :Gen (MW) -

Hr Sup 30Min Reduct :Op Limit (MWh) - Hr DAM 30Min Reduct :Op Limit (MWh) - Hr Sup 10Sync Reduct :Op Limit (MWh)

Otherwise:

Hr DAM 10Sync Reduct :Op Limit (MWh) = 0.

NOTES:

- The DAM 10-Minute Synchronous Reserve Reduction portion (above) of the overall 10-Minute Synchronous Reduction calculation is performed last, and is calculated for each time period in which the Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is less than the obligation level for DAM 10-Minute Synchronous Reserves.
- See below for information regarding the calculation of:
  - Hr Sup Sched 10Sync Avail (MWh)
  - Hr Sup Sched 10NSync Avail (MWh)
  - Hr Sup Sched 30Min Avail (MWh)

The various Supplemental Reserve Availability (MWh) data elements are calculated as:

Hr Sup Sched 10Sync Avail (MWh) =

Max{Hr HAM Sched 10Sync Avail (MWh) - Hr DAM Sched 10Sync Avail (MWh), 0}

Hr Sup Sched 10NSync Avail (MWh) =

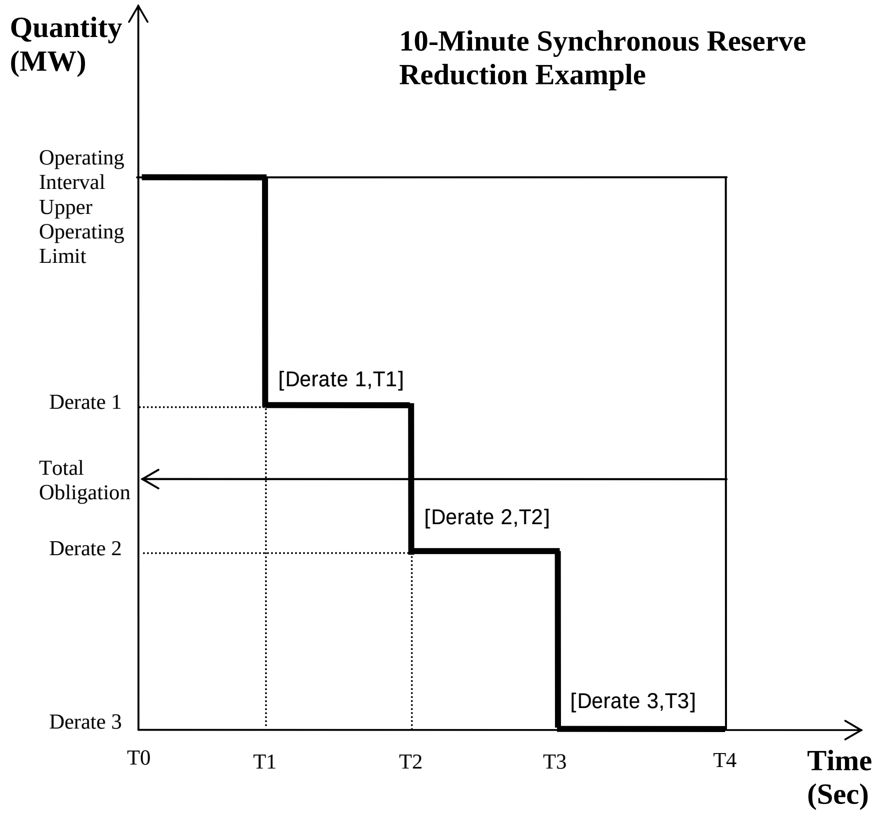
Max{Hr HAM Sched 10NSync Avail (MWh) - Hr DAM Sched 10NSync Avail (MWh), 0}

Hr Sup Sched 30Min Avail (MWh) =

Max{Hr HAM Sched 30Min Avail (MWh) - Hr DAM Sched 30Min Avail (MWh), 0}

1.1.7.4.7.5 Additional Information

10-Minute Synchronous Reserve Reduction Graphical Example:



NOTE: The above is a graphical representation of how a Market Participant's generator would be charged for 10-Minute Synchronous Reserve Reduction over an hour of time (from T0 - T4). Also, it is important to note that time between x-axis data points (i.e. between T1/T2, or T2/T3, etc.) are not at the ~5-min Security Constrained Dispatch (SCD) level, since these operating intervals can be any length of time.

[Operating Interval Upper Operating Limit (MW), Time T0]

- Generator is capable of producing above its total obligation (MWh). Therefore 10-Minute Synchronous Reserve Reduction is not applicable, and Hr 10Sync Reduct Stlmnt ($) = 0.

[Derate 1 (MW), Time T1]

- Generator's Operating Interval Upper Operating Limit (MW) has been derated to quantity Derate 1 (MW) at time T1. Since the generator is still in-service, and rated above its total obligation (MWh), 10-Minute Synchronous Reduction is not applicable, and Hr 10Sync Reduct Stlmnt ($) = 0.

[Derate 2 (MW), Time T2]

- Generator's is still in-service, but its Operating Interval Upper Operating Limit (MW) has been derated to quantity Derate 2 (MW) at time T2. Generator is now derated below its total obligation (MWh).
    - Hr Sup 10Sync Reduct :Op Limit (MWh) would be calculated from T2 to T3.
    - Hr DAM 10Sync Reduct :Op Limit (MWh) would be calculated from T2 to T3 if Op Int Gen Upper Op Limit (MW) < Hr DAM 10Sync Reduct :Obligation (MWh).

[Derate 3 (MW), Time T3]

- Generator is now off service at quantity Derate 3 (MW) and Time T3. Therefore, Hr 10Sync Reduct :Off Service (MWh) would be calculated from T3 to T4.

1.1.7.4.7.6 References

The applicability of 10-Minute Synchronous Reserve Reduction Charges is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff).

1.1.7.4.8 10-Minute Non-Synchronous Reserve Reduction

1.1.7.4.8.1 Description

The 10-Minute Non-Synchronous Reserve Reduction settlement ($) is intended to reduce the Day Ahead Market (DAM) and Supplemental 10-Minute Non-Synchronous Reserve Availability settlements when the given generator is unable at a later time (still prior to or during real-time) to actually provide the reserve capacity (availability). 10-Minute Non-Synchronous Reserve Reduction ($) is charged to Power Suppliers who were selected to provide DAM and/or Supplemental 10-Minute Non-Synchronous Operating Reserve Service in the DAM or Hour Ahead Markets (HAM) respectively, when appropriate.

The 10-Minute Non-Synchronous Reserve Reduction settlement is a charge to the Market Participant when the scenario above is true. This settlement occurs at the hourly-level for each generator scheduled in the DAM and/or Supplemental 10-Minute Non-Synchronous Reserve markets.

10-Minute Synchronous Reserve Reduction is caused as a result of the generator being unavailable for a period of time during the given hour.

1.1.7.4.8.2 Required Data Elements

1.1.7.4.8.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr DAM 10NSync Price East ($/MW)	Hourly Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for DAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the East Ancillary Services Pricing Region selected by SCUC.	Y
	Hr DAM 10NSync Price West ($/MW)	Hourly Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for DAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the West Ancillary Services Pricing Region selected by SCUC.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM 10NSync Price East ($/MW)	Hourly Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for HAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the East Ancillary Service Pricing Region selected by BME.	Y
	Hr HAM 10NSync Price West ($/MW)	Hourly Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for HAM 10-Minute Non-Synchronous Operating Reserves Service based on the set of generators in the West Ancillary Service Pricing Region selected by BME.	Y
	Hr DAM Sched 10NSync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr # Seconds Available	Hourly Number of Seconds Available is a number representing the amount of time in seconds that the given generator was available for the given hour.	Y
	Hr # Seconds Operating Interval	Hourly Number of Seconds Operating Interval is a number representing the number of seconds in the given generator's operating interval for the given hour.	Y
5200	Hr Out of Merit Flag	Hourly Out of Merit Flag is a character representing whether or not the given generator was dispatched out of economic merit order during the hour.	Y
	Hr PURPA Unit Ind	Hourly PURPA Unit Indicator is a character indicating whether or not the given unit is a PURPA unit during the given hour.	N
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator	Y

Bill Code	Title	Business Description	DSS Value
		followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	

1.1.7.4.8.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr # Seconds Unavailable	Hourly Number of Seconds Unavailable is a number representing amount of time in seconds the given generator was unavailable, for the given hour.	Y
	Hr Sup Sched 10NSync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Non-Synchronous Operating Reserves Availability (MWh) values.	Y
	Hr 10NSync Reduct :Unavail (MWh)	Hourly 10-Minute Non-Synchronous Operating Reserves Reduction :Unavailable (MWh) is a number representing the amount of 10-Minute Non-Synchronous Operating Reserves Service reduced for the given generator due to it being unavailable, for the given hour.	Y
	Hr 10NSync Reduct Unadj Cr ($)	Hourly 10-Minute Non-Synchronous Operating Reserves Reduction Unadjusted Credit ($) is a number representing the credit amount for 10-Minute Non-Synchronous Operating Reserves Reduction, unadjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.8.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr 10NSync Reduct Stlmnt ($)	Hourly 10-Minute Non-Synchronous Operating Reserves Reduction Settlement ($) is a number representing the settlement amount for 10-Minute Non-Synchronous Operating Reserves Reduction, adjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.8.3 Eligibility

Generators will be charged 10-Minute Non-Synchronous Reserve Reduction ($) if any of the following conditions exist:

- Generator is Unavailable.

The following are scenarios for which 10-Minute Non-Synchronous Reserve Reduction ($) does not apply:

- The GILBOA generators are not subject to 10-Minute Non-Synchronous Reserve Reduction.
- PURPA generators (Hr PURPA Unit Ind = "Y) are not subject to 10-Minute Non-Synchronous Reserve Reduction.
- 10-Minute Non-Synchronous Reserve Reduction ($) is not calculated for Grouped Generators (Generator Type = "GROUP UNIT").

1.1.7.4.8.4 Settlement Algorithm

Hr 10NSync Reduct Stlmnt ($) is calculated as:

Hr 10NSync Reduct Stlmnt ($) =

Hr 10NSync Reduct Unadj Cr ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr 10NSync Reduct Unadj Cr ($) =

Hr 10NSync Reduct :Unavail (MWh) * Hr 10NSync Price ($/MW)

Where Hr 10NSync Price ($/MW) is defined as:

If Hr HAM 10NSync Price ($/MW) > 0:

Hr 10NSync Price ($/MW) = Hr HAM 10NSync Price ($/MW)

Else

Hr 10NSync Price ($/MW) = Hr DAM 10NSync Price ($/MW)

NOTE: The Hr HAM 10NSync Price ($/MW) and Hr DAM 10NSync Price ($/MW) data elements are based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr HAM 10NSync Price East ($/MW), Hr HAM 10NSync Price West ($/MW) and Hr DAM 10NSync Price East ($/MW), Hr DAM 10NSync Price West ($/MW)).

Hr 10NSync Reduct :Unavail (MWh) is calculated as:

Hr 10NSync Reduct :Unavail (MWh) =

{Hr DAM Sched 10NSync Avail (MWh) + Hr Sup Sched 10NSync Avail (MWh)} * (Hr # Seconds Unavailable ÷ 3,600 Seconds)

Where Hr # Seconds Unavailable is:

If Hr Out of Merit Flag = "Y"

Hr # Seconds Unavailable = 0.

Else

Hr # Seconds Unavailable =

[3,600 Seconds - {3,600 Seconds - Hr # Seconds Operating Interval + Hr # Seconds Available}]

NOTE:

- When the generator is placed Out of Merit by NYISO (Hr Out of Merit Flag = "Y"), the Market Participant will not receive a reduction for being unavailable (Hr # Seconds Unavailable = 0) in a given hour.

Hr Sup Sched 10NSync Avail (MWh) is calculated as:

Hr Sup Sched 10NSync Avail (MWh)} =

Max{Hr HAM Sched 10NSync Avail (MWh) - Hr DAM Sched 10NSync Avail (MWh), 0}

1.1.7.4.8.5 Additional Information

None

1.1.7.4.8.6 References

The applicability of 10-Minute Non-Synchronous Reserve Reduction Charges is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff).

1.1.7.4.9 30-Minute Operating Reserve Reduction

1.1.7.4.9.1 Description

The 30-Minute Operating Reserve Reduction settlement ($) is intended to reduce the Day Ahead Market (DAM) and Supplemental 30-Minute Operating Reserve Availability settlements when the given generator is unable at a later time (still prior to or during real-time) to actually provide the scheduled reserve capacity (availability). 30-Minute Operating Reserve Reduction ($) is charged to Power Suppliers who were selected to provide DAM and/or Supplemental 30-Minute Operating Reserve Service in the DAM or Hour Ahead Markets (HAM) respectively, when appropriate.

The 30-Minute Operating Reserve Reduction settlement is a charge to the Market Participant when the scenarios below are true. This settlement occurs at the hourly-level level for each generator scheduled in the DAM and/or Supplemental 30-Minute Operating Reserve markets.

There are two main scenarios which cause 30-Minute Operating Reserve Reduction:

1. A result of the generator being unavailable for a period of time during the given hour.

2. When the generator's Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is decreased below its total obligation for the given derate-period(s) during the given hour.

1.1.7.4.9.2 Required Data Elements

1.1.7.4.9.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen AS Pricing Region Ind	Generator Ancillary Service Pricing Region Indicator represents whether the given generator is located in the NYISO East or West Ancillary Service Pricing Region.	N
	Hr DAM 30Min Price East ($/MW)	Hourly Day Ahead Market 30-Minute Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for DAM 30-Minute Operating Reserves Service based on the set of generators in the East Ancillary Services Pricing Region selected by SCUC.	Y
	Hr DAM 30Min Price West ($/MW)	Hourly Day Ahead Market 30-Minute Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for DAM 30-Minute Operating Reserves Service based on the set of generators in the West Ancillary Services Pricing Region selected by SCUC.	Y
	Hr HAM 30Min Price East ($/MW)	Hourly Hour Ahead Market 30-Minute Operating Reserves Price East ($/MW) is a number representing the east hourly market clearing price for HAM 30-Minute Operating Reserves Service based on the set of generators in the East Ancillary Service Pricing Region selected by BME.	Y
	Hr HAM 30Min Price West ($/MW)	Hourly Hour Ahead Market 30-Minute Operating Reserves Price West ($/MW) is a number representing the west hourly market clearing price for HAM 30-Minute Operating Reserves Service based on the set of generators in the West Ancillary Service Pricing Region selected by BME.	Y
	Hr DAM Sched 10Sync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Sched 10Sync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr DAM Sched 10NSync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr DAM Sched 30Min Avail (MWh)	Hourly Day Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 30Min Avail (MWh)	Hourly Hour Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
202	Hr NYISO DAM Energy (MWh)	NYISO Day-Ahead Market Energy (MWh) is a number representing the amount of generation settled in the NYISO Day-Ahead Market	Y
	Hr RT Max Sched Trans :Gen (MW)	Hourly Real-Time Maximum Scheduled Transactions :Generator (MW) is a number representing the maximum amount of transaction energy for all transactions injected at a given generator, for all SCD-intervals in the given hour.	N
5200	Hr Out of Merit Flag	Hourly Out of Merit Flag is a character representing whether or not the given generator was dispatched out of economic merit order during the hour.	Y
	Op Int Gen Upper Op Limit (MW)	Operating Interval Generator Upper Operating Limit (MW) is a number indicating the maximum operating capacity for a generator during the given	N

Bill Code	Title	Business Description	DSS Value
		operating interval period. An operating interval period is defined as a length of time in which the generator's upper operating limit, in service status, and on control status are all constant. When any one of those three elements changes, a new operating interval is started.	
	Hr # Seconds Available	Hourly Number of Seconds Available is a number representing the amount of time in seconds that the given generator was available for the given hour.	Y
	Hr PURPA Unit Ind	Hourly PURPA Unit Indicator is a character indicating whether or not the given unit is a PURPA unit during the given hour.	N
	Hr # Seconds Operating Interval	Hourly Number of Seconds Operating Interval is a number representing the number of seconds in the given generator's operating interval for the given hour.	Y
	# Seconds Derate Interval	# of Seconds Derate Interval is a number representing the number of seconds that a generator was derated by the Market Participant for the given operating status interval, within a given hour.	N
	Op Int Gen Status In Service Ind	Operating Interval Generator In Service Indicator is a character that represents whether the given generator was in service for the given operating interval. A value of "Y" means that the given generator was in service for the given interval. An operating interval period is defined as a length of time in which the generator's upper operating limit, in service status, and on control status are all constant. When any one of those three elements changes, a new operating interval is started.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y

1.1.7.4.9.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr # Seconds Unavailable	Hourly Number of Seconds Unavailable is a number representing amount of time in seconds the given generator was unavailable, for the given hour.	Y
	Hr DAM 30Min Reduct :Op Limit (MWh)	Hourly Day Ahead Market 30-Minute Operating Reserves Reduction :Operating Limit (MWh) is a number representing the amount of DAM 30-Minute Operating Reserves service reduced for the given interval, for the given generator due to its operating limit being less than its operating reserves obligation.	N
	Hr Sup 30Min Reduct :Op Limit (MWh)	Hourly Supplemental 30-Minute Operating Reserves Reduction :Operating Limit (MWh) is a number representing the amount of Supplemental 30-Minute Operating Reserves service reduced for the given interval, for the given generator due to its operating limit being less than its operating reserves obligation.	N
	Hr Sup Sched 10Sync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Synchronous Operating Reserves Availability (MWh) values.	Y
	Hr Sup Sched 10NSync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Non-Synchronous Operating Reserves Availability (MWh) values.	Y
	Hr Sup Sched 30Min Avail (MWh)	Hourly Supplemental Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 30-Minute Operating Reserves Availability (MWh) values.	Y
	Hr 30Min Reduct :Unavail (MWh)	Hourly 30-Minute Operating Reserves Reduction :Unavailable (MWh) is a number representing the	N

Bill Code	Title	Business Description	DSS Value
		amount of 30-Minute Operating Reserves service reduced for the given interval, for the given generator due to it being unavailable.	
	Hr Sup 30Min Reduct :Obligation (MWh)	Hourly Supplemental 30-Minute Operating Reserves Reduction :Obligation (MWh) is a number representing the obligation used in the Supplemental 30-Minute Operating Reserves reduction calculation due to the generator's obligation exceeding its upper operating limit.	N
	Hr DAM 30Min Reduct :Obligation (MWh)	Hourly Day Ahead Market 30-Minute Operating Reserves Reduction :Obligation (MWh) is a number representing the obligation used in the Day Ahead Market 30-Minute Operating Reserves reduction calculation due to the generator's obligation exceeding its upper operating limit.	N
	Hr 30Min Reduct :Total (MWh)	Hourly 30-Minute Operating Reserves Reduction :Total (MWh) is a number representing the total amount of reduction due to the generator being unavailable and due to the operating limit being less than the generator's obligation over the given hour.	Y
	Hr 30Min Reduct Unadj Cr ($)	Hourly 30-Minute Operating Reserves Reduction Unadjusted Credit ($) is a number representing the settlement amount for 30-Minute Operating Reserves Reduction, unadjusted for supply performance, for the given generator, for the given hour.	Y

1.1.7.4.9.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr 30Min Reduct Stlmnt ($)	Hourly 30-Minute Operating Reserves Reduction Settlement ($) is a number representing the settlement amount for 30-Minute Operating Reserves Reduction, for the given generator, for the given hour.	Y

1.1.7.4.9.3 Eligibility

Generators will be charged 30-Minute Operating Reserve Reduction ($) if any of the following conditions exist:

- Generator is Unavailable.
- Generator’s Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is derated below its total obligation. A generator’s obligation from operating reserve schedules

will be reduced in the following order until its total obligation <= Op Int Gen Upper Op Limit (MW):

- Supplemental 30-Minute Operating Reserve
- DAM 30-Minute Operating Reserve

The following are scenarios for which 30-Minute Operating Reserve Reduction ($) does not apply:

- The GILBOA generators are not subject to 30-Minute Operating Reserve Reduction.
- PURPA generators (Hr PURPA Unit Ind = "Y) are not subject to 30-Minute Operating Reserve Reduction.
- 30-Minute Operating Reserve Reduction ($) is not calculated for Grouped Generators (Generator Type = "GROUP UNIT").

1.1.7.4.9.4 Settlement Algorithm

Hr 30Min Reduct Stlmnt ($) is calculated as:

Hr 30Min Reduct Stlmnt ($) =

Hr 30Min Reduct Unadj Cr ($) * Day Op Res Avg Supply Perf Ratio

Where:

Hr 30Min Reduct Unadj Cr ($) =

Hr 30Min Reduct :Total (MWh) * Hr 30Min Price ($/MW)

Where Hr 30Min Price ($/MW) is defined as:

If Hr HAM 30Min Price ($/MW) > 0:

Hr 30Min Price ($/MW) = Hr HAM 30Min Price ($/MW)

Else

Hr 30Min Price ($/MW) = Hr DAM 30Min Price ($/MW)

NOTE: The Hr HAM 30Min Price ($/MW) and Hr DAM 30Min Price ($/MW) data elements are based on the given generator's location within the NYISO AS pricing regions (Gen AS Pricing Region Ind): East or West (Hr HAM 30Min Price East ($/MW), Hr HAM 30Min Price West ($/MW) and Hr DAM 30Min Price East ($/MW), Hr DAM 30Min Price West ($/MW)).

Hr 30Min Reduct :Total (MWh) is calculated as:

Hr 30Min Reduct :Total (MWh) =

Hr 30Min Reduct :Unavail (MWh) + Hr Sup 30Min Reduct :Op Limit (MWh) + Hr DAM 30Min Reduct :Op Limit (MWh)

NOTES:

- Hr Sup 30Min Reduct :Op Limit (MWh) & Hr DAM 30Min Reduct :Op Limit (MWh) are calculated for each unique operating status interval for the given hour, and then all unique interval's totals are summed together to determine the hourly values.
- See the following sections for detailed calculations of 30-Minute Operating Reserve Reduction :Unavailable (MWh), and DAM and Supplemental 30-Minute Operating Reserve Reduction :Operating Limit (MWh).

Hr 30Min Reduct :Unavail (MWh) is calculated as:

Hr 30Min Reduct :Unavail (MWh) =

{Hr DAM Sched 30Min Avail (MWh) + Hr Sup Sched 30Min Avail (MWh)} * (Hr # Seconds Unavailable ÷ 3,600 Seconds)

Where Hr # Seconds Unavailable is:

If Hr Out of Merit Flag = "Y"

Hr # Seconds Unavailable = 0.

Else

Hr # Seconds Unavailable =

[3,600 Seconds - {3,600 Seconds - Hr # Seconds Operating Interval + Hr # Seconds Available}]

NOTES:

- The 30-Minute Operating Reserve Reduction :Unavailable (MWh) portion (above) of the overall 30-Minute Operating Reserve Reduction calculation is performed first, and is calculated only once for the given hour.
- When the generator is placed Out of Merit by NYISO (Hr Out of Merit Flag = "Y"), the Market Participant will not receive a reduction for being unavailable (Hr # Seconds Unavailable = 0) in a given hour. However, the generator is still subject to receive DAM and Supplemental 30-Minute Operating Reserve Reduction.
- See below for information regarding the calculation of Hr Sup Sched 30Min Avail (MWh).

Hr Sup 30Min Reduct :Op Limit (MWh) is calculated as:

If Op Int Gen Status In Service Ind = "Y" and Op Int Gen Upper Op Limit (MW) < Hr Sup 30 Min Reduct :Obligation (MWh), then

Hr Sup 30Min Reduct :Op Limit (MWh) =

∑ [[Hr Sup Sched 30Min Avail (MWh) - {Op Int Gen Upper Op Limit (MW) - (Hr Sup 30Min Reduct :Obligation (MWh) - Hr Sup Sched 30Min Avail (MWh))}] * {# Seconds Derate Interval ÷ 3,600 seconds}] for all operating intervals in the given hour.

If Hr Sup 30Min Reduct :Op Limit (MWh) > Hr Sup Sched 30Min Avail (MWh)

Hr Sup 30Min Reduct :Op Limit (MWh) = Hr Sup Sched 30Min Avail (MWh)

Where Hr Sup 30Min Reduct :Obligation (MWh) is calculated as:

Hr Sup 30Min Reduct :Obligation (MWh) =

Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh) +

Hr DAM Sched 10NSync Avail (MWh) + Hr Sup Sched 10NSync Avail (MWh) +

Hr DAM Sched 30Min Avail (MWh) + Hr Sup Sched 30Min Avail (MWh) +

Hr NYISO DAM Energy (MWh) + Hr RT Max Sched Trans :Gen (MW)

Otherwise:

Hr Sup 30Min Reduct :Op Limit (MWh) = 0.

NOTES:

- The Supplemental 30-Minute Operating Reserve Reduction portion (above) of the overall 30-Minute Operating Reserve Reduction calculation is performed second, and is calculated for each time period in which the generator is derated by the Market Participant within a given hour.
- See below for information regarding the calculation of:
  - Hr Sup Sched 10Sync Avail (MWh)
  - Hr Sup Sched 10NSync Avail (MWh)
  - Hr Sup Sched 30Min Avail (MWh)

Hr DAM 30Min Reduct :Op Limit (MWh) is calculated as:

If Op Int Gen Status In Service Ind = "Y" and Op Int Gen Upper Op Limit (MW) < Hr DAM 30Min Reduct :Obligation (MWh), then

Hr DAM 30Min Reduct :Op Limit (MWh) =

∑ [[Hr DAM Sched 30Min Avail (MWh) - {Op Int Gen Upper Op Limit (MW) - (Hr DAM 30 Min Reduct :Obligation (MWh) - Hr DAM Sched 30Min Avail (MWh)}] * {# Seconds Derate Interval ÷ 3,600 seconds}] for all operating intervals in the given hour.

If Hr DAM 30Min Reduct :Op Limit (MWh) > Hr DAM Sched 30Min Avail (MWh)

Hr DAM 30Min Reduct :Op Limit (MWh) = Hr DAM Sched 30Min Avail (MWh)

Where Hr DAM 30Min Reduct :Obligation (MWh) is calculated as:

Hr DAM 30Min Reduct :Obligation (MWh) =

Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh) +

Hr DAM Sched 10NSync Avail (MWh) + Hr Sup Sched 10NSync Avail (MWh) +

Hr DAM Sched 30Min Avail (MWh) + Hr Sup Sched 30Min Avail (MWh) +

Hr NYISO DAM Energy (MWh) + Hr RT Max Sched Trans :Gen (MW) -

Hr Sup 30Min Reduct :Op Limit (MWh)

Otherwise:

Hr DAM 30Min Reduct :Op Limit (MWh) = 0.

NOTES:

- The Day Ahead Market 30-Minute Operating Reserve Reduction portion (above) of the overall 30-Minute Operating Reserve Reduction calculation is performed last, and is calculated for each time period in which the Operating Interval Upper Operating Limit (Op Int Gen Upper Op Limit (MW)) is less than the obligation level for DAM 30-Minute Operating Reserves.
- See below for information regarding the calculation of:
  - Hr Sup Sched 10Sync Avail (MWh)
  - Hr Sup Sched 10NSync Avail (MWh)
  - Hr Sup Sched 30Min Avail (MWh)

The various Supplemental Reserve Availability (MWh) data elements are calculated as:

Hr Sup Sched 10Sync Avail (MWh) =

Max{Hr HAM Sched 10Sync Avail (MWh) - Hr DAM Sched 10Sync Avail (MWh), 0}

Hr Sup Sched 10NSync Avail (MWh) =

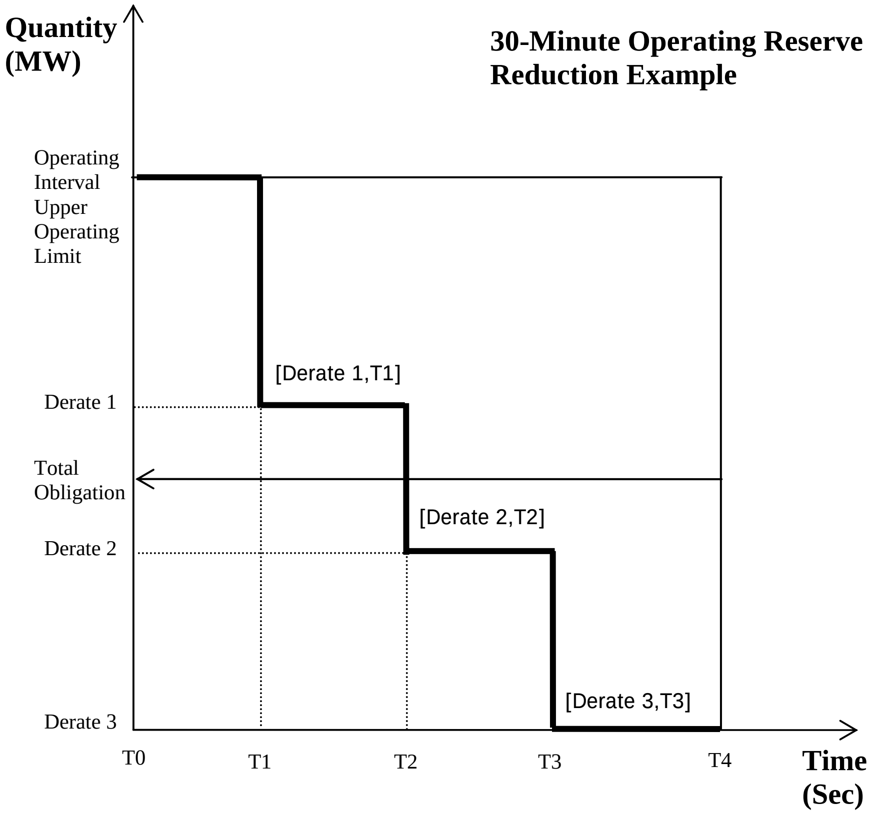
Max{Hr HAM Sched 10NSync Avail (MWh) - Hr DAM Sched 10NSync Avail (MWh), 0}

Hr Sup Sched 30Min Avail (MWh) =

Max{Hr HAM Sched 30Min Avail (MWh) - Hr DAM Sched 30Min Avail (MWh), 0}

1.1.7.4.9.5 Additional Information

30-Minute Operating Reserve Reduction Graphical Example:



NOTE: The above is a graphical representation of how a Market Participant's generator would be charged for 30-Minute Operating Reserve Reduction over an hour of time (from T0 - T4). Also, it is important to note that time between x-axis data points (i.e. between T1/T2, or T2/T3, etc.) are not at the ~5-min Security Constrained Dispatch (SCD) level, since these operating intervals can be any length of time.

[Operating Interval Upper Operating Limit (MW), Time T0]

- Generator is capable of producing above its total obligation. Therefore, 30-Minute Operating Reserve Reduction is not applicable, and Hr 30Min Reduct Stlmnt ($) = 0.

[Derate 1 (MW), Time T1]

- Generator's Operating Interval Upper Operating Limit (MW) has been derated to quantity Derate 1 (MW) at time T1. Since the generator is still available, and rated above its total obligation (MWh), 30-Minute Operating Reserve Reduction is not applicable, and Hr 30Min Reduct Stlmnt ($) = 0.

[Derate 2 (MW), Time T2]

- Generator's Operating Interval Upper Operating Limit (MW) has been derated to quantity Derate 2 (MW) at time T2. Generator is now derated below its total obligation (MWh).
  - Hr Sup 30 Mn Reduct :Op Limit (MWh) would be calculated from T2 to T3.
  - Hr DAM 30 Mn Reduct :Op Limit (MWh) would be calculated from T2 to T3 if Op Int Gen Upper Op Limit (MW) < Hr DAM 30 Min Reduct :Obligation (MWh)

[Derate 3 (MW), Time T3]

- Generator is now unavailable at quantity Derate 3 (MW) and Time T3. Therefore, Hr 30 Mn Reduct :Unavail (MWh) would be calculated from T3 to T4.

1.1.7.4.9.6 References

The applicability of 30-Minute Operating Reserve Reduction Charges is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff).

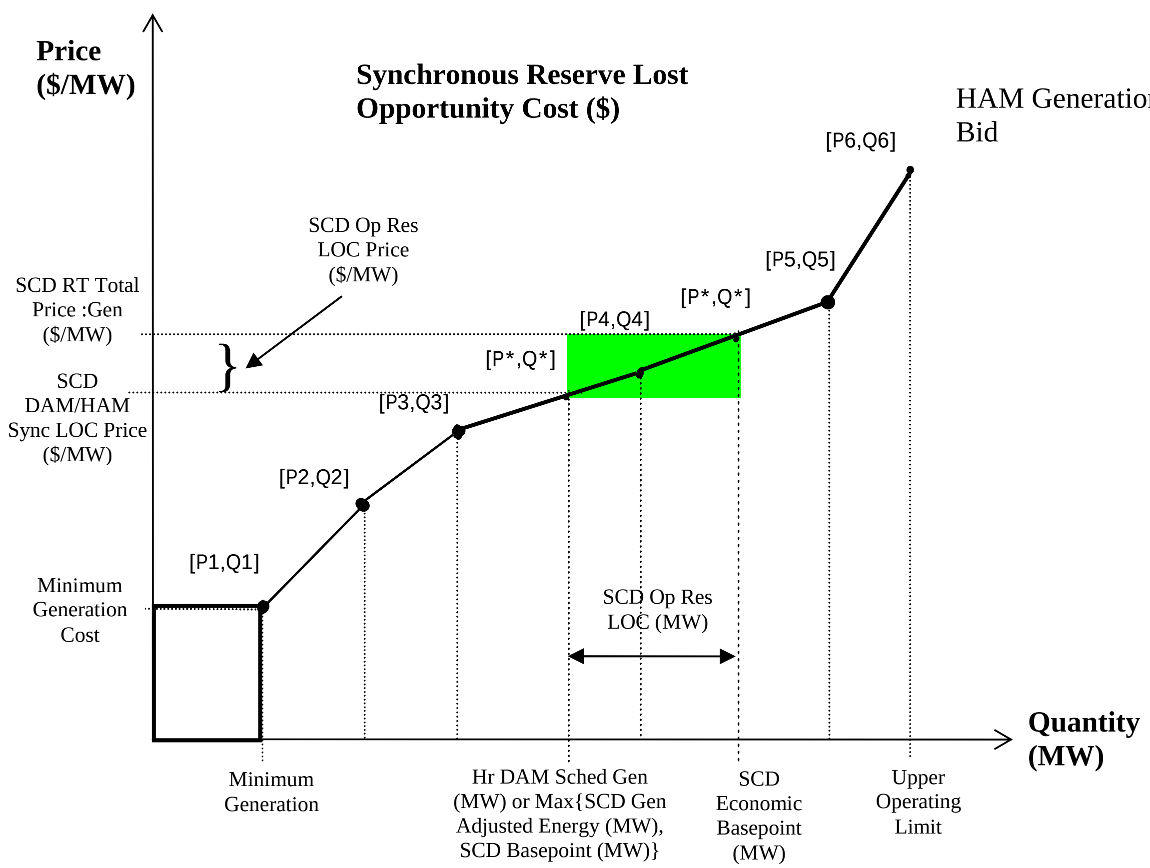
1.1.7.4.10 Synchronous Reserve Lost Opportunity Cost (Blocked Generators)

1.1.7.4.10.1 Description

The Synchronous Reserve Lost Opportunity Cost (LOC) for Blocked Generators settlement ($) is designed to provide generators with a payment (minus any required adjustment due to non-performance) to offset any lost revenue in the energy markets as a result of being blocked during the scheduling process. The settlement is intended for Power Suppliers who offer to provide Day Ahead Market (DAM) and/or Supplemental Synchronous Reserve Service, and a portion of their economic energy schedule is reduced in order to provide such reserve service. In this scenario, the generator may be eligible for a lost opportunity cost payment.

This specific scenario occurs when NYISO dispatches a generator below its economic basepoint according to the Market Participant's Generation Bid. This settlement occurs at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each generator, blocked during scheduling, synchronous to the NYCA grid in order to provide Synchronous Reserve Service.

See the below graphical example:



The area highlighted in green represents the generator's SCD Op Res LOC Stlmnt ($). It represents the area between the generator's economic basepoint and its actual basepoint (or corresponding output level), and the difference in prices corresponding to the non-economic dispatch level.

1.1.7.4.10.2 Required Data Elements

1.1.7.4.10.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Sched 10Sync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10Sync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	SCD Gen Upper Op Limit (MW)	SCD Generator Upper Operating Limit (MW) is a number indicating the maximum operating capacity for a generator during the given period.	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y
5220	Hr Out of Merit Type Desc	Hourly Out of Merit Type Description represents the reason for an out of economic merit dispatch for the given generator and hour.	Y
	Hr Out of Merit Type ID	Hourly Out of Merit Type ID is a number representing the reason for an out of economic merit dispatch for the given generator and hour.	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MWh) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales).	Y

Bill Code	Title	Business Description	DSS Value
	SCD Basepoint (MW)	Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated over approximately 5 minute time intervals communicated to support generation dispatch.	Y
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval.	Y
	SCD RT Energy Price :Gen ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component).	Y
	SCD RT Loss Price :Gen ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component).	Y
	SCD RT Cong Price :Gen ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component).	Y
	Hr DAM Gen Bid Type Ind	Day Ahead Market Generation Bid Type Indicator is a character representing the type of DAM generation bid submitted by the generator (block or curve).	Y
	Hr DAM Gen Bid Dispatch Seg :Block	Hourly Day Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given DAM generation bid (block generation bid type).	Y
	Hr DAM Gen Bid Dispatch Seg :Curve	Hourly Day Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given DAM generation bid (curve generation bid type).	Y
	Hr DAM Gen Bid :Gen 1 (MW)	Day Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 2 (MW)	Day Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y

Bill Code	Title	Business Description	DSS Value
	Hr DAM Gen Bid :Gen 3 (MW)	Day Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 4 (MW)	Day Ahead Market Generator Bid Generation #4 is a number representing the amount of generation (MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 5 (MW)	Day Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 6 (MW)	Day Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 1 ($/MW)	Day Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 2 ($/MW)	Day Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 3 ($/MW)	Day Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 4 ($/MW)	Day Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 5 ($/MW)	Day Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 6 ($/MW)	Day Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid Type Ind	Hour Ahead Market Generation Bid Type Indicator is a character representing the type of HAM generation bid submitted by the generator	Y

Bill Code	Title	Business Description	DSS Value
		(block or curve).	
	Hr HAM Gen Bid Dispatch Seg :Block	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given HAM generation bid (block generation bid type).	Y
	Hr HAM Gen Bid Dispatch Seg :Curve	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given HAM generation bid (curve generation bid type).	Y
	Hr HAM Gen Bid :Gen 1 (MW)	Hour Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 2 (MW)	Hour Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 3 (MW)	Hour Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 4 (MW)	Hour Ahead Market Generator Bid Generation #4 is a number representing the amount of generation (MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 5 (MW)	Hour Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 6 (MW)	Hour Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 1 ($/MW)	Hour Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 2 ($/MW)	Hour Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Gen Bid :Price 3 ($/MW)	Hour Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 4 ($/MW)	Hour Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 5 ($/MW)	Hour Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 6 ($/MW)	Hour Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y

1.1.7.4.10.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Sup Sched 10Sync Avail (MWh)	Hourly Supplemental Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Supplemental 10-Minute Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Synchronous Operating Reserves Availability (MW) values.	Y
	SCD DAM Sync LOC Price ($/MW)	SCD DAM Sync LOC Price ($/MW) is a number representing the average cost of energy for the given generator using the Day-Ahead bid curve and the SCD Basepoint.	N
	SCD HAM Sync LOC Price ($/MW)	SCD HAM Sync LOC Price ($/MW) is a number representing the average cost of energy for the given generator using the Hour-Ahead bid curve and the SCD Basepoint.	N
	SCD RT Total Price :Gen ($/MW)	Real-Time Total Price ($/MW) is a number representing the total LBMP price of a generator bus.	Y
	SCD Op Res LOC Price ($/MW)	SCD Operating Reserves Lost Opportunity Costs Price ($/MW) is a number representing the price for Operating Reserves Lost Opportunity Costs per megawatt for the given generator, for the given	Y

Bill Code	Title	Business Description	DSS Value
		SCD-interval.	
	SCD Economic Basepoint (MW)	SCD Economic Basepoint (MW) is a number representing the dispatch basepoint at which a generator would be economically dispatched. This dispatch value does not include any adjustments due to system reliability and/or constraints (out of merit).	Y
	SCD Op Res LOC (MW)	SCD Operating Reserves Lost Opportunity Costs (MW) is a number representing the quantity (in MW) of Operating Reserves Lost Opportunity the given generator had due to being backed down off of its economic dispatch point or blocked from being scheduled to provide market energy in order to provide operating reserves for the given SCD-interval.	Y
	SCD Marg Op Res LOC Price ($/MW)	SCD Marginal Operating Reserves Lost Opportunity Costs Price ($/MW) is a number representing the maximum price for Operating Reserves Lost Opportunity Costs per megawatt across all generators in the given SCD-interval.	N
	SCD Op Res LOC Credit ($)	SCD Operating Reserves Lost Opportunity Costs Credit ($) is a number representing the credit amount for Operating Reserves Lost Opportunity Costs, unadjusted for supply performance, for the given generator, for the given SCD-interval; due to being backed down off of its economic dispatch point or blocked from being scheduled to provide market energy in order to provide operating reserves service.	Y

1.1.7.4.10.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Op Res LOC Stlmnt ($)	SCD Operating Reserves Lost Opportunity Costs Settlement ($) is a number representing the settlement amount for Operating Reserves Lost Opportunity Costs, adjusted for supply performance, for the given generator, for the given SCD-interval; due to either being backed down off of its economic dispatch point or blocked from being scheduled to provide market energy in order to provide operating reserves service.	Y

1.1.7.4.10.3 Eligibility

Generators will receive a payment for Synchronous Reserve Lost Opportunity Cost ($) if all of the following conditions exist:

- The generator is not under-generating in the given interval:

  SCD Gen Adjusted Energy (MW) >= SCD Basepoint (MW)

- The generator is scheduled in the DAM and/or Supplemental Synchronous Reserve Market in the given interval:

  (Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh)) > 0

  Where Hr Sup Sched 10Sync Avail (MWh) =

  Max{Hr HAM Sched 10Sync Avail (MWh) - Hr DAM Sched 10Sync Avail (MWh), 0}

- The generator is dispatched in the energy markets at its highest possible output level, defined as its upper operating limit minus its total Synchronous Reserve schedule:

  SCD Basepoint (MW) = SCD Gen Upper Op Limit (MW) - {Hr DAM Sched 10Sync Avail (MWh) + Hr Sup Sched 10Sync Avail (MWh)}

- The quantity of Synchronous Reserve Lost Opportunity Cost (MW) blocked in the scheduling process is greater than zero.

  SCD Op Res LOC (MW) > 0

1.1.7.4.10.4 Algorithm

SCD Op Res LOC Stlmnt ($) is calculated as:

SCD Op Res LOC Stlmnt ($) = SCD Op Res LOC Credit ($) * Day Op Res Avg Supply Perf Ratio

SCD Op Res LOC Credit ($) = SCD Op Res LOC (MW) * SCD Op Res LOC Price ($/MW) * {SCD Interval Seconds ÷ 3,600 Seconds}

NOTE: Prior to 11/08/2000, this settlement was determined using the marginal (maximum across all generators in the interval) SCD Op Res LOC Price ($/MW), vs. using each individual generator's SCD Op Res LOC Price ($/MW). Therefore:

SCD Op Res LOC Credit ($) = SCD Op Res LOC (MW) * SCD Marg Op Res LOC Price ($/MW) * {SCD Interval Seconds ÷ 3,600 Seconds}

Where SCD Marg Op Res LOC Price ($/MW) is calculated as:

SCD Marg Op Res LOC Price ($/MW) is the maximum SCD Op Res LOC Price ($/MW) across all generators in the SCD-interval meeting the eligibility criteria of this calculation.

Where SCD Op Res LOC (MW) is calculated as:

If generator is Out of Merit for the following reasons: "COMMITED FOR ISO RELIABILITY", "OOM FOR TO LOCAL SECURITY", "COMMITED FOR ISO RESERVES", or "OOM FOR ISO SECURITY".

SCD Op Res LOC (MW) = SCD Economic Basepoint (MW) - Hr DAM Sched Gen (MWh)

Else:

SCD Op Res LOC (MW) = SCD Economic Basepoint (MW) - Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}

Where SCD Economic Basepoint (MW) is calculated as:

SCD Economic Basepoint (MW) is the projected economic energy output level (MW) on the generator's HAM Generation Bid corresponding to the SCD RT Total Price :Gen ($/MW) for the given generator, for the given interval.

Please see Appendix A, Figure 1.2 for more information on how to determine the generation output level (MW) on a given Generation Bid corresponding to a specific price ($/MW).

And SCD Op Res LOC Price ($/MW) is calculated as:

SCD Op Res LOC Price ($/MW) = Max{SCD RT Total Price :Gen ($/MW) - Max{SCD DAM Sync LOC Price ($/MW), SCD HAM Sync LOC Price ($/MW)}, 0}

Where SCD DAM Sync LOC Price ($/MW) and SCD HAM Sync LOC Price ($/MW) are calculated as:

1. SCD DAM Sync LOC Price ($/MW) is the price on the generator's DAM Generation Bid corresponding to their SCD Basepoint (MW) for the given generator, for the given interval.

   NOTE: If Hr DAM Sched 10Sync Avail (MWh) <= 0, SCD DAM Sync LOC Price ($/MW) = 0.~~, and~~

2. SCD HAM Sync LOC Price ($/MW) is the price on the generator's HAM Generation Bid corresponding to their SCD Basepoint (MW) for the given generator, for the given interval.

   Please see Appendix A, Figure 1.1 for more information on how to determine the price ($/MW) on a given Generation Bid corresponding to a specific generation output level (MW).

Where SCD RT Total Price :Gen ($/MW) can be calculated as:

SCD RT Total Price :Gen ($/MW) =

SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)

1.1.7.4.10.5 Additional Information

SCD Op Res LOC (MWh) can be calculated as:

SCD Op Res LOC (MWh) =

SCD Op Res LOC (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

1.1.7.4.10.6 References

The applicability of Synchronous Reserve Lost Opportunity Cost Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff).

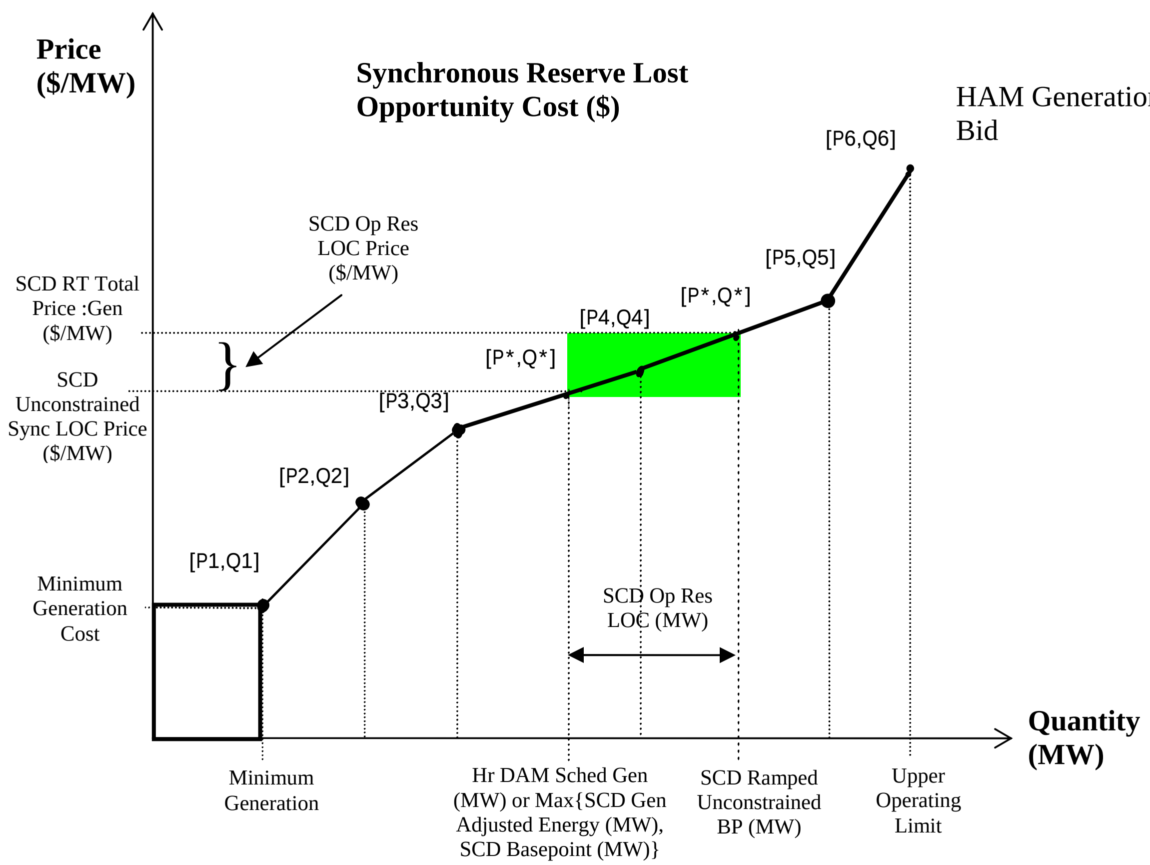
1.1.7.4.11 Synchronous Reserve Lost Opportunity Cost (Backed-Down Generators)

1.1.7.4.11.1 Description

The Synchronous Reserve Lost Opportunity Cost (LOC) for Backed-Down Generators settlement ($) is designed to provide generators with a payment (minus any required adjustment due to non-performance) to offset any lost revenue in the energy markets as a result of being backed down in real-time. The settlement is intended for Power Suppliers who have a portion of their economic energy schedule reduced by NYISO (in real-time) in order to provide un-scheduled reserve service. In this scenario, the generator may be eligible for a lost opportunity cost payment.

This settlement occurs at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each generator, running in real-time on the NYCA grid, but backed down in order to provide Synchronous Reserve Service.

See the below graphical example:



The area highlighted in green represents the generator's SCD Op Res LOC Stlmnt ($). It represents the area between the generator's economic basepoint and its actual basepoint (or corresponding output level), and the difference in prices corresponding to the non-economic dispatch level.

1.1.7.4.11.2 Required Data Elements

1.1.7.4.11.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
5220	Hr Out of Merit Type Desc	Hourly Out of Merit Type Description represents the reason for an out of economic merit dispatch for the given generator and hour.	Y
	Hr Out of Merit Type ID	Hourly Out of Merit Type ID is a number representing the reason for an out of economic merit dispatch for the given generator and hour.	Y
	Hr DAM Sched Gen (MWh)	Day Ahead Scheduled Generation (MWh) is a number representing the amount of generation scheduled by the NYISO for the given generator in the Day Ahead Market (total scheduled for a generator in the DAM, including day-ahead scheduled transactions and NYISO Day-Ahead Market energy sales).	Y
	SCD Basepoint (MW)	Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated over approximately 5 minute time intervals communicated to support generation dispatch.	Y
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y
	SCD Curr SCD Basepoint (MW)	SCD Current SCD Basepoint (MW) is a number representing the SCD basepoint for the current SCD-interval, for the given generator.	Y
	SCD Last SCD Basepoint (MW)	SCD Last SCD Basepoint (MW) is a number representing the SCD basepoint for the SCD-interval that is previous to the given SCD-interval, for the given generator.	Y
	SCD Unconstrained BP (MW)	SCD Unconstrained Basepoint (MW) is a number representing the unconstrained basepoint for the given SCD-interval, for the given generator.	Y

Bill Code	Title	Business Description	DSS Value
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval.	Y
	SCD RT Energy Price :Gen ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component).	Y
	SCD RT Loss Price :Gen ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component).	Y
	SCD RT Cong Price :Gen ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component).	Y
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y
	Hr HAM Gen Bid Type Ind	Hour Ahead Market Generation Bid Type Indicator is a character representing the type of HAM generation bid submitted by the generator (block or curve).	Y
	Hr HAM Gen Bid Dispatch Seg :Block	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given HAM generation bid (block generation bid type).	Y
	Hr HAM Gen Bid Dispatch Seg :Curve	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given HAM generation bid (curve generation bid type).	Y
	Hr HAM Gen Bid :Gen 1 (MW)	Hour Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 2 (MW)	Hour Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 3 (MW)	Hour Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Gen Bid :Gen 4 (MW)	Hour Ahead Market Generator Bid Generation #4 is a number representing the amount of generation (MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 5 (MW)	Hour Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 6 (MW)	Hour Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 1 ($/MW)	Hour Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 2 ($/MW)	Hour Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 3 ($/MW)	Hour Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 4 ($/MW)	Hour Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 5 ($/MW)	Hour Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 6 ($/MW)	Hour Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y

1.1.7.4.11.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	SCD Op Res LOC (MW)	SCD Operating Reserves Lost Opportunity Costs (MW) is a number representing the quantity (in MW) of Operating Reserves Lost Opportunity the given generator had due to being backed down off of its economic dispatch point or blocked from being scheduled to provide market energy in order to provide operating reserves for the given SCD-interval.	Y
	SCD Ramped Unconstrained BP (MW)	SCD Ramped Unconstrained Basepoint (MW) is a number representing the ramped unconstrained basepoint for the given generator, for the given SCD-interval.	Y
	SCD Op Res LOC Price ($/MW)	SCD Operating Reserves Lost Opportunity Costs Price ($/MW) is a number representing the price for Operating Reserves Lost Opportunity Costs per megawatt for the given generator, for the given SCD-interval.	Y
	SCD RT Total Price :Gen ($/MW)	Real-Time Total Price ($/MW) is a number representing the total LBMP price of a generator bus.	Y
	SCD Unconstrained Sync LOC Price ($/MW)	SCD Unconstrained Sync LOC Price ($/MW) is the price on the generator’s HAM bid curve corresponding to their SCD Ramped Unconstrained BP (MW).	N
	SCD Marg Op Res LOC Price ($/MW)	SCD Marginal Operating Reserves Lost Opportunity Costs Price ($/MW) is a number representing the maximum price for Operating Reserves Lost Opportunity Costs per megawatt across all generators in the given SCD-interval.	N
	SCD Op Res LOC Credit ($)	SCD Operating Reserves Lost Opportunity Costs Credit ($) is a number representing the credit amount for Operating Reserves Lost Opportunity Costs, unadjusted for supply performance, for the given generator, for the given SCD-interval; due to being backed down off of its economic dispatch point or blocked from being scheduled to provide market energy in order to provide operating reserves service.	Y

1.1.7.4.11.2.3 Results

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	SCD Op Res LOC Stlmnt ($)	SCD Operating Reserves Lost Opportunity Costs Settlement ($) is a number representing the settlement amount for Operating Reserves Lost Opportunity Costs, adjusted for supply performance, for the given generator, for the given SCD-interval; due to either being backed down off of its economic dispatch point or blocked from being scheduled to provide market energy in order to provide operating reserves service.	Y

1.1.7.4.11.3 Eligibility

Generators will receive a payment for Synchronous Reserve Lost Opportunity Cost for Backed-Down Generators ($) if all of the following conditions exist:

- The actual adjusted generator energy output is less than the unconstrained basepoint for the given SCD-interval, for the given generator.

  SCD Curr SCD Basepoint (MW)~~SCD Gen Adjusted Energy (MW)~~ < SCD Unconstrained BP (MW)

- The quantity of 10-Minute Synchronous Reserve Lost Opportunity Cost (MW) backed down in real-time is greater than zero.

  SCD Op Res LOC (MW) > 0

1.1.7.4.11.4 Algorithm

SCD Op Res LOC Stlmnt ($) is calculated as:

SCD Op Res LOC Stlmnt ($) = SCD Op Res LOC Credit ($) * Day Op Res Avg Supply Perf Ratio

SCD Op Res LOC Credit ($) = SCD Op Res LOC (MW) * SCD Op Res LOC Price ($/MW) * {SCD Interval Seconds ÷ 3,600 Seconds}

NOTE: Prior to 11/08/2000, this settlement was determined using the marginal (maximum across all generators in the interval) SCD Op Res LOC Price ($/MW), vs. using each individual generator's SCD Op Res LOC Price ($/MW). Therefore:

SCD Op Res LOC Credit ($) = SCD Op Res LOC (MW) * SCD Marg Op Res LOC Price ($/MW) * {SCD Interval Seconds ÷ 3,600 Seconds}

Where SCD Marg Op Res LOC Price ($/MW) is calculated as:

SCD Marg Op Res LOC Price ($/MW) is the maximum SCD Op Res LOC Price ($/MW) across all generators in the SCD-interval meeting the eligibility criteria of this calculation.

Where SCD Op Res LOC (MW) is calculated as:

If generator is Out of Merit for the following reasons: “COMMITED FOR ISO RELIABILITY”, “OOM FOR TO LOCAL SECURITY”, “COMMITED FOR ISO RESERVES”, or “OOM FOR ISO SECURITY”.

SCD Op Res LOC (MW) =

SCD Ramped Unconstrained BP (MW) - Hr DAM Sched Gen (MWh)

Else:

SCD Op Res LOC (MW) =

SCD Ramped Unconstrained BP (MW) - Max{SCD Gen Adjusted Energy (MW), SCD Basepoint (MW)}

SCD Ramped Unconstrained BP (MW) is calculated as:

If the current SCD dispatch interval is > 5 minutes in length (SCD Interval Seconds > 300 Seconds):

SCD Ramped Unconstrained BP (MW) =

{{SCD Unconstrained BP (MW) + SCD Last SCD Basepoint (MW)} ÷ 2} * {300 Seconds ÷ SCD Interval Seconds} +

{SCD Unconstrained BP (MW) * {{SCD Interval Seconds - 300 Seconds} ÷ SCD Interval Seconds}}

Else:

SCD Ramped Unconstrained BP (MW) =

SCD Last SCD Basepoint (MW) +

{{SCD Unconstrained BP (MW) - SCD Last SCD Basepoint (MW)} ÷ 2} * {SCD Interval Seconds ÷ 300 Seconds}

And SCD Op Res LOC Price ($/MW) is calculated as:

SCD Op Res LOC Price ($/MW) =

Max{SCD RT Total Price :Gen ($/MW) - SCD Unconstrained Sync LOC Price ($/MW), 0}

Where SCD Unconstrained Sync LOC Price ($/MW) is calculated as:

SCD Unconstrained Sync LOC Price ($/MW) is the price ($/MW) on the generator’s HAM Generation Bid corresponding to their SCD Ramped Unconstrained BP (MW) for the given generator, for the given interval.

Please see Appendix A, Figure 1.1 for more information on how to determine the price ($/MW) on a given Generation Bid corresponding to a specific generation output level (MW).

Where SCD RT Total Price :Gen ($/MW) is calculated as:

SCD RT Total Price :Gen ($/MW) =

SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)

1.1.7.4.11.5 Additional Information

SCD Op Res LOC (MWh) can be calculated as:

SCD Op Res LOC (MWh) =

SCD Op Res LOC (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

1.1.7.4.11.6 References

The applicability of Synchronous Reserve Lost Opportunity Cost Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff).

1.1.7.4.12 10-Minute Non-Synchronous Reserve Lost Opportunity Cost (LOC)

1.1.7.4.12.1 Description

The 10-Minute Non-Synchronous Lost Opportunity Cost (LOC) settlement is a LOC payment to a Power Supplier to help recover the revenue lost due to not selling energy into the Day-Ahead or Balancing Energy Markets. The 10-Minute Non-Synchronous Lost Opportunity Cost (LOC) settlement ($) is intended for Power Suppliers who's generators are prevented (by NYISO) from participating in the NYISO energy markets (Day-Ahead or Balancing Energy Markets) in order to be held for participation in NYISO's 10-Minute Non-Synchronous Operating Reserve Market.

The LOC payment is the amount of energy bid production cost bid by the generator for the given interval, including minimum generation costs and the incremental costs up to the expected basepoint where the generator would have been economically dispatched. This settlement occurs hourly (Day-Ahead Market only) or at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each generator held non-synchronous to the power grid in order to participate in the NYISO 10-Minute Non-Synchronous Operating Reserve Market.

There is one main scenario which causes 10-Minute Non-Synchronous Lost Opportunity Cost:

1. A result of the generator not being dispatched in the energy markets (SCD Basepoint (MW) =0) and the generator is scheduled for 10-Minute Non-Synchronous Reserve (MW) (DAM and/or HAM 10-Minute Non-Synchronous Reserve Availability (MW) total to be > 0).

1.1.7.4.12.2 Required Data Elements

1.1.7.4.12.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Price :Gen ($/MW)	Hourly Day Ahead Market Energy Price - Generator ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component), for the given hour.	Y
	Hr DAM Loss Price :Gen ($/MW)	Hourly Day Ahead Market Loss Price - Generator ($/MW) is a number representing the price of losses at a generator bus (LBMP loss component),	Y

Bill Code	Title	Business Description	DSS Value
		for the given hour.	
	Hr DAM Cong Price :Gen ($/MW)	Hourly Day Ahead Market Congestion Price - Generator ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component), for the given hour.	Y
	SCD RT Energy Price :Gen ($/MW)	SCD Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component), for the given SCD-interval.	Y
	SCD RT Loss Price :Gen ($/MW)	SCD Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component), for the given SCD-interval.	Y
	SCD RT Cong Price :Gen ($/MW)	SCD Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component), for the given SCD-interval.	Y
	SCD Gen Upper Op Limit (MW)	SCD Generator Uper Operating Limit (MW) is a number indicating the maximum operating capacity for a generator during the given period.	Y
	SCD Basepoint (MW)	Security Constrained Dispatch Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO during the real-time dispatch for the generator; calculated over approximately 5 minute time intervals communicated to support generation dispatch	Y
	Hr DAM Sched 10NSync Avail (MW)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MW) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MW)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MW) is a number representing the amount of Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr Max Unused 10NSync Avail (MW)	Hourly Maximum Unused 10-Minute Non-Synchronous Operating Reserves Availability (MW) is a number representing the maximum unused 10-Minute Non-Synchronous Operating Reserves Availability (MW) for the given hour.	Y

Bill Code	Title	Business Description	DSS Value
	Day Op Res Avg Supply Perf Ratio	Daily Operating Reserves Average Supply Performance Ratio is a number representing the average of the SCD-level operating reserves supply ratios for the given generator, for the given day. It is a measure of how closely the generator followed Operating Reserve dispatch instructions over the day. This daily value is stored for each hour of the day.	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y
	Hr DAM Gen Bid Type Ind	Day Ahead Market Generation Bid Type Indicator is a character representing the type of DAM generation bid submitted by the generator (block or curve).	Y
	Hr DAM Gen Bid Dispatch Seg :Curve	Hourly Day Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given DAM generation bid (curve generation bid type).	Y
	Hr DAM Gen Bid Dispatch Seg :Block	Hourly Day Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given DAM generation bid (block generation bid type).	Y
	Hr DAM Gen Bid :Price 1 ($/MW)	Day Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 2 ($/MW)	Day Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 3 ($/MW)	Day Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 4 ($/MW)	Day Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 5 ($/MW)	Day Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y

Bill Code	Title	Business Description	DSS Value
	Hr DAM Gen Bid :Price 6 ($/MW)	Day Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 1 (MW)	Day Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 2 (MW)	Day Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 3 (MW)	Day Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 4 (MW)	Day Ahead Market Generator Bid Generation #4 is a number representing the amount of generation (MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 5 (MW)	Day Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 6 (MW)	Day Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Min Gen (MW)	Day Ahead Market Generator Bid Minimum Generation is a number representing the minimum generation level (MW) for the generator during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid Type Ind	Hour Ahead Market Generation Bid Type Indicator is a character representing the type of HAM generation bid submitted by the generator (block or curve).	Y
	Hr HAM Gen Bid Dispatch Seg :Curve	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given HAM generation bid (curve generation bid type).	Y
	Hr HAM Gen Bid Dispatch Seg :Block	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given	Y

Bill Code	Title	Business Description	DSS Value
		HAM generation bid (block generation bid type).	
	Hr HAM Gen Bid :Price 1 ($/MW)	Hour Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 2 ($/MW)	Hour Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 3 ($/MW)	Hour Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 4 ($/MW)	Hour Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 5 ($/MW)	Hour Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 6 ($/MW)	Hour Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 1 (MW)	Hour Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 2 (MW)	Hour Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 3 (MW)	Hour Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 4 (MW)	Hour Ahead Market Generator Bid Generation #4 is a number representing the amount of generation (MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Gen Bid :Gen 5 (MW)	Hour Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 6 (MW)	Hour Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Min Gen (MW)	Hour Ahead Market Generator Bid Minimum Generation is a number representing the minimum generation level (MW) for the generator during the interval, submitted by the Generator in a generation bid.	Y

1.1.7.4.12.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Sup Sched 10NSync Avail (MW)	Hourly Supplemental Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MW) is a number representing the amount of Supplemental 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour. This is the net difference between HAM and DAM 10-Minute Non-Synchronous Operating Reserves Availability (MW) values.	Y
203	Hr DAM Total Price :Gen ($/MW)	Hourly Day Ahead Market Total Price - Generator ($/MW) is a number that represents the total DAM LBMP price at a generator bus, for the given hour.	Y
	SCD RT Total Price :Gen ($/MW)	SCD Real-Time Total Price ($/MW) is a number representing the total LBMP price of a generator bus, for the given SCD-interval.	Y
	Hr DAM 10NSync LOC Cred ($)	Hourly Day Ahead Market 10-Minute Non-Synchronous Reserves Lost Opportunity Cost Credit ($) is a number representing the Day Ahead Market 10-Minute Non-Synchronous Lost Opportunity Cost Service Credit, unadjusted for supply performance, for the given generator, for the given SCD-interval.	Y
	Hr DAM 10NSync LOC (MW)	Hourly Day Ahead Market 10-Minute Non-Synchronous Reserves Lost Opportunity Cost (MW) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Lost Opportunity Cost MWs the given generator had for	Y

Bill Code	Title	Business Description	DSS Value
		the given SCD-interval.	
	Hr DAM 10NSync LOC Price ($/MW)	Hourly Day Ahead Market 10-Minute Non-Synchronous Reserves Lost Opportunity Cost Price ($/MW) is a number representing the price of Day Ahead Market 10-Minute Non-Synchronous Lost Opportunity Cost service for the given SCD-interval.	Y
	SCD BalMkt 10NSync LOC Cred ($)	SCD Balancing Market 10-Minute Non-Synchronous Reserves Lost Opportunity Cost Credit ($) is a number representing the Balancing Market 10-Minute Non-Synchronous Lost Opportunity Cost Service Credit, unadjusted for supply performance, for the given generator, for the given SCD-interval.	Y
	SCD BalMkt 10NSync LOC (MW)	SCD Balancing Market 10-Minute Non-Synchronous Reserves Lost Opportunity Cost (MW) is a number representing the amount of Balancing Market 10-Minute Non-Synchronous Lost Opportunity Cost MWs the given generator had for the given SCD-interval.	Y
	SCD RT 10NSync LOC Price ($/MW)	SCD Real-Time 10-Minute Non-Synchronous Reserves Lost Opportunity Cost Market Clearing Price ($/MW) is a number representing the price of Real-Time 10-Minute Non-Synchronous Lost Opportunity Cost Service for the given generator, for the given SCD-interval.	Y
	SCD Adj 10NSync LOC Cred ($)	SCD Adjusted 10-Minute Non-Synchronous Operating Reserves Lost Opportunity Cost Credit ($) is a number representing the 10-Minute Non-Synchronous Operating Reserves Lost Opportunity Cost Credit, adjusted for usage, but unadjusted for supply performance, for the given generator, for the given SCD-interval.	Y
	SCD Unadj 10NSync LOC Cred ($)	SCD Unadjusted 10-Minute Non-Synchronous Reserves Lost Opportunity Cost Credit ($) is a number representing the 10-Minute Non-Synchronous Lost Opportunity Cost Service Credit, unadjusted for supply performance, for the given generator, for the given SCD-interval.	Y
	SCD 10NSync LOC (MW)	SCD 10 Minute Non-Synchronous Reserves Lost Opportunity Cost (MW) is a number representing the amount of 10-Minute Non-Synchronous Lost Opportunity Cost MWs the given generator had for the given SCD-interval.	Y

Bill Code	Title	Business Description	DSS Value
	SCD 10NonSync LOC Scale Factor	SCD 10 Minute Non-Synchronous Operating Reserves Lost Opportunity Cost Scale Factor is a number representing the scale factor used to determine 10 Minute Non-Synchronous Lost Opportunity Cost credits.	N
	SCD Unused 10NonSync (MW)	SCD Unused 10 Minute Non-Synchronous Operating Reserves is a number representing the amount of 10 Minute Non-Synchronous Operating Reserves that was not used during the interval, for the given generator.	N

1.1.7.4.12.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Adj 10NSync LOC Stlmnt ($)	SCD Adjusted 10-Minute Non-Synchronous Operating Reserves Lost Opportunity Cost Settlement ($) is a number representing the 10-Minute Non-Synchronous Operating Reserves Lost Opportunity Cost, adjusted for usage and supply performance, for the given generator, for the given SCD-interval.	Y

1.1.7.4.12.3 Eligibility

Generators will receive a payment for 10-Minute Non-Synchronous Reserve Lost Opportunity Cost ($) if all of the following conditions exist:

- The generator is non-synchronous to the grid (SCD Basepoint (MW) = 0).
- The generator has been scheduled in either the DAM or HAM 10-Minute Synchronous Reserve Markets (Hr DAM Sched 10NSync Avail (MW) and/or Hr HAM Sched 10NSync Avail (MW) > 0).

The following are scenarios for which 10-Minute Non-Synchronous Lost Opportunity Cost ($) does not apply:

- The 10-Minute Non-Synchronous Reserve LOC ($) settlement does no apply prior to May 30, 2000.
- The GILBOA generators are not qualified to receive a 10-Minute Non-Synchronous Lost Opportunity Cost (LOC) adjustment.

1.1.7.4.12.4 Settlement Algorithm

SCD Adj 10NSync LOC Stlmnt ($) is calculated as:

SCD Adj 10NSync LOC Stlmnt ($) = SCD Adj 10NSync LOC Cred ($) * Day Op Res Avg Supply Perf Ratio

An adjustment is made to the 10-Minute Non-Synchronous Reserve LOC Credit ($) if the determined amount of 10-Minute Non-Synchronous Reserve LOC (MW) exceeds the generator's total 10-Minute Non-Synchronous Reserve Availability (MW) schedules (SCD 10NSync LOC (MW) - {Hr DAM Sched 10NSync Avail (MW) + Hr Sup Sched 10NSync Avail (MW)} > 0), as follows:

SCD Adj 10NSync LOC Cred ($) =

SCD Unadj 10NSync LOC Cred ($) *

[[{Hr DAM Sched 10NSync Avail (MW) + Hr Sup Sched 10NSync Avail (MW)} + [{SCD 10NSync LOC (MW) - {Hr DAM Sched 10NSync Avail (MW) + Hr Sup Sched 10NSync Avail (MW)}} * SCD 10NonSync LOC Scale Factor]] ÷ SCD 10NSync LOC (MW)]

Otherwise, no adjustment is made, and:

SCD Adj 10NSync LOC Cred ($) = SCD Unadj 10NSync LOC Cred ($)

NOTE: The above adjustment in not applicable to the Gilboa generators, so:

SCD Adj 10NSync LOC Cred ($) = SCD Unadj 10NSync LOC Cred ($)

Where the SCD 10NonSync LOC Scale Factor is calculated as:

If SCD Unused 10NonSync (MW) > Hr Max Unused 10NSync Avail (MW) and SCD Unused 10NonSync (MW) <> 0, then:

SCD 10NonSync LOC Scale Factor =

Hr Max Unused 10NSync Avail (MW) ÷ SCD Unused 10NonSync (MW)

Otherwise:

SCD 10NonSync LOC Scale Factor = 1.

SCD Unused 10NonSync (MW) is calculated as:

SCD Unused 10NonSync (MW) =

SCD 10NSync LOC (MW) - {Hr DAM Sched 10NSync Avail (MW) + Hr Sup Sched 10NSync Avail (MW)}

SCD Unadj 10NSync LOC Cred ($) is calculated as:

If the generator was scheduled only in the DAM, the 10-Minute Non-Synchronous Reserve LOC settlement will use the values calculated from the DAM {Hr DAM Sched 10NSync Avail (MW) > 0 & Hr Sup Sched 10NSync Avail (MW) = 0}:

SCD Unadj 10NSync LOC Cred ($) = Hr DAM 10NSync LOC Cred ($) * {SCD Interval Seconds ÷ 3,600}

SCD 10NSync LOC (MW) = Hr DAM 10NSync LOC (MW)

Otherwise, if the generator was scheduled only in the HAM as supplemental reserve, the 10-Minute Non-Synchronous Reserve LOC settlement will use the values calculated from real-time/balancing market {Hr DAM Sched 10NSync Avail (MW) = 0 & Hr Sup Sched 10NSync Avail (MW) > 0}:

SCD Unadj 10NSync LOC Cred ($) = SCD BalMkt 10NSync LOC Cred ($) * {SCD Interval Seconds ÷ 3,600}

SCD 10NSync LOC (MW) = SCD BalMkt 10NSync LOC (MW)

And lastly, if the generator is scheduled in both the DAM and in the HAM as supplemental reserve, the 10-Minute Non-Synchronous Reserve LOC settlement will use the greater of the values calculated from the DAM and the real-time/balancing market {Hr DAM Sched 10NSync Avail (MW) > 0 & Hr Sup Sched 10NSync Avail (MW) > 0}:

SCD Unadj 10NSync LOC Cred ($) = Max{SCD BalMkt 10NSync LOC Cred ($), Hr DAM 10NSync LOC Cred ($)} * {SCD Interval Seconds ÷ 3,600}

SCD 10NSync LOC (MW) = SCD BalMkt 10NSync LOC (MW) or Hr DAM 10NSync LOC (MW) corresponding to the above SCD Unadj 10NSync LOC Cred ($)

Hr DAM 10NSync LOC Cred ($) is calculated as:

If the generator was scheduled in the DAM (Hr DAM Sched 10NSync Avail (MW) > 0), then:

NOTE: Effective November 8, 2000, NYISO changed the method used to calculate the DAM 10NSync LOC Cred ($). After this date, it is calculated as follows (see below for the method prior to this date):

Hr DAM 10NSync LOC Cred ($) =

{Hr DAM Total Price :Gen ($/MW) - Hr DAM 10NSync LOC Price ($/MW)} * Hr DAM 10NSync LOC (MW)

Hr DAM 10NSync LOC Price ($/MW) is the determination of the cost under the DAM Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to Hr DAM 10NSync LOC (MW), divided by Hr DAM 10NSync LOC (MW).

Hr DAM 10NSync LOC (MW) is the expected output level (MW) for the generator at the Hr DAM Total Price :Gen ($/MW) using the DAM Generation Bid.

However, if Hr DAM 10NSync LOC Cred ($) <= 0 (from above), then it will be determined using the SCD RT Total Price :Gen ($/MW) against both the DAM and HAM Generation Bids.

Hr DAM 10NSync LOC Cred ($) will be calculated as the lesser value determined from either the DAM or HAM Generation Bids, as follows:

Calculate using the DAM Generation Bid:

Hr DAM 10NSync LOC Cred ($) =

{SCD RT Total Price :Gen ($/MW) - Hr DAM 10NSync LOC Price ($/MW)} * Hr DAM 10NSync LOC (MW)

Hr DAM 10NSync LOC Price ($/MW) is the determination of the cost under the DAM Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to Hr DAM 10NSync LOC (MW), divided by Hr DAM 10NSync LOC (MW).

Hr DAM 10NSync LOC (MW) is the expected output level (MW) for the generator at the SCD RT Total Price :Gen ($/MW) using the DAM Generation Bid.

Calculate using the HAM Generation Bid:

Hr DAM 10NSync LOC Cred ($) =

{SCD RT Total Price :Gen ($/MW) - Hr DAM 10NSync LOC Price ($/MW)} * Hr DAM 10NSync LOC (MW)

Hr DAM 10NSync LOC Price ($/MW) is the determination of the cost under the HAM Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to Hr DAM 10NSync LOC (MW), divided by Hr DAM 10NSync LOC (MW).

Hr DAM 10NSync LOC (MW) is the expected output level (MW) for the generator at the SCD RT Total Price :Gen ($/MW) using the HAM Generation Bid.

Prior to November 8, 2000, the Hr DAM 10NSync LOC Cred ($) is calculated as follows:

Hr DAM 10NSync LOC Cred ($) =

{SCD RT Total Price :Gen ($/MW) - Hr DAM 10NSync LOC Price ($/MW)} * Hr DAM 10NSync LOC (MW)

Hr DAM 10NSync LOC Price ($/MW) is the determination of the cost under the DAM Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to Hr DAM 10NSync LOC (MW), divided by Hr DAM 10NSync LOC (MW).

Hr DAM 10NSync LOC (MW) is the expected output level (MW) for the generator at the SCD RT Total Price :Gen ($/MW) using the DAM Generation Bid.

However:

If Hr DAM 10NSync LOC Cred ($) < 0, then:

Hr DAM 10NSync LOC Cred ($) = 0.

If Hr DAM 10NSync LOC Cred ($) > {Hr DAM Total Price :Gen ($/MW) or SCD RT Total Price :Gen ($/MW)} * Hr DAM 10NSync LOC (MW), then:

Hr DAM 10NSync LOC Cred ($) =

{Hr DAM Total Price :Gen ($/MW) or SCD RT Total Price :Gen ($/MW)} * Hr DAM 10NSync LOC (MW)

NOTES:

- Please see Appendix A, Figure 1.4 for more information on how to determine the cost ($) under a given Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to a specific generation output level (MW), divided by the output level (MW).
- Please see Appendix A, Figure 1.2 for more information on how to determine the generation output level (MW) on a given Generation Bid corresponding to a specific price ($/MW).

SCD BalMkt 10NSync LOC Cred ($) is calculated as:

If the generator was scheduled in the HAM as supplemental reserve (Hr Sup Sched 10NSync Avail (MW) > 0), then:

SCD BalMkt 10NSync LOC Cred ($) =

{SCD RT Total Price :Gen ($/MW) - SCD RT 10NSync LOC Price ($/MW)} * SCD BalMkt 10NSync LOC (MW)

SCD RT 10NSync LOC Price ($/MW) is the determination of the cost under the HAM Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to SCD BalMkt 10NSync LOC (MW), divided by SCD BalMkt 10NSync LOC (MW).

SCD BalMkt 10NSync LOC (MW) is the expected output level (MW) for the generator at the SCD RT Total Price :Gen ($/MW) using the HAM Generation Bid.

However:

If SCD BalMkt 10NSync LOC Cred ($) < 0, then:

SCD BalMkt 10NSync LOC Cred ($) = 0.

If SCD BalMkt 10NSync LOC Cred ($) > {SCD RT Total Price :Gen ($/MW) * SCD BalMkt 10NSync LOC (MW)}, then:

SCD BalMkt 10NSync LOC Cred ($) =

SCD RT Total Price :Gen ($/MW) * SCD BalMkt 10NSync LOC (MW)

NOTES:

- Please see Appendix A, Figure 1.4 for more information on how to determine the cost ($) under a given Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to a specific generation output level (MW), divided by the output level (MW).
- Please see Appendix A, Figure 1.2 for more information on how to determine the generation output level (MW) on a given Generation Bid corresponding to a specific price ($/MW).

Other Supporting Calculations:

Hr Sup Sched 10NSync Avail (MW) = Max{Hr HAM Sched 10NSync Avail (MW) - Hr DAM Sched 10NSync Avail (MW), 0}

Hr DAM Total Price :Gen ($/MW) = Hr DAM Energy Price :Gen ($/MW) + Hr DAM Loss Price :Gen ($/MW) - Hr DAM Cong Price :Gen ($/MW)

SCD RT Total Price :Gen ($/MW) = SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)

1.1.7.4.12.5 Additional Information

None

1.1.7.4.12.6 References

The applicability of Non-Synchronous Reserve Lost Opportunity Cost Payments is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff).

1.1.7.4.13 10-Minute Reserve Shortfall Penalty

1.1.7.4.13.1 Description

The 10-Minute Reserve Shortfall Penalty ($) is a charge to Market Participants who are penalized when a given generator fails to meet its instructions during reserve pickup intervals. The settlement is charged to Power Suppliers who have been selected to provide DAM and/or Supplemental 10-Minute Operating Reserve Service (Synchronous or Non-Synchronous) in the NYISO Day Ahead (DAM) or Hour Ahead (HAM) Operating Reserve Markets, respectively.

This settlement is determined using snapshot data acquired approximately 10-minutes after a reserve pickup interval (SCD Next Basepoint (MW) & SCD Next Gen Avg Actual Energy (MW) specifically), and then the resulting charge is applied against the SCD RT Total Price :Gen ($/MW) of the current interval. This is designed so that the SCD RT Total Price :Gen ($/MW) for the given generator at the beginning of the reserve pickup interval is used during the settlement.

It is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each generator scheduled in the NYISO Operating Reserve Markets.

1.1.7.4.13.2 Required Data Elements

1.1.7.4.13.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	SCD Next Basepoint (MW)	SCD Next Basepoint (MW) is a number representing the average amount of energy scheduled by the NYISO for real-time generator dispatch, calculated approximately 10-Minutes after a reserve pickup interval.	N
	SCD Next Gen Avg Actual Energy (MW)	SCD Next Generator Average Actual Energy (MW) is a number representing average actual	N

Bill Code	Title	Business Description	DSS Value
		output of a generator approximately 10-Minutes after a reserve pickup interval. It is the average of the 6-second-level data coming from the NYISO SCADA system.	
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y
	SCD RT Energy Price :Gen ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a generator bus (LBMP energy component)	Y
	SCD RT Loss Price :Gen ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a generator bus (LBMP loss component)	Y
	SCD RT Cong Price :Gen ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a generator bus (LBMP congestion component)	Y
	Hr Next VSS Flag	Hourly Next Voltage Support Service Flag is a character representing whether or not the unit is Out of Merit in order to provide voltage support service approximately 10-Minutes after a reserve pickup interval (values are Y or N).	N
	SCD Reserve Pickup Ind	SCD Reserve Pick Up Indicator is a character which indicates whether the SCD interval was initiated as a reserve pickup.	Y
	Hr DAM Sched 10Sync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10Sync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 10-Minute Synchronous Operating Reserves service the given generator is scheduled to provide for the given hour.	Y
	Hr DAM Sched 10NSync Avail (MWh)	Hourly Day Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 10NSync Avail (MWh)	Hourly Hour Ahead Market Scheduled 10-Minute Non-Synchronous Operating Reserves Availability (MWh) is a number representing the amount of	Y

Bill Code	Title	Business Description	DSS Value
		Hour Ahead Market 10-Minute Non-Synchronous Operating Reserves Service the given generator is scheduled to provide for the given hour.	
	Hr DAM Sched 30Min Avail (MWh)	Hourly Day Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Day Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y
	Hr HAM Sched 30Min Avail (MWh)	Hourly Hour Ahead Market Scheduled 30-Minute Operating Reserves Availability (MWh) is a number representing the amount of Hour Ahead Market 30-Minute Operating Reserves Service the given generator is scheduled to provide for the given hour.	Y

1.1.7.4.13.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD RT Total Price :Gen ($/MW)	Real-Time Total Price ($/MW) is a number representing the total LBMP price of a generator bus	Y
	SCD 10Min Shortfall (MW)	SCD 10-Minute Operating Reserve Shortfall (MW) is a number representing the quantity settlement charges are based upon for a given generator due to underperformance during Operating Reserves pickup periods, for the given SCD-interval.	N

1.1.7.4.13.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD 10Min Shortfall Stlmnt ($)	SCD 10-Minute Operating Reserves Shortfall Settlement ($) is a number representing the settlement amount for charges incurred by the given generator due to underperformance during Operating Reserves pickup periods, for the given SCD-interval.	Y

1.1.7.4.13.3 Eligibility

Generators will be charged a 10-Minute Reserve Shortfall Penalty ($) when:

- The given SCD-interval is a reserve pickup interval (SCD Reserve Pickup Ind = 'Y'), and
- The generator is scheduled in the DAM and/or Supplemental Reserve Markets:
  - Hr DAM Sched 10Sync Avail (MWh) > 0 OR Hr DAM Sched 10NSync Avail (MWh) > 0 OR Hr DAM Sched 30Min Avail (MWh) > 0

    OR
  - Hr HAM Sched 10Sync Avail (MWh) > 0 OR Hr HAM Sched 10NSync Avail (MWh) > 0 OR Hr HAM Sched 30Min Avail (MWh) > 0
- And, when the generator fails to meet its instructions approximately 10-Minutes after being called to provide reserve pickup in the real-time balancing energy market [SCD Next Basepoint (MW) > SCD Next Gen Avg Actual Energy (MW)].

10-Minute Reserve Shortfall Penalty ($) does not apply when:

- The generator will not be charged the 10-Minute Reserve Shortfall Penalty ($) if it is providing Voltage Support Service (Hr Next VSS Flag = "Y") approximately 10-Minutes after a reserve pickup interval.

1.1.7.4.13.4 Settlement Algorithm

SCD 10Min Shortfall Stlmnt ($) is calculated as:

SCD 10Min Shortfall Stlmnt ($) =

SCD 10Min Shortfall (MW) * SCD RT Total Price :Gen ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

If SCD 10Min Shortfall Stlmnt ($) < 0

SCD 10Min Shortfall Stlmnt ($) = 0

Where:

SCD 10Min Shortfall (MW) =

SCD Next Basepoint (MW) - SCD Next Gen Avg Actual Energy (MW)

SCD RT Total Price :Gen ($/MW) =

SCD RT Energy Price :Gen ($/MW) + SCD RT Loss Price :Gen ($/MW) - SCD RT Cong Price :Gen ($/MW)}

NOTES:

- The above settlement is determined using snapshot data taken approximately 10-Minutes following a reserve pickup interval (SCD Next Basepoint (MW) & SCD Next Gen Avg Actual Energy (MW) specifically), and then the resulting charge is applied against the SCD RT Total Price :Gen ($/MW) of the current interval.
- The data snapshot taken approximately 10-Minutes after a reserve pickup interval is not an actual SCD-interval.

- The length of time within SCD Interval Seconds is calculated from the SCD-interval at reserve pickup to the SCD-interval following the data snapshot taken approximately 10-Minutes after a reserve pickup.

1.1.7.4.13.5 Additional Information

None

1.1.7.4.13.6 References

The applicability of 10-Minute Reserve Shortfall Charges is described within Schedule 4 of the MST (Market Administration and Control Area Services Tariff).

1.1.7.5 ICAP

1.1.7.5.1 Auction

1.2 Load Serving Entities

1.2.1 Day-Ahead Market Energy

1.2.1.1 Description

The Load Serving Entity Day Ahead Market (DAM) Energy settlement ($) is intended to charge Load Serving Entities for DAM energy purchased via load schedules in the NYISO DAM.

DAM Load Schedules are New York Control Area (NYCA) purchases of energy by Market Participants (acting as Load Serving Entities) which are scheduled by the NYISO in the DAM. DAM Load Schedules are scheduled in the DAM scheduling process.

The Load Serving Entity DAM Energy settlement is based on the Load Serving Entity's DAM scheduled energy (MW) at a given load bus, multiplied times the three corresponding zonal DAM price ($/MW) components (energy, loss, and congestion). The settlement is determined at the hourly-level for each Load Serving Entity - Load Bus.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Load Serving Entity Settlement for energy purchases from the NYISO DAM.
- *Losses Settlement* - Load Serving Entity Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by energy purchases from the NYISO DAM.
- *Congestion Settlement* - Load Serving Entity Settlement for congestion created/eliminated on the NYCA system by energy purchases from the NYISO DAM.

1.2.1.2 Required Data Elements

1.2.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Price :LSE ($/MW)	Hourly Day Ahead Market Energy Price - Load Serving Entity ($/MW) is a number representing the price of energy at a load bus (LBMP energy component)	Y

	Hr DAM Loss Price :LSE ($/MW)	Hourly Day Ahead Market Loss Price - Load Serving Entity ($/MW) is a number representing the price of losses at a load bus (LBMP energy component)	Y
	Hr DAM Cong Price :LSE ($/MW)	Hourly Day Ahead Market Congestion Price - Load Serving Entity ($/MW) is a number representing the price of congestion at a load bus (LBMP energy component)	Y
	Hr DAM Load Bid :Fix Load (MW)	Day Ahead Market Load Bid Load (MW) is a number representing the amount of fixed load to be procured from the NYISO Day Ahead Market during the interval, submitted by the LSE in a load bid	Y
	Hr DAM Sched PrCap Load (MW)	Day Ahead Market Scheduled Price Capped Load (MW) is a number representing the amount of price capped load scheduled in the Day Ahead Market for the LSE for the interval	Y
	Org Tariff Signed Ind	Organization Tariff Signed Indicator is a character representing whether or not the organization has signed the NYISO Market Services Tariff (MST), and/or the NYISO Open Access Transmission Tariff (OATT)	Y

1.2.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
403	Hr DAM Total Price :LSE ($/MW)	Hourly Day Ahead Market Total Price - Load Serving Entity ($/MW) is a number that represents the total DAM LBMP price at a load bus.	Y
402	Hr DAM Sched Load (MW)	Day Ahead Market Scheduled Load (MW) is a number representing the total amount of load purchased by the LSE from the NYISO Day-Ahead Market. It is the total of the Day-Ahead Fixed Energy Bid (MW), plus any Day-Ahead Scheduled Price Capped Load (MW) for the LSE.	Y
404	Hr DAM Energy Stlmnt :LSE ($)	Day Ahead Market Energy Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a load bus' Day Ahead Market energy component settlement	Y
405	Hr DAM Loss Stlmnt :LSE ($)	Day Ahead Market Loss Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a load bus' Day Ahead Market loss component settlement	Y
406	Hr DAM Cong Stlmnt :LSE ($)	Day Ahead Market Congestion Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a load bus' Day Ahead Market congestion component settlement	Y

1.2.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Total DAM Stlmnt :LSE ($)	Total Day Ahead Market Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a load bus' total Day Ahead Market energy settlement; sum of the DAM energy, loss, and congestion component settlements.	Y

1.2.1.3 Eligibility

Load Serving Entities will be charged for Day Ahead Market (DAM) Energy ($) if:

- The load serving entity's load bus is scheduled to purchase energy (MW) in the NYISO DAM (Hr DAM Sched Load (MW) > 0).

1.2.1.4 Settlement Algorithm

Hr Total DAM Stlmnt :LSE ($) is calculated as:

Hr Total DAM Stlmnt :LSE ($) =

Hr DAM Energy Stlmnt :LSE ($) + Hr DAM Loss Stlmnt :LSE ($) - Hr DAM Cong Stlmnt :LSE ($)

Where:

Hr DAM Energy Stlmnt :LSE ($) =

Hr DAM Sched Load (MW) * Hr DAM Energy Price :LSE ($/MW)

If the given Organization has signed the NYISO Market Administration and Control Area Services Tariff (Org Signed Ind = "MST"):

Hr DAM Loss Stlmnt :LSE ($) =

Hr DAM Sched Load (MW) * Hr DAM Loss Price :LSE ($/MW)

Else (the Organization has signed only the NYISO Open Access Transmission Tariff (OATT)):

If Hr DAM Total Price :LSE ($/MW) * 1.5 > 100

Hr DAM Loss Stlmnt :LSE ($) =

Hr DAM Sched Load (MW) * {(Hr DAM Total Price :LSE ($/MW) * 1.5) - Hr DAM Energy Price :LSE ($/MW) + Hr DAM Cong Price :LSE ($/MW)}

Else

Hr DAM Loss Stlmnt :LSE ($) =

Hr DAM Sched Load (MW) * {100 - Hr DAM Energy Price :LSE ($/MW) + Hr DAM Cong Price :LSE ($/MW)}

Hr DAM Cong Stlmnt :LSE ($) =

Hr DAM Sched Load (MW) * Hr DAM Cong Price :LSE ($/MW)

And Hr DAM Sched Load (MW) is calculated as:

Hr DAM Sched Load (MW) =

Hr DAM Load Bid :Fix Load (MW) + Hr DAM Sched PrCap Load (MW)

And Hr DAM Total Price :LSE ($/MW) is calculated as:

Hr DAM Total Price :LSE ($/MW) =

Hr DAM Energy Price :LSE ($/MW) + Hr DAM Loss Price :LSE ($/MW) - Hr DAM Cong Price :LSE ($/MW)

1.2.1.5 Additional Information

Hr DAM Total Price :LSE ($/MW) can be calculated as:

Hr DAM Total Price :LSE ($/MW) =

Hr DAM Energy Price :LSE ($/MW) + Hr DAM Loss Price :LSE ($/MW) - Hr DAM Cong Price :LSE ($/MW)

1.2.1.6 References

The applicability of Load Serving Entity Day Ahead Market Energy Charges is described within Article 4 (Section 4.16) of the MST (Market Administration and Control Area Services Tariff).

1.2.2 Balancing Market Energy

1.2.2.1 Description

The Load Serving Entity Balancing Market Energy settlement ($) is intended to charge or credit Market Participants (acting as Load Serving Entities) for Balancing Market energy purchased or sold in the NYISO Balancing Energy Market.

Since this settlement addresses energy variations from the DAM, it can be either a credit or a charge to the Load Serving Entity (LSE). The LSE will be charged for balancing market energy in cases where the load bus purchased more energy in Real-Time (RT) than it is purchased in the NYISO Day Ahead Market (DAM) (RT > DAM). Otherwise, the LSE will be credited for balancing market energy in cases where the load bus purchased less energy in Real-Time (RT) than it is purchased in the NYISO Day Ahead Market (DAM) (RT < DAM).

The Load Serving Entity Balancing Market Energy settlement is based on the Load Serving Entity's Real-Time actual load minus its DAM Scheduled Load (MW), minus its corresponding Real-Time Scheduled Transactions at a given load bus, multiplied times the three corresponding zonal Real-Time price ($/MW) components (energy, loss, and congestion). The settlement is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Load Serving Entity - Load Bus where Balancing Market Energy is not equal to zero.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Load Serving Entity Settlement for energy purchased from or sold to the NYISO Balancing Energy Market.
- *Losses Settlement* - Load Serving Entity Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by energy purchases/sales in the NYISO Balancing Energy Market.
- *Congestion Settlement* - Load Serving Entity Settlement for congestion created/eliminated on the NYCA system by energy purchases/sales in the NYISO Balancing Energy Market.

1.2.2.2 Required Data Elements

1.2.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	SCD RT Actual Load (MW)	Real Time Actual Load (MW) is a number representing the total real-time actual load for a given load bus for a given SCD interval	Y
402	Hr DAM Sched Load (MW)	Day Ahead Market Scheduled Load (MW) is a number representing the total amount of load purchased by the LSE from the NYISO Day-Ahead Market. It is the total of the Day-Ahead Fixed Energy Bid (MW), plus any Day-Ahead Scheduled Price Capped Load (MW) for the LSE.	Y
	SCD RT Sched Trans :Load Bus (MW)	Real-Time Scheduled Transaction (MW) is a number representing the total amount of transaction energy for all transactions scheduled for an SCD interval, withdrawn at a given load bus.	Y
	SCD RT Energy Price :LSE ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a load bus (LBMP energy component)	Y
	SCD RT Loss Price :LSE ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a load bus (LBMP loss component)	Y
	SCD RT Cong Price :LSE ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a load bus (LBMP congestion component)	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.2.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt Load :LSE (MW)	Balancing Mkt Load - LSE (MW) is a number representing the amount of load settled in the Balancing Market for a given load bus, for the SCD interval.	Y

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt Energy Stlmnt :LSE ($)	Balancing Market Energy Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a LSE's balancing energy market energy component settlement	Y
	SCD BalMkt Loss Stlmnt :LSE ($)	Balancing Market Loss Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a LSE's balancing energy market loss component settlement	Y
	SCD BalMkt Cong Stlmnt :LSE ($)	Balancing Market Congestion Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a LSE's balancing energy market congestion component settlement	Y

1.2.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt Stlmnt :LSE ($)	Total Balancing Market Settlement - Load Serving Entity ($) is a number representing the BAS-determined amount of a LSE's total balancing energy market settlement; sum of the balancing energy market energy, loss, and congestion component settlements	Y

1.2.2.3 Eligibility

Load Serving Entities will be charged for Balancing Market Energy ($) if:

- The Load Serving Entity's Load Bus purchases balancing market energy (MW) from the NYISO Balancing Energy Market (SCD BalMkt Load :LSE (MW) > 0).

Load Serving Entities will be credited for Balancing Market Energy ($) if:

- The Load Serving Entity's Load Bus sells balancing market energy (MW) to the NYISO Balancing Energy Market (SCD BalMkt Load :LSE (MW) < 0).

1.2.2.4 Settlement Algorithm

SCD Total BalMkt Stlmnt :LSE ($) is calculated as:

SCD Total BalMkt Stlmnt :LSE ($) =

SCD BalMkt Energy Stlmnt :LSE ($) + SCD BalMkt Loss Stlmnt :LSE ($) - SCD BalMkt Cong Stlmnt :LSE ($)

Where:

SCD BalMkt Energy Stlmnt :LSE ($) =

SCD BalMkt Load :LSE (MW) * SCD RT Energy Price :LSE ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}[6]

SCD BalMkt Loss Stlmnt :LSE ($) =

SCD BalMkt Load :LSE (MW) * SCD RT Loss Price :LSE ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

SCD BalMkt Cong Stlmnt :LSE ($) =

SCD BalMkt Load :LSE (MW) * SCD RT Cong Price :LSE ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

And SCD BalMkt Load :LSE (MW) is calculated as:

SCD BalMkt Load :LSE (MW) =

[SCD RT Actual Load (MW) - Hr DAM Sched Load (MW) - SCD RT Sched Trans :Load Bus (MW)]

1.2.2.5 Additional Information

SCD RT Actual Load (MW) Determination:

Please see Appendix A, Figure 1.5 for more information on how a load bus' real-time actual load (MW) is determined.

Determination of SCD BalMkt Load :LSE (MW) for Gilboa's Load Bus for Pumping Station Load:

The amount of balancing market energy (MW) for Gilboa's load bus for pumping station load is by definition always zero:

SCD BalMkt Load :LSE (MW) = 0.

SCD RT Total Price :LSE ($/MW) can also be calculated as:

SCD RT Total Price :LSE ($/MW) =

SCD RT Energy Price :LSE ($/MW) + SCD RT Loss Price :LSE ($/MW) - SCD RT Cong Price :LSE ($/MW)

SCD BalMkt Load :LSE (MWh) can also be calculated as:

SCD BalMkt Load :LSE (MWh) =

SCD BalMkt Load :LSE (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

1.2.2.6 References

[6] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

The applicability of Load Serving Entity Balancing Market Energy Charges or Payments is described within Article 4 (Section 4.18) of the MST (Market Administration and Control Area Services Tariff).

1.2.3 Ancillary Services

1.2.3.1 Ancillary Services

1.2.3.1.1 Load Serving Entity Ancillary Services - MST Schedule 1 (S, SC, & D)

1.2.3.1.1.1 Description

The Load Serving Entity (LSE) Market Administration and Control Services Tariff (MST) Schedule 1 - Scheduling, System Control, and Dispatch (S, SC, & D) settlement ($) is intended to recover a portion of NYISO's operating costs from Load Serving Entities.

NYISO operates the New York Control Area (NYCA) and its markets using two key tariffs: the Market Administration and Control Services Tariff (MST) and the Open Access Transmission Tariff (OATT). The MST defines the market requirements, rules, and procedures for Market Participants participating in the NYISO administered energy and ancillary service markets (i.e. DAM, HAM, RT, etc.). The OATT defines the regulations, requirements, and procedures for Market Participants in order to obtain access to the NYISO controlled NYCA transmission network.

All of NYISO operating costs for scheduling, system control, and dispatch (S, SC &D) are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) (exports and wheel-throughs only) through charges under Schedule 1. The estimated annual NYISO operating costs are determined, then a MST Schedule 1 Rate ($/MW) is determined using estimated load. This rate is then used over the year to recover the estimated annual NYSIO operating costs.

Market Participants acting as a LSE that have signed the MST will be charged a portion of the total estimated annual NYISO operating costs based on their actual real-time load consumption. It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.1.1.2 Required Data Elements

1.2.3.1.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
607	Hr MST Sched 1 Rate ($/MW)	Hourly Market Administration and Control Area Services Tariff Schedule 1 Rate ($/MW) is a number representing the Market Administration and Control Area Services Tariff Schedule 1 costs. Schedule 1 of the MST covers MST customers' share of NYISO service charges.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Org Tariff Signed Ind	Organization Tariff Signed Indicator is a character representing whether or not the organization has signed the NYISO Market Services Tariff (MST), and/or the NYISO Open Access Transmission Tariff (OATT)	Y

1.2.3.1.1.2.2 Intermediates

None

1.2.3.1.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr MST Sched 1 Stlmnt :LSE ($)	Hourly Market Administration and Control Area Services Tariff Schedules 1 Settlement - Load Serving Entity ($) is a number representing the settlement for NYISO services charges for the LSE under Schedule 1 of the NYISO MST for the given hour.	Y

1.2.3.1.1.3 Eligibility

Load Serving Entities will receive a charge for MST Schedule 1 ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

1.2.3.1.1.4 Settlement Algorithm

Hr MST Sched 1 Stlmnt :LSE ($) is calculated as:

If the Market Participant Organization has signed the NYISO Market Administration and Control Services Tariff (Org Tariff Signed Ind = “MST”):

Hr MST Sched 1 Stlmnt :LSE ($) =

Hr MST Sched 1 Rate ($/MW) * Hr RT LSE Load (MWh)

1.2.3.1.1.5 Additional Information

On 09/01/2000, NYISO implemented a change to the allocation (50%-50%) of the Schedule 1 charges across Market Participants who have signed the MST and/or OATT.

- Prior to this date, Market Participants that had signed only the OATT were charged only the OATT Schedule 1 Charge ($) (MST Schedule 1 Charge ($) = 0). Market Participants that signed both the MST and OATT were charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($).
- After this date, Market Participants are charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($) according to the allocation (50%-50%) of charges for those signing the MST (automatically signed for the OATT). For those participants signing just the OATT, only the OATT Schedule 1 Charge ($) is charged according to the allocation (50%-50%) of charges.

85% / 15% Split of MST and OATT Schedule 1 Charges ($):

- Currently, 100% of the MST and OATT Schedule 1 Charges ($) are allocated to those Market Participants serving load (Load Serving Entities and Transaction Customers with respect to Bilateral/Market Energy Export and Wheel-Through Transactions). In the future, only 85% of these Schedule 1 charges will be allocated to those serving load, and the remaining 15% will be allocated to those Market Participants supplying energy.

1.2.3.1.1.6 References

The applicability of Load Serving Entity Ancillary Services - MST Schedule 1 (S, SC, & D) charges is described within Schedule 1 of the MST (Market Administration and Control Area Services Tariff).

1.2.3.1.2 Load Serving Entity Ancillary Services - OATT Schedule 1 (S, SC, & D)

1.2.3.1.2.1 Description

The Load Serving Entity (LSE) Open Access Transmission Tariff (OATT) Schedule 1 - Scheduling, System Control, and Dispatch (S, SC, & D) settlement ($) is intended to recover a portion of NYISO's operating costs from Load Serving Entities.

NYISO operates the New York Control Area (NYCA) and its markets using two key tariffs: the Market Administration and Control Services Tariff (MST) and the Open Access Transmission Tariff (OATT). The MST defines the market requirements, rules, and procedures for Market Participants participating in the NYISO administered energy and ancillary service markets (i.e. DAM, HAM, RT, etc.). The OATT defines the regulations, requirements, and procedures for Market Participants in order to obtain access to the NYISO controlled NYCA transmission network.

All of NYISO operating costs for scheduling, system control, and dispatch (S, SC &D) are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) (exports and wheel-throughs only) through charges under Schedule 1. The estimated annual NYISO operating costs are determined, then an OATT Schedule 1 Rate ($/MW) is determined using estimated load. This rate is then used over the year to recover the estimated annual NYSIO operating costs.

Market Participants acting as a LSE that have signed the OATT will be charged a portion of the total estimated annual NYISO operating costs based on their actual real-time load consumption. It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.1.2.2 Required Data Elements

1.2.3.1.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
614	Hr OATT Sched 1 Rate ($/MW)	Hourly Open Acess Transmission Tariff Schedule 1 Rate ($/MW) is a number representing the Open Access Transmission Tariff Schedule 1 cost. Schedule 1 of the OATT covers OATT customers' share of NYISO Schedule, System Control, and Dispatch Service charges and is paid by all organizations that have signed the OATT.	Y

	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Org Tariff Signed Ind	Organization Tariff Signed Indicator is a character representing whether or not the organization has signed the NYISO Market Services Tariff (MST), and/or the NYISO Open Access Transmission Tariff (OATT)	Y

1.2.3.1.2.2.2 Intermediates

None

1.2.3.1.2.2.3 Results

Bill Code	**Title**	**Business Description**	**DSS Value**
	Hr OATT Sched 1 Stlmnt :LSE ($)	Hourly Open Access Transmission Tariff Schedule 1 Settlement - Load Serving Entity ($) is a number representing the settlement for Scheduling, System Control, and Dispatch Service Charges for the LSE under Schedule 1 of the NYISO OATT for the given hour.	Y

1.2.3.1.2.3 Eligibility

Load Serving Entities will receive a charge for OATT Schedule 1 ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

1.2.3.1.2.4 Settlement Algorithm

Hr OATT Sched 1 Stlmnt :LSE ($) is calculated as:

If the Market Participant Organization has signed the NYISO Open Access Transmission Tariff (Org Tariff Signed Ind = “OAT”):

Hr OATT Sched 1 Stlmnt :LSE ($) =

Hr OATT Sched 1 Rate ($/MW) * Hr RT LSE Load (MWh)

1.2.3.1.2.5 Additional Information

On 09/01/2000, NYISO implemented a change to the allocation (50%-50%) of the Schedule 1 charges across Market Participants who have signed the MST and/or OATT.

- Prior to this date, Market Participants that had signed only the OATT were charged only the OATT Schedule 1 Charge ($) (MST Schedule 1 Charge ($) = 0). Market Participants that signed both the MST and OATT were charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($).
- After this date, Market Participants are charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($) according to the allocation (50%-50%) of charges for those signing the MST (automatically signed for the OATT). For those participants signing just the OATT, only the OATT Schedule 1 Charge ($) is charged according to the allocation (50%-50%) of charges.

85% / 15% Split of MST and OATT Schedule 1 Charges ($):

- Currently, 100% of the MST and OATT Schedule 1 Charges ($) are allocated to those Market Participants serving load (Load Serving Entities and Transaction Customers with respect to Bilateral/Market Energy Export and Wheel-Through Transactions). In the future, only 85% of these Schedule 1 charges will be allocated to those serving load, and the remaining 15% will be allocated to those Market Participants supplying energy.

1.2.3.1.2.6 References

The applicability of Load Serving Entity Ancillary Services - OATT Schedule 1 (S, SC, & D) charges is described within Schedule 1 of the OATT (Open Access Transmission Tariff).

1.2.3.1.3 Load Serving Entity Ancillary Services - OATT Schedule 2 - Voltage Support Service

1.2.3.1.3.1 Description

The Load Serving Entity (LSE) Open Access Transmission Tariff (OATT) Schedule 2 - Voltage Support Service (VSS) settlement ($) is a charge to Load Serving Entities intended to recover NYISO's costs to procure Voltage Support Services from Power Suppliers.

The NYISO procures Voltage Support Services (VSS) from Power Suppliers in the New York Control Area (NYCA) in order to ensure that appropriate voltage levels are maintained on the NYCA transmission network. Voltage is a critical component of providing quality and reliable electric service (also helps to minimize losses; higher voltage levels on the transmission network allow for longer transmission distances), and therefore is required. Poor voltage levels will lead to poor electric service.

All of NYISO's costs for procuring VSS are allocated to Load Serving Entities (LSE) and Transaction Customer (TC) (exports and wheel-throughs only) through charges under OATT Schedule 2. The estimated annual NYISO VSS costs are determined, then a VSS rate ($/MW) is determined using estimated load. This rate is used over the year to recover the estimated annual NYISO VSS costs.

Market Participants acting as a LSE will be charged a portion of the total estimated annual NYISO VSS costs based on their actual real-time load consumption. It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.1.3.2 Required Data Elements

1.2.3.1.3.2.1 Determinant

Bill Code	Title	Business Description	DSS Value
605	Hr VSS Rate ($/MW)	Hourly Voltage Support Service Rate ($/MW) is a number representing the voltage support service rate ($/MW) under Schedule 2 of the OATT.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y

1.2.3.1.3.2.2 Intermediates

None

1.2.3.1.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr VSS Stlmnt :LSE ($)	Hourly Voltage Support Service Settlement - Load Serving Entity ($) is a number representing the Voltage Support Service settlement for the LSE under Schedule 2 of the NYISO OATT for the given hour.	Y

1.2.3.1.3.3 Eligibility

Load Serving Entities will receive a charge for OATT Schedule 2 -VSS ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

1.2.3.1.3.4 Settlement Algorithm

Hr VSS Stlmnt :LSE ($) is calculated as:

Hr VSS Stlmnt :LSE ($) =

Hr VSS Rate ($/MW) * Hr RT LSE Load (MWh)

1.2.3.1.3.5 Additional Information

None

1.2.3.1.3.6 References

The applicability of Load Serving Entity Ancillary Services - OATT Schedule 2 - Voltage Support Service charges is described within Schedule 2 of the OATT (Open Access Transmission Tariff).

1.2.3.1.4 Load Serving Entity Ancillary Services - OATT Schedule 3 - Regulation and Frequency Control Service

1.2.3.1.4.1 Description

The Load Serving Entity (LSE) Open Access Transmission Tariff (OATT) Schedule 3 - Regulation and Frequency Response Service (Regulation) settlement ($) is a charge to Load Serving Entities intended to recover NYISO's costs to procure Regulation Services from Power Suppliers.

The NYISO procures Regulation and Frequency Response Services (Regulation) from Power Suppliers in the New York Control Area (NYCA) in order to ensure that electric supply and demand are balanced in real-time in ~6-second increments. If supply and demand are not balanced (equal), the frequency on the NYCA network can either increase or decrease, which leads to poor electric service and potential electrical equipment damage.

Regulation is part of the electrical capacity reserves procured by NYISO to be confident they will have enough resources to meet most all demand-level contingencies in real-time. It is designed to allow NYISO to balance supply and demand in real-time using small increments of increases / decreases in supply (generation) to met small increases / decreases in measured demand (load).

All of NYISO's costs for procuring Regulation are allocated to Load Serving Entities (LSE) through charges under OATT Schedule 3. Transaction customers (TC) are not charged any allocations for Regulation Service given their contracts are by conceptual nature a fixed amount of scheduled energy (not variable in real-time as with load).

Market Participants acting as a LSE will be charged an allocation of the total NYISO costs incurred during the hour (actual costs) to procure Regulation Service based on load ratio share (the LSE's actual real-time load consumption to the total NYISO LSE actual real-time load consumption). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.1.4.2 Required Data Elements

1.2.3.1.4.2.1 Determinant

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y

	Hr Total NYISO Reg Cr to PS ($)	Hourly Total NYISO Regulation Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers (net Regulation & Frequency Response Replacement Costs; if applicable) for providing regulation service for the given hour.	Y
	Hr Total NYISO Reg Chg to PS ($)	Hourly Total NYISO Regulation Charges to Power Suppliers ($) is a number representing the total NYISO regulation penalties paid by Power Suppliers for the given hour.	Y

1.2.3.1.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity is a number representing the ratio of the given LSE's load to total LSE load for all of NYISO, for the given hour.	Y
	Hr Total NYISO Net Reg Cr to PS ($)	Hourly Total NYISO Net Regulation Credits to Power Suppliers ($) is a number representing the total NYISO net amount credited to Power Suppliers for providing regulation service for the given hour (payments - charges).	N

1.2.3.1.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
612	Hr Regulation Stlmnt :LSE ($)	Hourly Regulation Settlement - Load Serving Entity ($) is a number representing the Regulation settlement for LSEs under Schedule 3 of the NYISO OATT for the given hour.	Y

1.2.3.1.4.3 Eligibility

Load Serving Entities will receive a charge for OATT Schedule 3 -Regulation ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

1.2.3.1.4.4 Settlement Algorithm

Hr Regulation Stlmnt :LSE ($) is calculated as:

Hr Regulation Stlmnt :LSE ($) =

Hr Total NYISO Net Reg Cr to PS ($) * Hr RT LSE Ld Ratio Sh :LSE

Where:

Hr Total NYISO Net Reg Cr to PS ($) =

Hr Total NYISO Reg Cr to PS ($) - Hr Total NYISO Reg Chg to PS ($)

Hr RT LSE Ld Ratio Sh :LSE =

Hr RT LSE Load (MWh) ÷ Hr Total NYISO RT LSE Load (MWh)

1.2.3.1.4.5 Additional Information

None

1.2.3.1.4.6 References

The applicability of Load Serving Entity Ancillary Services - OATT Schedule 3 - Regulation and Frequency Control Service charges is described within Schedule 3 of the OATT (Open Access Transmission Tariff).

1.2.3.1.5 Load Serving Entity Ancillary Services - OATT Schedule 5 - Operating Reserve Service

1.2.3.1.5.1 Description

The Load Serving Entity (LSE) Open Access Transmission Tariff (OATT) Schedule 5 - Operating Reserve Service settlement ($) is a charge to Load Serving Entities intended to recover NYISO's costs to procure Operating Reserve Services from Power Suppliers.

The NYISO procures Operating Reserves Services from Power Suppliers in the New York Control Area (NYCA) in order to ensure that enough electric supply is available in real-time to meet demand requirements (if actual demand significantly exceeds forecasted demand, or in cases of the loss of other expected supply resources).

Operating Reserves are part of the electrical capacity reserves procured by NYISO to be confident they will have enough resources to meet most all demand-level contingencies in real-time. There are three primary levels of Operating Reserves:

- 10 Minute Synchronous Reserves
  - Available electric supply capacity capable of providing electricity to the NYCA grid within 10 minutes, and is already synchronized with the NYCA grid (also called spinning reserves)
- 10 Minute Non-Synchronous Reserves
  - Available electric supply capacity capable of providing electricity to the NYCA grid within 10 minutes, and is NOT already synchronized with the NYCA grid (also called non-spinning reserves)
- 30 Minute Operating Reserves

- Available electric supply capacity capable of providing electricity to the NYCA grid within 30 minutes, and is, or is not, already synchronized with the NYCA grid

All of NYISO's costs for procuring Operating Reserve Services are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) (exports only) through charges under OATT Schedule 5.

Market Participants acting as a LSE will be charged an allocation of the total NYISO costs incurred during the hour (actual costs) to procure Operating Reserve Service based on load ratio share (the LSE's actual real-time load consumption to the total NYISO LSE actual real-time load consumption plus the total NYISO TC actual real-time export transaction schedules). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.1.5.2 Required Data Elements

1.2.3.1.5.2.1 Determinant

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO Op Res Cr to PS ($)	Hourly Total NYISO Operating Reserve Service Credits to Power Suppliers ($) is a number representing the total NYISO amount paid to Power Suppliers for providing operating reserves services for the given hour	Y
	Hr Ttl NYISO OpRes ShtChg to PS ($)	Hourly Total NYISO Operating Reserve Shortfall Charges to Power Suppliers ($) is a number representing the total NYISO operating reserves shortfall charges paid by Power Suppliers for the given hour.	Y

1.2.3.1.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

	Hr RT LSE Ld Ratio Sh :LSE & Exp	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity & Exports is a number representing the ratio of the given LSE's load to the sum of the total LSE load and total export transactions for all of NYISO, for the given hour.	Y
	Hr Ttl NYISO Net OpRes Cr to PS ($)	Hourly Total NYISO Net Operating Reserves Credits to Power Suppliers ($) is a number representing the total NYISO net amount credited to Power Suppliers for providing operating reserves services for the given hour (payments - charges).	N

1.2.3.1.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Op Res Stlmnt :LSE ($)	Hourly Operating Reserve Settlement - Load Serving Entity ($) is a number representing the Operating Reserves settlement for LSEs under Schedule 5 of the NYISO OATT for the given hour.	Y

1.2.3.1.5.3 Eligibility

Load Serving Entities will receive a charge for OATT Schedule 3 -Operating Reserves ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

1.2.3.1.5.4 Settlement Algorithm

Hr Op Res Stlmnt :LSE ($) is calculated as:

Hr Op Res Stlmnt :LSE ($) =

Hr Total NYISO Net OpRes Cr to PS ($) * Hr RT LSE Ld Ratio Sh :LSE & Exp

Where:

Hr Total NYISO Net OpRes Cr to PS ($) =

Hr Total NYISO Op Res Cr to PS ($) - Hr Ttl NYISO OpRes ShtChg to PS ($)

Hr RT LSE Ld Ratio Sh :LSE & Exp =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh)}

1.2.3.1.5.5 Additional Information

None

1.2.3.1.5.6 References

The applicability of Load Serving Entity Ancillary Services - OATT Schedule 5 - Operating Reserve Service charges is described within Schedule 5 of the OATT (Open Access Transmission Tariff).

1.2.3.1.6 Load Serving Entity Ancillary Services - OATT Schedule 6 - Black Start Service

1.2.3.1.6.1 Description

The Load Serving Entity (LSE) Open Access Transmission Tariff (OATT) Schedule 6 - Black Start Service settlement ($) is a charge to Load Serving Entities intended to recover NYISO's costs to procure Black Start Services from Power Suppliers.

The NYISO procures Black Start Services from Power Suppliers in the New York Control Area (NYCA) in order to ensure that in the worst case scenario of a complete power blackout, specifically configured power supply resources (generators) are capable of ramping-up without station service power form the NYCA grid.

All of NYISO's costs for procuring Black Start Service are allocated to Load Serving Entities (LSE) through charges under OATT Schedule 6.

Market Participants acting as a LSE will be charged an allocation of the total estimated annual NYISO Black Start costs based on their actual real-time load consumption. The estimated annual NYISO Black Start costs are determined, then a black start rate ($/MW) is determined using estimated load. This rate is used over the year to recover the estimated annual NYSIO Black Start Service costs. It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.1.6.2 Required Data Elements

1.2.3.1.6.2.1 Determinant

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO Black Start Cost ($)	Hourly Total NYISO Black Start Cost ($) is a number representing the hourly rate for black start service per MW.	Y

1.2.3.1.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity is a number representing the ratio of the given LSE's load to total LSE load for all of NYISO, for the given hour.	Y

1.2.3.1.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
613	Hr Black Start Stlmnt :LSE ($)	Hourly Black Start Settlement - Load Serving Entity ($) is a number representing the Black Start settlement for LSEs under Schedule 6 of the NYISO OATT for the given hour.	Y

1.2.3.1.6.3 Eligibility

Load Serving Entities will receive a charge for OATT Schedule 3 -Black Start ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

1.2.3.1.6.4 Settlement Algorithm

Hr Black Start Stlmnt :LSE ($) is calculated as:

Hr Black Start Stlmnt :LSE ($) =

Hr Total NYISO Black Start Cost ($) * Hr RT LSE Ld Ratio Sh :LSE

Where:

Hr RT LSE Ld Ratio Sh :LSE =

Hr RT LSE Load (MWh) ÷ Hr Total NYISO RT LSE Load (MWh)

1.2.3.1.6.5 Additional Information

None

1.2.3.1.6.6 References

The applicability of Load Serving Entity Ancillary Services - OATT Schedule 6 - Black Start Service charges is described within Schedule 6 of the OATT (Open Access Transmission Tariff).

1.2.3.1.7 Load Serving Entity Ancillary Services - OATT Schedule 6 - Black Start Service - LRR

1.2.3.2 Residuals

1.2.3.2.1 Load Serving Entity DAM Energy Residual

1.2.3.2.1.1 Description

The Load Serving Entity (LSE) Day Ahead Market (DAM) Energy Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's DAM Energy settlements to the Market Participants purchasing energy as LSEs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The LSE DAM Energy Residual settlement is based upon the NYISO Total DAM Energy Residual ($) times the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.2.1.2 Required Data Elements

1.2.3.2.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y

	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO DAM Engy Cr to PS ($)	Hourly Total NYISO Day Ahead Market Energy Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for DAM energy for the given hour.	Y
	Hr Ttl NYISO DAM Engy Ch to LSE ($)	Hourly Total NYISO Day Ahead Market Energy Charge to Load Serving Entity ($) is a number representing the total NYISO amount charged to LSEs for DAM energy (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO DAMLBMP EngyCh :TC ($)	Hourly Total NYISO Day Ahead Market LBMP Energy Charge to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for DAM LBMP energy for the given hour.	Y

1.2.3.2.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO DAM Resid Energy ($)	Hourly Total NYISO Day Ahead Market Residual Energy ($) is a number representing the total NYISO net DAM Residual Energy amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.2.3.2.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM Resid Enrgy Stlmnt :LSE ($)	Hourly Day Ahead Market Residual Energy Settlement - Load Serving Entity ($) is a number representing the DAM Residual Energy settlement for an LSE for the given hour. It is the LSE's pro-rated share of DAM Residual Energy charges	Y

Bill Code	Title	Business Description	DSS Value
		based upon load ratio share.	

1.2.3.2.1.3 Eligibility

Load Serving Entities will receive a charge or payment for DAM Energy Residuals ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3^{rd} Parties.

- There is a NYISO DAM Energy Residual ($) for the given hour (Hr Total NYISO DAM Resid Energy ($) <> 0).

1.2.3.2.1.4 Settlement Algorithm

Hr DAM Resid Enrgy Stlmnt :LSE ($) is calculated as:

Hr DAM Resid Enrgy Stlmnt :LSE ($) =

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO DAM Resid Energy ($)

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO DAM Resid Energy ($) =

Hr Ttl NYISO DAM Engy Cr to PS ($) - {Hr Ttl NYISO DAM Engy Ch to LSE ($) + Hr Ttl NYISO DAMLBMP EngyCh :TC ($)}

1.2.3.2.1.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Load Serving Entity Real-Time Actual Load (Hr RT LSE Load (MWh)) and Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from each total quantity. This does not affect the total amount of residual dollars being allocated since it is being excluded from both the numerator and denominator with respect to the Load Ratio Share calculation above.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.2.3.2.1.6 References

1.2.3.2.2 Load Serving Entity DAM Loss Residual

1.2.3.2.2.1 Description

The Load Serving Entity (LSE) Day Ahead Market (DAM) Loss Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's DAM Loss settlements to the Market Participants purchasing energy as LSEs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The LSE DAM Loss Residual settlement is based upon the NYISO Total DAM Loss Residual ($) times the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.2.2.2 Required Data Elements

1.2.3.2.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y

	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO DAM Loss Cr to PS ($)	Hourly Total NYISO Day Ahead Market Loss Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for DAM Losses for the given hour.	Y
	Hr Ttl NYISO DAM Loss Ch to LSE ($)	Hourly Total NYISO Day Ahead Market LBMP Loss Charges to Load Serving Entity ($) is a number representing the total NYISO amount charged to LSEs for DAM Losses (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO DAMLBMP LssCh :TC ($)	Hourly Total NYISO Day Ahead Market LBMP Loss Charge to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for DAM LBMP Losses for the given hour.	Y
	Hr Ttl NYISO DAMTUC Lss Ch :TC ($)	Hourly Total NYISO Day Ahead Market Transmission Usage Charges - Loss Charge to Transaction Customers ($) is a number representing the total NYISO amount (net of bilateral imports, exports, wheel-thrus, and internals) charged to Transaction Customers for DAM LBMP Losses for the given hour.	Y

1.2.3.2.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO DAM Resid Loss ($)	Hourly Total NYISO Day Ahead Market Residual Loss ($) is a number representing the total NYISO net DAM Residual Losses amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.2.3.2.2.2.3 Results

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr DAM Resid Loss Stlmnt :LSE ($)	Hourly Day Ahead Market Residual Loss Settlement - Load Serving Entity ($) is a number representing the DAM Residual Losses settlement for an LSE for the given hour. It is the LSE's pro-rated share of DAM Residual Losses charges based upon load ratio share.	Y

1.2.3.2.2.3 Eligibility

Load Serving Entities will receive a charge or payment for DAM Loss Residuals ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There is a NYISO DAM Loss Residual ($) for the given hour (Hr Total NYISO DAM Resid Loss ($) <> 0).

1.2.3.2.2.4 Settlement Algorithm

Hr DAM Resid Loss Stlmnt :LSE ($) is calculated as:

Hr DAM Resid Loss Stlmnt :LSE ($) =

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO DAM Resid Loss ($)

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO DAM Resid Energy ($) =

Hr Ttl NYISO DAM Loss Cr to PS ($) - {Hr Ttl NYISO DAM Loss Ch to LSE ($) + Hr Ttl NYISO DAMLBMP LssCh :TC ($) + Hr Ttl NYISO DAMTUC Lss Ch :TC ($)}

1.2.3.2.2.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Load Serving Entity Real-Time Actual Load (Hr RT LSE Load (MWh)) and Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from each total quantity. This does not affect the total amount of residual dollars being allocated since it is being excluded from both the numerator and denominator with respect to the Load Ratio Share calculation above.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.2.3.2.2.6 References

1.2.3.2.3 Load Serving Entity Balancing Market Energy Residual

1.2.3.2.3.1 Description

The Load Serving Entity (LSE) Balancing Market Energy Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's Balancing Market Energy settlements to the Market Participants purchasing energy as LSEs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The LSE Balancing Market Energy Residual settlement is based upon the NYISO Total Balancing Market Energy Residual ($) times the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.2.3.2 Required Data Elements

1.2.3.2.3.2.1 Determinant

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y

	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO Bal Engy Cr to PS ($)	Hourly Total Balancing Market Energy Credits to Power Suppliers ($) is a number representing the total amount credited to Power Suppliers for balancing market energy for the given hour.	Y
	Hr Ttl NYISO Bal Engy Ch to LSE ($)	Hourly Total Balancing Market Energy Charges to Load Serving Entities ($) is a number representing the total amount charged to LSEs for balancing market energy (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO BalLBMP EngyCh :TC ($)	Hourly Total NYISO Balancing Market LBMP Energy Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for Balancing Market LBMP energy for the given hour.	Y

1.2.3.2.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO Bal Resid Energy ($)	Hourly Total NYISO Balancing Market Residual Energy ($) is a number representing the total NYISO net Balancing Market Residual Energy amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.2.3.2.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Bal Resid Enrgy Stlmnt :LSE ($)	Hourly Balancing Market Residual Energy Settlement - Load Serving Entity ($) is a number representing the Balancing Market Residual Energy settlement for an LSE for the given hour. It is the LSE's pro-rated share of Balancing Residual Energy charges based upon load ratio	Y

Bill Code	Title	Business Description	DSS Value
		share.	

1.2.3.2.3.3 Eligibility

Load Serving Entities will receive a charge or payment for Balancing Market Energy Residuals ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There is a NYISO Balancing Market Energy Residual ($) for the given hour (Hr Total NYISO Bal Resid Energy ($) <> 0).

1.2.3.2.3.4 Settlement Algorithm

Hr Bal Resid Enrgy Stlmnt :LSE ($) is calculated as:

Hr Bal Resid Enrgy Stlmnt :LSE ($) =

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO Bal Resid Energy ($)

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Energy ($) =

Hr Ttl NYISO Bal Engy Cr to PS ($) - {Hr Ttl NYISO Bal Engy Ch to LSE ($) + Hr Ttl NYISO BalLBMP EngyCh :TC ($)}

1.2.3.2.3.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Load Serving Entity Real-Time Actual Load (Hr RT LSE Load (MWh)) and Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from each total quantity. This does not affect the total amount of residual dollars being allocated since it is being excluded from both the numerator and denominator with respect to the Load Ratio Share calculation above.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.2.3.2.3.6 References

1.2.3.2.4 Load Serving Entity Balancing Market Loss Residual

1.2.3.2.4.1 Description

The Load Serving Entity (LSE) Balancing Market Loss Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's Balancing Market Loss settlements to the Market Participants purchasing energy as LSEs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The LSE Balancing Market Loss Residual settlement is based upon the NYISO Total Balancing Market Loss Residual ($) times the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.2.4.2 Required Data Elements

1.2.3.2.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y

	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO Bal Loss Cr to PS ($)	Hourly Total NYISO Balancing Market Loss Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for Balancing Market Losses for the given hour.	Y
	Hr Ttl NYISO Bal Loss Ch to LSE ($)	Hourly Total NYISO Balancing Market Loss Charges to Load Serving Entity ($) is a number representing the total NYISO amount charged to LSEs for Balancing Market Losses (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO BalLBMP LssCh :TC ($)	Hourly Total NYISO Balancing Market LBMP Loss Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for Balancing Market LBMP Losses for the given hour.	Y
	Hr Ttl NYISO BalTUC LssChg :TC ($)	Hourly Total NYISO Balancing Market Transmission Usage Charges - Loss Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of bilateral imports, exports, wheel-thrus, and internals) charged to Transaction Customers for Balancing Market TUC Losses for the given hour.	Y

1.2.3.2.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO Bal Resid Loss ($)	Hourly Total NYISO Balancing Market Residual Loss ($) is a number representing the total NYISO net Balancing Market Residual Losses amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.2.3.2.4.2.3 Results

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr Bal Resid Loss Stlmnt :LSE ($)	Hourly Balancing Market Residual Loss Settlement - Load Serving Entity ($) is a number representing the Balancing Market Residual Loss settlement for an LSE for the given hour. It is the LSE's pro-rated share of Balancing Residual Loss charges based upon load ratio share.	Y

1.2.3.2.4.3 Eligibility

Load Serving Entities will receive a charge or payment for Balancing Market Loss Residuals ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There is a NYISO Balancing Market Loss Residual ($) for the given hour (Hr Total NYISO Bal Resid Loss ($) <> 0).

1.2.3.2.4.4 Settlement Algorithm

Hr Bal Resid Loss Stlmnt :LSE ($) is calculated as:

Hr Bal Resid Loss Stlmnt :LSE ($) =

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO Bal Resid Loss ($)

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Loss ($) =

Hr Ttl NYISO Bal Loss Cr to PS ($) - {Hr Ttl NYISO Bal Loss Ch to LSE ($) + Hr Ttl NYISO BalLBMP LssCh :TC ($) + Hr Ttl NYISO BalTUC LssChg :TC ($)}

1.2.3.2.4.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Load Serving Entity Real-Time Actual Load (Hr RT LSE Load (MWh)) and Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from each total quantity. This does not affect the total amount of residual dollars being allocated since it is being excluded from both the numerator and denominator with respect to the Load Ratio Share calculation above.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.2.3.2.4.6 References

1.2.3.2.5 Load Serving Entity Balancing Market Congestion Residual

1.2.3.2.5.1 Description

The Load Serving Entity (LSE) Balancing Market Congestion Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's Balancing Market Congestion settlements to the Market Participants purchasing energy as LSEs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The LSE Balancing Market Congestion Residual settlement is based upon the NYISO Total Balancing Market Congestion Residual ($) times the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.2.5.2 Required Data Elements

1.2.3.2.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y

	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO Bal Cong Cr to PS ($)	Hourly Total NYISO Balancing Market Congestion Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for Balancing Market Congestion for the given hour.	Y
	Hr Ttl NYISO Bal Cong Ch to LSE ($)	Hourly Total NYISO Balancing Market Congestion Charges to Load Serving Entities ($) is a number representing the total NYISO amount charged to LSEs for Balancing Market Congestion (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO BalLBMP CngCh :TC ($)	Hourly Total NYISO Balancing Market LBMP Congestion Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for Balancing Market LBMP Congestion for the given hour.	Y
	Hr Ttl NYISO BalTUC CngCh to TC ($)	Hourly Total NYISO Balancing Market Transmission Usage Charges - Congestion Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of bilateral imports, exports, wheel-thrus, and internals) charged to Transaction Customers for Balancing Market TUC Congestion for the given hour.	Y

1.2.3.2.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO Bal Resid Cong ($)	Hourly Total NYISO Balancing Market Residual Congestion ($) is a number representing the total NYISO net Balancing Market Residual Congestion amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.2.3.2.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Bal Resid Cong Stlmnt :LSE ($)	Hourly Balancing Market Residual Congestion Settlement - Load Serving Entity ($) is a number representing the Balancing Market Residual Congestion settlement for an LSE for the given hour. It is the LSE's pro-rated share of Balancing Residual Cong charges based upon load ratio share.	Y

1.2.3.2.5.3 Eligibility

Load Serving Entities will receive a charge or payment for Balancing Market Congestion Residuals ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There is a NYISO Balancing Market Congestion Residual ($) for the given hour (Hr Total NYISO Bal Resid Cong ($) <> 0).

1.2.3.2.5.4 Settlement Algorithm

Hr Bal Resid Cong Stlmnt :LSE ($) is calculated as:

Hr Bal Resid Cong Stlmnt :LSE ($) =

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO Bal Resid Cong ($)

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Cong ($) =

Hr Ttl NYISO Bal Cong Cr to PS ($) - {Hr Ttl NYISO Bal Cong Ch to LSE ($) + Hr Ttl NYISO BalLBMP CngCh :TC ($) + Hr Ttl NYISO BalTUC CngCh to TC ($)}

1.2.3.2.5.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Load Serving Entity Real-Time Actual Load (Hr RT LSE Load (MWh)) and Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from each total quantity.

This does not affect the total amount of residual dollars being allocated since it is being excluded from both the numerator and denominator with respect to the Load Ratio Share calculation above.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.2.3.2.5.6 References

1.2.3.3 Uplift Allocations

1.2.3.3.1 Load Serving Entity - Power Supplier DAM BPCG Allocation

1.2.3.3.1.1 Description

The Load Serving Entity (LSE) Power Supplier Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the DAM BPCG payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled off their DAM economic schedules by NYISO (not by Transmission Owners for local reliability reasons), and not to meet additional forecasted load requirements.

NYISO offers a DAM BPCG uplift payment to Power Suppliers selling energy into the NYISO DAM when their DAM energy schedule is flagged as Out of Merit for NYISO reliability reasons. This uplift payment is designed to ensure that generators recover at least their bid production costs, net of costs to serve Transaction Contracts, defined by their DAM Generation Bid (minimum generation, start-up, and incremental costs from energy curve/blocks), when they are dispatched off of their economic schedule by NYISO for reliability reasons.

All payments made to Power Suppliers through the DAM BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a LSE will be charged a portion of the total NYISO DAM BPCG costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each LSE that purchased energy in the NYISO energy markets.

NOTES:

- For Grouped Generators, the entire Grouped Generator set of generators is considered Out of Merit due to LRR if any one generator in the Group is placed Out of Merit for LRR by a Transmission Owner (see Additional Information section below for more information).
- Any payments to Power Suppliers due to under-forecasting that are not allocated to LSEs through the DAM BPCG Under-Forecasting allocation are included in this allocation (DAM BPCG).

1.2.3.3.1.2 Required Data Elements

1.2.3.3.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value

	Day Total NYISO DAM BPCG ($)	Day Total NYISO Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total DAM Bid Production Cost Guarantee payments made to Power Suppliers for the day; does not include uplift payments due to Local Reliability Rules (by Transmission Owners), or due to under-forecasting.	N
	Day Ttl NYISO DAM BPCG Fcst Rdr ($)	Daily Total NYISO Day Ahead Market Bid Production Cost Guarantee - Under-Forecasted Remainder ($) is a number representing the remaining amount of Day Ahead Market Bid Production Cost Guarantee payments to Power Suppliers due to under-forecasting that were not allocated to LSEs in the DAM BPCG - Under-Forecasted settlement allocations.	N
	Day RT LSE Load (MWh)	Daily Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load for a given LSE across all subzones within NYISO for the given day.	N
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.2.3.3.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT LSE Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.2.3.3.1.2.3 Results

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Day DAM BPCG Stlmnt :LSE ($)	Daily Day Ahead Market Bid Production Cost Guarantee Settlement - Load Serving Entity ($) is a number representing the Day Ahead Market Bid Production Cost Guarantee settlement for the day; allocation of payments made to power suppliers (internal generators) selling power into the NYISO DAM.	Y

1.2.3.3.1.3 Eligibility

Load Serving Entities will receive a charge for DAM BPCG ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Day RT LSE Load (MW) > 0).
- There were DAM BPCG payments made to Power Suppliers due to NYISO Out of Merit DAM scheduling, or un-allocated DAM BPCG Under-Forecasting payments, during the day (Day Total NYISO DAM BPCG ($) > 0 or Day Ttl NYISO DAM BPCG Fcst Rdr ($) > 0).

1.2.3.3.1.4 Settlement Algorithm

Day DAM BPCG Stlmnt :LSE ($) is calculated as:

Day DAM BPCG Stlmnt :LSE ($) =

{Day Total NYISO DAM BPCG ($) + Day Ttl NYISO DAM BPCG Fcst Rdr ($)} * Day RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT LSE Ld Ratio Sh :LSE, Exp, WT =

Day RT LSE Load (MWh) ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.2.3.3.1.5 Additional Information

Grouped Generators that are Out of Merit for LRR:

The Total NYISO DAM BPCG payments to Power Suppliers does not include any uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit during the period under Local Reliability Rules (LRR) (placed Out of Merit by a Transmission Owner). The entire Grouped Generator set of generators is considered Out of Merit due to LRR.

1.2.3.3.1.6 References

1.2.3.3.2 Load Serving Entity - Power Supplier DAM BPCG -LRR Allocation

1.2.3.3.2.1 Description

The Load Serving Entity (LSE) Power Supplier Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Local Reliability Rules (LRR) Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the DAM BPCG LRR payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled off their DAM economic schedules by Transmission Owners for local reliability reasons (not by NYISO).

NYISO offers a DAM BPCG LRR uplift payment to Power Suppliers selling energy into the NYISO DAM when their DAM energy schedule is flagged as Out of Merit by Transmission Owners for local reliability reasons. This uplift payment is designed to ensure that generators recover at least their bid production costs, net of costs to serve Transaction Contracts, defined by their DAM Generation Bid (minimum generation, start-up, and incremental costs from energy curve/blocks), when they are dispatched off of their economic schedule by a Transmission Owner for local reliability reasons.

All payments made to Power Suppliers through the DAM BPCG settlement due to LRR are totaled by NYISO Sub-Zone, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) based on their load ratio share in the given Sub-Zone during the given day.

Market Participants acting as a LSE will be charged a portion of the total sub-zone NYISO DAM BPCG LRR costs based on the LSE's sub-zone load ratio share (Total LSE Sub-Zone Load (MWh) ÷ NYISO Total Sub-Zone LSE Load (MWh)). It is determined by NYISO Sub-Zone at the daily-level for each LSE that purchased energy in the NYISO energy markets.

NOTES:

- For Grouped Generators, the entire Grouped Generator set of generators is considered Out of Merit due to LRR if any one generator in the Group is placed Out of Merit for LRR by a Transmission Owner (see Additional Information section below for more information).

1.2.3.3.2.2 Required Data Elements

1.2.3.3.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO SZ DAM BPCG LRR ($)	Daily Total NYISO Sub-Zonal Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) - Local Reliability Rules (LRR) ($) is a number representing the total DAM BPCG payments made to Power Suppliers who were placed Out of Merit by a Transmission Owner for local reliability reasons, for the given subzone, for the day.	N
	Day LSE Subzone Load (MW)	Daily Load Serving Entity Subzone Load (MW) is a number representing the LSE's subzonal load for the given day.	N
	Day Total Subzone Load (MW)	Daily Total SubZone Load (MW) is a number representing the total amount of load in a given sub-zone for the day.	N

1.2.3.3.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT LSE SZ Ld Ratio Sh :LSE	Daily Real-Time Load Serving Entity Sub-Zone Load Ratio Share - Load Serving Entity is a number representing the ratio of the given LSE's sub-zonal load to the sum of the total LSE sub-zonal load for all of NYISO, for the given day.	N

1.2.3.3.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day SZ DAM BPCG LRR Stlmnt :LSE ($)	Daily Sub-Zone Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Local Reliability Rules (LRR) Settlement - Load Serving Entity ($) is a number representing the DAM BPCG settlement for the day; allocation of payments made to power suppliers (internal generators) selling power into the NYISO DAM that are placed out of merit by a Transmission Owner for local reliability reasons.	N

NOTE: The LSE's Total DAM BPCG LRR Settlement is currently contained in the DSS, which is the sum of Day SZ DAM BPCG LRR Stlmnt :LSE ($) across all NYISO sub-zones.

1.2.3.3.2.3 Eligibility

Load Serving Entities will receive a charge within a given sub-zone for DAM BPCG LRR ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements in a given NYISO sub-zone from the NYISO energy markets (Day LSE Subzone Load (MW) > 0).
- There were DAM BPCG LRR payments made to Power Suppliers in a given NYISO sub-zone due to NYISO Out of Merit DAM scheduling during the day (Day Total NYISO SZ DAM BPCG LRR ($) > 0).

1.2.3.3.2.4 Settlement Algorithm

Day SZ DAM BPCG LRR Stlmnt :LSE ($) is calculated as:

Day SZ DAM BPCG LRR Stlmnt :LSE ($) =

Day Total NYISO SZ DAM BPCG LRR ($) * Day RT LSE SZ Ld Ratio Sh :LSE

Where:

Day RT LSE SZ Ld Ratio Sh :LSE =

Day LSE Subzone Load (MW) ÷ Day Total Subzone Load (MW)

1.2.3.3.2.5 Additional Information

Grouped Generators that are Out of Merit for LRR:

The Total NYISO DAM BPCG LRR payments to Power Suppliers includes all uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit during the period under Local Reliability Rules (LRR) (placed Out of Merit by a Transmission Owner). The entire Grouped Generator set of generators is considered Out of Merit due to LRR.

1.2.3.3.2.6 References

1.2.3.3.3 Load Serving Entity - Power Supplier RT BPCG Allocation

1.2.3.3.3.1 Description

The Load Serving Entity (LSE) Power Supplier Real-Time (RT) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the RT BPCG payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled off their economic basepoints in RT by NYISO (not by Transmission Owners for local reliability reasons), and not to meet additional forecasted load requirements.

NYISO offers a RT BPCG uplift payment to Power Suppliers selling energy into the NYISO RT market when their RT energy basepoint is flagged as Out of Merit for NYISO reliability reasons. This uplift payment is designed to ensure that generators recover at least their bid production costs, net of costs to serve Transaction Contracts or DAM Energy, defined by their HAM Generation Bid (minimum generation, start-up, and incremental costs from energy curve/blocks), when they are dispatched off of their economic basepoint by NYISO for reliability reasons.

All payments made to Power Suppliers through the RT BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a LSE will be charged a portion of the total NYISO RT BPCG costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each LSE that purchased energy in the NYISO energy markets.

NOTES:

- For Grouped Generators, the entire Grouped Generator set of generators is considered Out of Merit due to LRR if any one generator in the Group is placed Out of Merit for LRR by a Transmission Owner (see Additional Information section below for more information).

1.2.3.3.3.2 Required Data Elements

1.2.3.3.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value

	Day Total NYISO RT BPCG ($)	Day Total NYISO Real-Time (RT) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total RT Bid Production Cost Guarantee payments made to Power Suppliers for the day; does not include uplift payments due to Local Reliability Rules (by Transmission Owners), or due to under-forecasting.	N
	Day RT LSE Load (MWh)	Daily Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load for a given LSE across all subzones within NYISO for the given day.	N
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.2.3.3.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT LSE Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.2.3.3.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day RT BPCG Stlmnt :LSE ($)	Daily Real-Time Bid Production Cost Guarantee Settlement - Load Serving Entity ($) is a number representing the Real-Time Market Bid Production Cost Guarantee settlement for the day; allocation of payments made to power suppliers (internal generators) selling power into the NYISO DAM.	Y

1.2.3.3.3.3 Eligibility

Load Serving Entities will receive a charge for RT BPCG ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Day RT LSE Load (MW) > 0).
- There were RT BPCG payments made to Power Suppliers due to NYISO Out of Merit real-time dispatches during the day (Day Total NYISO RT BPCG ($) > 0).

1.2.3.3.3.4 Settlement Algorithm

Day RT BPCG Stlmnt :LSE ($) is calculated as:

Day RT BPCG Stlmnt :LSE ($) =

Day Total NYISO RT BPCG ($) * Day RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT LSE Ld Ratio Sh :LSE, Exp, WT =

Day RT LSE Load (MWh) ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.2.3.3.3.5 Additional Information

Grouped Generators that are Out of Merit for LRR:

The Total NYISO RT BPCG payments to Power Suppliers does not include any uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit during the period under Local Reliability Rules (LRR) (placed Out of Merit by a Transmission Owner). The entire Grouped Generator set of generators is considered Out of Merit due to LRR.

1.2.3.3.3.6 References

1.2.3.3.4 Load Serving Entity - Power Supplier RT BPCG -LRR Allocation

1.2.3.3.4.1 Description

The Load Serving Entity (LSE) Power Supplier Real-Time (RT) Bid Production Cost Guarantee (BPCG) Local Reliability Rules (LRR) Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the RT BPCG LRR payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled off their RT economic basepoints by Transmission Owners for local reliability reasons (not by NYISO).

NYISO offers a RT BPCG LRR uplift payment to Power Suppliers selling energy into the NYISO DAM when their RT basepoint is flagged as Out of Merit by Transmission Owners for local reliability reasons. This uplift payment is designed to ensure that generators recover at least their bid production costs, net of costs to serve Transaction Contracts and DAM Energy, defined by their HAM Generation Bid (minimum generation, start-up, and incremental costs from energy curve/blocks), when they are dispatched off of their economic schedule by a Transmission Owner for local reliability reasons.

All payments made to Power Suppliers through the RT BPCG settlement due to LRR are totaled by NYISO Sub-Zone, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) based on their load ratio share in the given Sub-Zone during the given day.

Market Participants acting as a LSE will be charged a portion of the total sub-zone NYISO RT BPCG LRR costs based on the LSE's sub-zone load ratio share (Total LSE Sub-Zone Load (MWh) ÷ NYISO Total Sub-Zone LSE Load (MWh)). It is determined by NYISO Sub-Zone at the daily-level for each LSE that purchased energy in the NYISO energy markets.

NOTES:

- For Grouped Generators, the entire Grouped Generator set of generators is considered Out of Merit due to LRR if any one generator in the Group is placed Out of Merit for LRR by a Transmission Owner (see Additional Information section below for more information).

1.2.3.3.4.2 Required Data Elements

1.2.3.3.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO SZ RT BPCG LRR ($)	Daily Total NYISO Sub-Zonal Real-Time (RT) Bid Production Cost Guarantee (BPCG) - Local Reliability Rules (LRR) ($) is a number representing the total RT BPCG payments made to Power Suppliers who were placed Out of Merit by a Transmission Owner for local reliability reasons, for the given subzone, for the day.	N
	Day LSE Subzone Load (MW)	Daily Load Serving Entity Subzone Load (MW) is a number representing the LSE's subzonal load for the given day.	N
	Day Total Subzone Load (MW)	Daily Total SubZone Load (MW) is a number representing the total amount of load in a given sub-zone for the day.	N

1.2.3.3.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT LSE SZ Ld Ratio Sh :LSE	Daily Real-Time Load Serving Entity Sub-Zone Load Ratio Share - Load Serving Entity is a number representing the ratio of the given LSE's sub-zonal load to the sum of the total LSE sub-zonal load for all of NYISO, for the given day.	N

1.2.3.3.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day SZ RT BPCG LRR Stlmnt :LSE ($)	Daily Sub-Zone Real-Time (RT) Bid Production Cost Guarantee (BPCG) Local Reliability Rules (LRR) Settlement - Load Serving Entity ($) is a	N

Bill Code	Title	Business Description	DSS Value
		number representing the RT BPCG settlement for the day; allocation of payments made to power suppliers (internal generators) selling power into the NYISO RT market that are placed out of merit by a Transmission Owner for local reliability reasons.	

NOTE: The LSE's Total RT BPCG LRR Settlement is currently contained in the DSS, which is the sum of Day SZ RT BPCG LRR Stlmnt :LSE ($) across all NYISO sub-zones.

1.2.3.3.4.3 Eligibility

Load Serving Entities will receive a charge within a given sub-zone for RT BPCG LRR ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements in a given NYISO sub-zone from the NYISO energy markets (Day LSE Subzone Load (MW) > 0).
- There were RT BPCG LRR payments made to Power Suppliers in a given NYISO sub-zone due to NYISO Out of Merit DAM scheduling during the day (Day Total NYISO SZ RT BPCG LRR ($) > 0).

1.2.3.3.4.4 Settlement Algorithm

Day SZ RT BPCG LRR Stlmnt :LSE ($) is calculated as:

Day SZ RT BPCG LRR Stlmnt :LSE ($) =

Day Total NYISO SZ RT BPCG LRR ($) * Day RT LSE SZ Ld Ratio Sh :LSE

Where:

Day RT LSE SZ Ld Ratio Sh :LSE =

Day LSE Subzone Load (MW) ÷ Day Total Subzone Load (MW)

1.2.3.3.4.5 Additional Information

Grouped Generators that are Out of Merit for LRR:

The Total NYISO RT BPCG LRR payments to Power Suppliers includes all uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit during the period under Local Reliability Rules (LRR) (placed Out of Merit by a Transmission Owner). The entire Grouped Generator set of generators is considered Out of Merit due to LRR.

1.2.3.3.4.6 References

1.2.3.3.5 Load Serving Entity - Power Supplier DAM Margin Assurance Allocation

1.2.3.3.5.1 Description

The Load Serving Entity (LSE) Power Supplier Day Ahead Market (DAM) Margin Assurance Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the DAM Margin Assurance payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled below their DAM Schedules by NYISO (not by Transmission Owners for local reliability reasons).

NYISO offers a DAM Margin Assurance uplift payment to Power Suppliers that are required to purchase energy in the NYISO Balancing Energy Market as a result of being dispatched below their DAM schedule by NYISO for reliability reasons. Therefore, the DAM Margin Assurance settlement for Power Suppliers guarantees a generator's DAM margin (profit) is not reduced by balancing market energy settlements in Real-Time due to NYISO scheduling.

The DAM Margin Assurance payments made to Power Suppliers are totaled, and allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given hour.

Market Participants acting as a LSE will be charged a portion of the total NYISO DAM Margin Assurance costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.3.5.2 Required Data Elements

1.2.3.3.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO DAM Mrgn Assrnc ($)	Hourly Total NYISO Day Ahead Market Margin Assurance ($) is a number representing the total amount credited to Power Suppliers for Margin Assurance Credits for the hour.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.2.3.3.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.2.3.3.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM Mrgn Assrnc Stlmnt :LSE ($)	Hourly Day Ahead Market Margin Assurance Settlement - Load Serving Entity ($) is a number representing the DAM Margin Assurance settlement for an LSE for the given hour. It is the LSE's pro-rated share of DAM Margin Assurance charges based upon load ratio share.	Y

1.2.3.3.5.3 Eligibility

Load Serving Entities will receive a charge for DAM Margin Assurance ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There were DAM Margin Assurance payments made to Power Suppliers during the hour (Hr Total NYISO DAM Mrgn Assrnc ($) > 0).

1.2.3.3.5.4 Settlement Algorithm

Hr DAM Mrgn Assrnc Stlmnt :LSE ($) is calculated as:

Hr DAM Mrgn Assrnc Stlmnt :LSE ($) =

Hr Total NYISO DAM Mrgn Assrnc ($) * Hr RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

1.2.3.3.5.5 Additional Information

None

1.2.3.3.5.6 References

1.2.3.3.6 Load Serving Entity - Power Supplier DAM Margin Assurance -LRR Allocation

1.2.3.3.6.1 Description

The Load Serving Entity (LSE) Power Supplier Day Ahead Market (DAM) Margin Assurance Allocation Local Reliability Rules (LRR) settlement ($) is a charge to LSEs intended to recover NYISO's costs of the DAM Margin Assurance LRR payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled below their DAM Schedules by Transmission Owners for local reliability reasons (not by NYISO).

NYISO offers a DAM Margin Assurance LRR uplift payment to Power Suppliers that are required to purchase energy in the NYISO Balancing Energy Market as a result of being dispatched below their DAM schedule by Transmission Owners for local reliability reasons. Therefore, the DAM Margin Assurance LRR settlement for Power Suppliers guarantees a generator's DAM margin (profit) is not reduced by balancing market energy settlements in Real-Time due to Transmission Owner scheduling.

All payments made to Power Suppliers through the DAM Margin Assurance settlement due to LRR are totaled by NYISO Sub-Zone, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) based on their load ratio share in the given Sub-Zone during the given day.

Market Participants acting as a LSE will be charged a portion of the total sub-zone NYISO DAM Margin Assurance LRR costs based on the LSE's sub-zone load ratio share (Total LSE Sub-Zone Load (MWh) ÷ NYISO Total Sub-Zone LSE Load (MWh)). It is determined by NYISO Sub-Zone at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

NOTE:

- For Grouped Generators, the entire Grouped Generator set of generators is considered Out of Merit due to LRR if any one generator in the Group is placed Out of Merit for LRR by a Transmission Owner (see Additional Information section below for more information).

1.2.3.3.6.2 Required Data Elements

1.2.3.3.6.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr SZ NYISO DAM Mgn Assrnc LRR ($)	Hourly SubZone NYISO Day Ahead Market Margin Assurance Local Reliability Rules ($) is a number representing the total amount credited to Power Suppliers for Margin Assurance LRR Credits for the hour, for the given subzone.	N

	Hr LSE Subzone Load (MWh)	Hourly Load Serving Entity Subzone Load (MWh) is a number representing the LSE's subzonal load for the given hour.	N
	Hr Total Subzone Load (MWh)	Hourly Total SubZone Load (MWh) is a number representing the total amount of load in a given sub-zone for the hour.	N

1.2.3.3.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT LSE SZ Ld Ratio Sh: LSE	Hourly Real-Time Load Serving Entity Sub-Zone Load Ratio Share - Load Serving Entity is a number representing the ratio of the given LSE's sub-zonal load to the sum of the total LSE sub-zonal load for all of NYISO, for the given hour.	N

1.2.3.3.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr SZ DAM MgnAssrnc LRR Stlmt :LSE ($)	Hourly Sub-Zone Day Ahead Market Margin Assurance Local Reliability Rules Settlement - Load Serving Entity ($) is a number representing the DAM Margin Assurance LRR settlement for an LSE for the given hour, across all subzones. It is the LSE's pro-rated share of DAM Margin Assurance LRR charges based upon load ratio share in each subzone.	N

NOTE: The LSE’s Total DAM Margin Assurance LRR Settlement is currently contained in the DSS, which is the sum of Hr SZ DAM MgnAssrnc LRR Stlmt :LSE ($) for all hours in a given day.

1.2.3.3.6.3 Eligibility

Load Serving Entities will receive a charge within a given sub-zone for DAM Margin Assurance LRR ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements in a given NYISO sub-zone from the NYISO energy markets (Hr LSE Subzone Load (MWh) > 0).
- There were DAM Margin Assurance LRR payments made to Power Suppliers in a given NYISO sub-zone due to Transmission Owner Out of Merit DAM scheduling during the day (Hr Ttl NYISO DAM Mgn Assrnc LRR ($) > 0).

1.2.3.3.6.4 Settlement Algorithm

Hr SZ DAM MgnAssrnc LRR Stlmt :LSE ($) is calculated as:

Hr SZ DAM MgnAssrnc LRR Stlmt :LSE ($) =

∑ {Hr SZ NYISO DAM Mgn Assrnc LRR ($) * Hr RT LSE SZ Ld Ratio Sh :LSE} across all NYISO sub-zones for a given LSE.

Where:

Hr RT LSE SZ Ld Ratio Sh :LSE =

Hr LSE Subzone Load (MWh) ÷ Hr Total Subzone Load (MWh)

1.2.3.3.6.5 Additional Information

Grouped Generators that are Out of Merit for LRR:

The Total NYISO DAM Margin Assurance LRR payments to Power Suppliers includes all uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit during the period under Local Reliability Rules (LRR) (placed Out of Merit by a Transmission Owner). The entire Grouped Generator set of generators is considered Out of Merit due to LRR.

1.2.3.3.6.6 References

1.2.3.3.7 Load Serving Entity - Power Supplier ELR DAM Margin Assurance Allocation

1.2.3.3.7.1 Description

The Load Serving Entity (LSE) Power Supplier Energy Limited Resource (ELR) Day Ahead Market (DAM) Margin Assurance Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the ELR DAM Margin Assurance payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators, classified as ELR generators, scheduled below their DAM Schedules by NYISO (not by Transmission Owners for local reliability reasons).

NYISO offers an ELR DAM Margin Assurance uplift payment to Power Suppliers, with generators classified as ELR generators that are required to purchase energy in the NYISO Balancing Energy Market as a result of being dispatched below their DAM schedule by NYISO for reliability reasons. Therefore, the ELR DAM Margin Assurance settlement for Power Suppliers guarantees an ELR generator's DAM margin (profit) is not reduced by balancing market energy settlements in Real-Time due to NYISO scheduling.

The ELR DAM Margin Assurance payments made to Power Suppliers are totaled and allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a LSE will be charged a portion of the total NYISO ELR DAM Margin Assurance costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.3.7.2 Required Data Elements

1.2.3.3.7.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO ELR DAM Mrgn Assrnc ($)	Daily Total NYISO Energy Limited Resource (ELR) Day Ahead Market Margin Assurance ($) is a number representing the total amount credited to Power Suppliers, with generators classified as ELRs, for ELR DAM Margin Assurance Credits for the day.	N
	Day RT LSE Load (MWh)	Daily Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load for a given LSE across all subzones within NYISO for the given day.	N
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MWh)	Daily Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MWh)	Daily Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.2.3.3.7.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT LSE Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.2.3.3.7.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day ELR DAM MargAsrc Stlmnt :LSE ($)	Daily Energy Limited Resource Day Ahead Market Margin Assurance Settlement - Load Serving Entity ($) is a number representing the settlement for Energy Limited Resource Day Ahead Market Margin Assurance for the given LSE for the given day; allocation of payments to ELRs to guarantee their DAM margins when a unit is committed below their economic basepoints by NYISO for reliability reasons.	Y

1.2.3.3.7.3 Eligibility

Load Serving Entities will receive a charge for ELR DAM Margin Assurance ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Day RT LSE Load (MWh) > 0).
- There were ELR DAM Margin Assurance payments made to Power Suppliers during the day (Day Total NYISO ELR DAM Mrgn Assrnc ($) > 0).

1.2.3.3.7.4 Settlement Algorithm

Day ELR DAM MargAsrc Stlmnt :LSE ($) is calculated as:

Day ELR DAM MargAsrc Stlmnt :LSE ($) =

Day Total NYISO ELR DAM Mrgn Assrnc ($) * Day RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT LSE Ld Ratio Sh :LSE, Exp, WT =

Day RT LSE Load (MWh) ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MWh) + Day Total NYISO RT WT Trans (MWh)}

1.2.3.3.7.5 Additional Information

None

1.2.3.3.7.6 References

1.2.3.3.8 Load Serving Entity - Transaction DAM BPCG Allocation

1.2.3.3.8.1 Description

The Load Serving Entity (LSE) Transaction Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the Transaction DAM BPCG payment to Transaction Customers (NYCA-external generators).

NYISO offers a DAM BPCG uplift payment to Transaction Customers (external generators) selling energy into the NYISO DAM via Market Energy Import Transactions when their DAM schedule is below their DAM Transaction Bid (MW) due to constraints at the external control area transmission ties. This uplift payment is designed to ensure that external generators recover at least their bid production costs defined by their DAM Transaction Bid (decremental bid price), when they are scheduled below their DAM Bid (MW).

All payments made to Transaction Customers through the Transaction DAM BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a LSE will be charged a portion of the total NYISO Transaction DAM BPCG costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.3.8.2 Required Data Elements

1.2.3.3.8.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO Trans DAM BPCG ($)	Day Total NYISO Transaction Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total Transaction DAM Bid Production Cost Guarantee payments made to Transaction Customers for the day, for external generators selling energy into the NYISO DAM via Market Energy Import Transactions.	N
	Day RT LSE Load (MWh)	Daily Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load for a given LSE across all subzones within NYISO for the given day.	N
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.2.3.3.8.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT LSE Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.2.3.3.8.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day DAM Trans BPCG Stlmnt :LSE ($)	Daily Day Ahead Market Transaction Bid Production Cost Guarantee Settlement - Load Serving Entity ($) is a number representing the given LSE's Day Ahead Market Transaction Bid Production Cost Guarantee settlement for the day; allocation of payments made to transaction customers (external generators) selling power into the NYISO DAM.	Y

1.2.3.3.8.3 Eligibility

Load Serving Entities will receive a charge for Transaction DAM BPCG ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Day RT LSE Load (MW) > 0).
- There were Transaction DAM BPCG payments made to Transaction Customers during the day (Day Total NYISO Trans DAM BPCG ($) > 0).

1.2.3.3.8.4 Settlement Algorithm

Day DAM Trans BPCG Stlmnt :LSE ($) is calculated as:

Day DAM Trans BPCG Stlmnt :LSE ($) =

Day Total NYISO Trans DAM BPCG ($) * Day RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT LSE Ld Ratio Sh :LSE, Exp, WT =

Day RT LSE Load (MWh) ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.2.3.3.8.5 Additional Information

None

1.2.3.3.8.6 References

1.2.3.3.9 Load Serving Entity - Transaction RT BPCG Allocation

1.2.3.3.9.1 Description

The Load Serving Entity (LSE) Transaction Real-Time (RT) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the Transaction RT BPCG payment to Transaction Customers (NYCA-external generators).

NYISO offers a RT BPCG uplift payment to Transaction Customers (external generators) selling energy into the NYISO RT market via Market Energy Import Transactions when their RT schedule is below their HAM Transaction Bid (MW) due to constraints at the external control area transmission ties. This uplift payment is designed to ensure that external generators recover at least their bid production costs, net of DAM Transaction scheduled energy, defined by their HAM Transaction Bid (decremental bid price), when they are scheduled below their HAM Bid (MW).

All payments made to Transaction Customers through the Transaction RT BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a LSE will be charged a portion of the total NYISO Transaction RT BPCG costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.3.9.2 Required Data Elements

1.2.3.3.9.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO Trans RT BPCG ($)	Day Total NYISO Transaction Real-Time (RT) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total Transaction RT Bid Production Cost Guarantee payments made to Transaction Customers for the day, for external generators selling energy into the NYISO RT market via Market Energy Import Transactions.	N
	Day RT LSE Load (MWh)	Daily Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load for a given LSE across all subzones within NYISO for the given day.	N
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.2.3.3.9.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT LSE Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.2.3.3.9.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day RT Trans BPCG Stlmnt :LSE ($)	Daily Real-Time Transaction Bid Production Cost Guarantee Settlement - Load Serving Entity ($) is a number representing the given LSE's Real-Time Market Transaction Bid Production Cost Guarantee settlement for the day; allocation of payments made to transaction customers (external generators) selling power into the NYISO RT market.	Y

1.2.3.3.9.3 Eligibility

Load Serving Entities will receive a charge for Transaction RT BPCG ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Day RT LSE Load (MW) > 0).
- There were Transaction RT BPCG payments made to Transaction Customers during the day (Day Total NYISO Trans RT BPCG ($) > 0).

1.2.3.3.9.4 Settlement Algorithm

Day RT Trans BPCG Stlmnt :LSE ($) is calculated as:

Day RT Trans BPCG Stlmnt :LSE ($) =

Day Total NYISO Trans RT BPCG ($) * Day RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT LSE Ld Ratio Sh :LSE, Exp, WT =

Day RT LSE Load (MWh) ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.2.3.3.9.5 Additional Information

None

1.2.3.3.9.6 References

1.2.3.3.10 Load Serving Entity - Transaction Import ECA Supplier Guarantee Allocation

1.2.3.3.10.1 Description

The Load Serving Entity (LSE) Transaction Import Extraordinary Corrective Action (ECA) Supplier Guarantee Allocation settlement ($) is a charge to LSEs intended to recover NYISO's costs of the Import ECA Supplier Guarantee payment to Transaction Customers.

NYISO offers an Import Extraordinary Corrective Action (ECA) Supplier Guarantee uplift payment to Transaction Customers importing energy from external control areas into the New Your Control Area (NYCA) when their real-time transaction schedule is curtailed by NYISO (not for Market Participant reasons). This uplift payment is designed to ensure the Transaction Customers importing power into the NYCA are not financially harmed by NYISO transaction curtailments, when necessary.

The Transaction Contracts are either Market Energy Import Transactions (sales to the NYISO markets) or Bilateral Import Transactions (direct sales to load buses within the NYCA). Uplift payments made to Transaction Customers are totaled and allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given hour.

Market Participants acting as a LSE will be charged a portion of the total NYISO Import ECA Supplier Guarantee costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.3.10.2 Required Data Elements

1.2.3.3.10.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr Ttl NYISO ImECASupGnt :LBMP ($)	Hourly Total NYISO Import Extraordinary Corrective Action Supplier Guarantee - LBMP ($) is a number representing the total NYISO amount credited to LBMP import transaction customers for real time Import ECA Supplier Guarantee payments for the given hour.	Y
	Hr Ttl NYISO ImECASupGnt :PTP ($)	Hourly Total NYISO Import Extraordinary Corrective Action Supplier Guarantee - Point-to-Point ($) is a number representing the total NYISO amount credited to point-to-point import transaction customers for real time Import ECA Supplier Guarantee payments for the given hour.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y

	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.2.3.3.10.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO Imp ECA Sup Gnt ($)	Hourly Total NYISO Import Extraordinary Corrective Action Supplier Guarantee ($) is a number representing the total amount credited to point-to-point and LBMP import transaction customers for real time Import ECA Supplier Guarantee payments for the given hour.	N
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.2.3.3.10.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Imp ECA Sup Gnt Stlmnt :LSE ($)	Hourly Import Extraordinary Corrective Action Supplier Guarantee Settlement - Load Serving Entity ($) is a number representing the RT Import ECA Supplier Guarantee settlement for an LSE for the given hour. It is the LSE's pro-rated share of RT Import ECA Supplier Guarantee charges based upon load ratio share.	Y

1.2.3.3.10.3 Eligibility

Load Serving Entities will receive a charge for Transaction Import ECA Supplier Guarantee ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There were Import ECA Supplier Guarantee payments made to Transaction Customers during the hour (Hr Total NYISO Imp ECA Sup Gnt ($) > 0).

1.2.3.3.10.4 Settlement Algorithm

Hr Imp ECA Sup Gnt Stlmnt :LSE ($) is calculated as:

Hr Imp ECA Sup Gnt Stlmnt :LSE ($) =

Hr Total NYISO Imp ECA Sup Gnt ($) * Hr RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Hr Total NYISO Imp ECA Sup Gnt ($) =

Hr Ttl NYISO ImECASupGnt :LBMP ($) + Hr Ttl NYISO ImECASupGnt :PTP ($)

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

1.2.3.3.10.5 Additional Information

None

1.2.3.3.10.6 References

1.2.3.3.11 Load Serving Entity - Power Supplier DAM BPCG Under-Forecasted Load Allocation

1.2.3.3.11.1 Description

The Load Serving Entity (LSE) Power Supplier Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Under-Forecasted Load Allocation settlement ($) is a charge to LSEs intended to recover a portion of NYISO's costs of the DAM BPCG payment to Power Suppliers due to LSEs' under-forecasting of DAM Load (MW). This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled off their DAM economic schedules by NYISO to meet additional forecasted load requirements (not for NYISO reliability reasons or by Transmission Owners for local reliability reasons).

NYISO offers a DAM BPCG uplift payment to Power Suppliers selling energy into the NYISO DAM when their DAM energy schedule is flagged as Out of Merit by NYISO to meet additional forecasted load requirements. This uplift payment is designed to ensure that generators recover at least their bid production costs, net of costs to serve Transaction Contracts, defined by their DAM Generation Bid (minimum generation, start-up, and incremental costs from energy curve/blocks), when they are dispatched off of their economic schedule by NYISO to meet additional forecasted load requirements (additional load requirements due to under-forecasting).

All payments made to Power Suppliers through the DAM BPCG settlement (to meet additional forecasted load requirements only) are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) based on their load ratio share for the given super zone for the given day.

Market Participants acting as an LSE will be charged a portion of the total NYISO DAM BPCG costs due to DAM load under-forecasting based on the LSE's load ratio share within each super zone. It is determined at the daily-level for each LSE.

NOTES:

- Any payments to Power Suppliers due to under-forecasting that are not allocated to LSEs through this DAM BPCG Under-Forecasting allocation are included in the DAM BPCG allocation as a result of NYISO out-of-merit scheduling.
- The below algorithm section calculates the Load Serving Entity (LSE) Power Supplier Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Under-Forecasted Load Allocation settlement ($) for a single SuperZone. For a complete Under-Forecasted Load Allocation, this calculation must be performed for each SuperZone in which a Load Serving Entity (LSE) serves load.

1.2.3.3.11.2 Required Data Elements

1.2.3.3.11.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Ttl NYISO DAM UndrFrcst BPCG ($)	Day Total NYISO Day-Ahead Market (DAM) Under-Forecast Bid Production Cost Guarantee (BPCG) ($) is a number representing the total NYISO Bid Production Cost Guarantee settlements due to DAM Under-Forecasted Load paid to Power Suppliers; this amount is allocated to Load Serving Entities.	N
	Day RT LSE Load :LSE/SprZn (MW)	Daily Real-Time Load Serving Entity (LSE) Load - LSE/Superzone (MW) is a number representing the total daily LSE load (MW) in the given superzone for the given LSE for the given day.	N
	Day DAM Sched Load :LSE/SprZn (MW)	Daily Day Ahead Market (DAM) Scheduled Load -Load Serving Entity (LSE)/Superzone (MW) is a number representing the total daily DAM scheduled LSE load (MW) in the given superzone for the given LSE for the given day.	N
	Day DAM VSupply Energy :VBE/SprZn (MW)	Daily Day Ahead Market (DAM) Virtual Supply Energy -Virtual Bid Entity (VBE)/Superzone (MW) is a number representing the total daily DAM scheduled virtual supply (MW) in the given superzone for the given VBE for the given day.	N
	Day DAM VLoad Energy :VBE/SprZn (MW)	Daily Day Ahead Market (DAM) Virtual Load Energy -Virtual Bid Entity (VBE)/Superzone (MW) is a number representing the total daily	N

Bill Code	Title	Business Description	DSS Value
		DAM scheduled virtual load (MW) in the given superzone for the given VBE for the given day.	
	Day RT LSE Load :SprZn (MW)	Daily Real-Time Load Serving Entity (LSE) Load -Superzone (MW) is a number representing the total daily LSE load (MW) in the given superzone for the given day.	N
	Day DAM Sched Load :SprZn (MW)	Daily Day Ahead Market (DAM) Scheduled Load -Superzone (MW) is a number representing the total daily DAM scheduled LSE load (MW) in the given superzone for the given day.	N
	Day DAM VSupply Energy :SprZn (MW)	Daily Day Ahead Market (DAM) Virtual Supply Energy -Superzone (MW) is a number representing the total daily DAM scheduled virtual supply (MW) in the given superzone for the given day.	N
	Day DAM VLoad Energy :SprZn (MW)	Daily Day Ahead Market (DAM) Virtual Load Energy -Superzone (MW) is a number representing the total daily DAM scheduled virtual load (MW) in the given superzone for the given day.	N
	Day DAM NYISO Frcst Load :SprZn (MW)	Daily Day Ahead Market (DAM) NYISO Forecasted Load -Superzone (MW) is a number representing the NYISO-determined forecasted load (MW) for the given superzone for the given day; determined from NYISO Security Constrained Unit Commitment (SCUC) process/system.	N

1.2.3.3.11.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day Adj2 RT Actual Load :LSE/SprZn (MW)	Day Adjusted Real-Time Actual Load - Load Serving Entity (LSE)/SuperZone (MW) is a number representing the total LSE amount of real-time load (MW) adjusted using the LSE total DAM Scheduled Energy (MW), DAM Virtual Load (MW), and the DAM Virtual Supply, for the given LSE, the given superzone, and the given day.	N
	Day Total Adj RT Actual Load (MW)	Daily Total Adjusted Real-Time Actual Load (MW) is a number representing the total NYISO amount of real-time load (MW) adjusted using NYISO total DAM Scheduled Energy (MW), DAM Virtual Load (MW), and the DAM Virtual Supply, for the given day.	N
	Day Adj2 RT Actual Load :SprZn (MW)	Daily Adjusted Real-Time Actual Load - SuperZone (MW) is a number representing the total NYISO amount of real-time load (MW) adjusted using the superzone total DAM Scheduled Energy (MW), DAM Virtual Load (MW), and the	N

Bill Code	Title	Business Description	DSS Value
		DAM Virtual Supply, for the given superzone and the given day.	
	Day Adj RT Actual Load :SprZn (MW)	Day Adjusted Real-Time Actual Load - SuperZone (MW) is a number representing the total superzone amount of real-time load (MW) adjusted using the superzone total DAM Scheduled Energy (MW), DAM Virtual Load (MW), and the DAM Virtual Supply, for the given superzone and the given day.	N
	Day Adj Frcst Load :SprZn (MW)	Day Adjusted Forecasted Load - SuperZone (MW) is a number representing the total superzone amount of the NYISO-determined forecasted load (MW) adjusted using the superzone total DAM Scheduled Energy (MW), DAM Virtual Load (MW), and the DAM Virtual Supply, for the given superzone and the given day.	N
	Day DAM Frcst Accuracy Ratio :SprZn	Daily Day Ahead Market (DAM) Forecast Accuracy Ratio - SuperZone is a number representing the accuracy of the DAM forecast relative to the real-time actual load; it is a ratio of the adjusted forecasted load (MW) to the adjusted actual real-time load (MW) for a given superzone and given day.	N
	Day SprZn Adj RT Ld Ratio Sh	Daily SuperZone Adjusted Real-Time Load Ratio Share is a number representing the superzone's ratio of the total adjusted real-time actual load (MW), for the given superzone and given day.	N
	Day Adj2 RT Ld Ratio Sh :LSE/SprZn	Daily Adjusted Real-Time Load Ratio Share - Load Serving Entity (LSE)/SuperZone is a number representing the LSE's ratio share of adjusted real-time actual load (MW) in the given superzone, for the given day.	N
	Day DAM BPCG UndrFrcst Rat :LSE/SprZn	Daily Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Under-Forecasted Ratio - Load Serving Entity (LSE)/SuperZone is a number representing the overall allocation ratio used to allocate the BPCG payments made to Power Suppliers due to DAM load underforecasting for the given LSE, the given SuperZone, and given day.	N

1.2.3.3.11.2.3 Results

Bill Code	Title	Business Description	DSS Value
815	Day DAM BPCG UnderFrcst :LSE/SprZn ($)	Daily Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Under-Forecasted Load Settlement -Load Serving Entity(LSE)/SuperZone ($) is a number representing the allocation of	Y

Bill Code	Title	Business Description	DSS Value
		DAM BPCG due to under-forecasted DAM load for a given LSE, the given SuperZone, and the given day.	

1.2.3.3.11.3 Eligibility

Load Serving Entities will receive an allocation of Day Ahead Market (DAM) Bid Production Cost Guarantee ($) due to Under-forcasted Load for each NYISO SuperZone in which it serves load if all of the following conditions exist:

- DAM Bid Production Cost Guarantee (BPCG) payments were allocated to power suppliers as a result of DAM load underforcasting (Day DAM Forecasted BPCG ($) > 0).

1.2.3.3.11.4 Settlement Algorithm

Day DAM BPCG UnderFrcst :LSE/SprZn ($) is calculated as:

Day DAM BPCG UnderFrcst :LSE/SprZn ($) =

Day Ttl NYISO DAM UndrFrcst BPCG ($) * Day DAM BPCG UndrFrcst Rat :LSE/SprZn

Where Day DAM BPCG UndrFrcst Rat :LSE/SprZn is calculated as:

Day DAM BPCG UndrFrcst Rat :LSE/SprZn =

Day DAM Frcst Accuracy Ratio :SprZn * Day SprZn Adj RT Ld Ratio Sh * Day Adj2 RT Ld Ratio Sh :LSE/SprZn

Where Day DAM Frcst Accuracy Ratio :SprZn is calculated as:

Day DAM Frcst Accuracy Ratio :SprZn =

Day Adj RT Actual Load :SprZn (MW) ÷ Day Adj Frcst Load :SprZn (MW)

NOTE: Day DAM Frcst Accuracy Ratio :SprZn is bound by 0 and 1 (If Day DAM Frcst Accuracy Ratio :SprZn > 1, then Day DAM Frcst Accuracy Ratio :SprZn = 1, or If Day DAM Frcst Accuracy Ratio :SprZn < 0, then Day DAM Frcst Accuracy Ratio :SprZn = 0).

Where Day SprZn Adj RT Ld Ratio Sh is calculated as:

Day SprZn Adj RT Ld Ratio Sh =

Day Adj RT Actual Load :SprZn (MW) ÷ Day Total Adj RT Actual Load (MW)

Where:

Day Total Adj RT Actual Load (MW) =

∑ Day Adj RT Actual Load :SprZn (MW) for all SuperZones

Where Day Adj2 RT Ld Ratio Sh :LSE/SprZn is calculated as:

Day Adj2 RT Ld Ratio Sh :LSE/SprZn =

Day Adj2 RT Actual Load :LSE/SprZn (MW) ÷ Day Adj2 RT Actual Load :SprZn (MW)

Where:

Day Adj2 RT Actual Load :LSE/SprZn (MW) =

Max{Day RT LSE Load :LSE/SprZn (MW) - Day DAM VLoad Energy :VBE/SprZn (MW) - Day DAM Sched Load :LSE/SprZn (MW), 0} + Day DAM VSupply Energy :VBE/SprZn (MW)

Day Adj2 RT Actual Load :SprZn (MW) =

∑ Day Adj2 RT Actual Load :LSE/SprZn (MW) for all Load Serving Entities

NOTE: Day Adj2 RT Actual Load :SprZn (MW) cannot be equal to zero (to avoid dividing by zero). In this case, the denominator = 1 (If Day Adj2 RT Actual Load :SprZn (MW) = 0, then Day Adj2 RT Actual Load :SprZn (MW) = 1).

Where Day Adj RT Actual Load :SprZn (MW) and Day Adj Frcst Load :SprZn (MW) are calculated as:

Day Adj RT Actual Load :SprZn (MW) =

Max{Day RT LSE Load :SprZn (MW) + Day DAM VSupply Energy :SprZn (MW) - Day DAM VLoad Energy :SprZn (MW) - Day DAM Sched Load :SprZn (MW), 0}

Day Adj Frcst Load :SprZn (MW) =

Max{Day DAM NYISO Frcst Load :SprZn (MW) + Day DAM VSupply Energy :SprZn (MW) - Day DAM VLoad Energy :SprZn (MW) - Day DAM Sched Load :SprZn (MW), 0}

NOTE: Day Adj Frcst Load :SprZn (MW) cannot be equal to zero (to avoid dividing by zero). In this case, the denominator = 1 (If Day Adj Frcst Load :SprZn (MW) = 0, then Day Adj Frcst Load :SprZn (MW) = 1).

1.2.3.3.11.5 Additional Information

Grouped Generators that are Out of Merit for Under-Forecasted Load:

The Total NYISO DAM BPCG Under-Forecasted Load payments to Power Suppliers includes any uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit as a result of NYISO's effort to meet additional forecasted load requirements (additional load requirements due to under-forecasting). The entire Grouped Generator set of generators is considered Out of Merit due to under-forecasted load in the DAM.

1.2.3.3.11.6 References

1.2.3.4 Other Settlement Allocations

1.2.3.4.1 Load Serving Entity - Emergency Purchases

1.2.3.4.1.1 Description

The Load Serving Entity (LSE) Emergency Purchases settlement ($) is a charge to LSEs intended to recover NYISO's costs to procure emergency energy (MWh) from external control areas.

In cases where NYISO demand (load) exceeds available supply resources, the NYISO will purchase emergency supply from external control area resources on behalf of the NYCA under existing emergency energy contracts. In general, the NYISO will attempt to obtain enough supply to meet its demand through its common markets/channels. If demand still exceeds supply, emergency purchases will be made. These emergency purchases can be made from NYISO's 4 external control areas: Hydro Quebec, ISO-New England, PJM, and Ontario Hydro.

The costs of the emergency energy purchases typically are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Market Participants acting as a LSE will be charged a portion of the total NYISO Emergency Purchases costs based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.4.1.2 Required Data Elements

1.2.3.4.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr NYISO Emergency Purch :ISO-NE ($)	Hourly Emergency Purchases - ISO-New England ($) is a number representing the cost of Emergency Energy Purchases made from ISO New England, for the given hour.	N
	Hr NYISO Emergency Purch :PJM ($)	Hourly Emergency Purchases - PJM ($) is a number representing the cost of Emergency Energy Purchases made from PJM for the given hour.	N

	Hr NYISO Emergency Purch :OH ($)	Hourly Emergency Purchases - Ontario Hydro Quebec ($) is a number representing the cost of Emergency Energy Purchases made from Ontario Hydro for the given hour.	N
	Hr NYISO Emergency Purch :HQ ($)	Hourly Emergency Purchases - Hydro Quebec ($) is a number representing the cost of Emergency Energy Purchases made from Hydro Quebec for the given hour.	N
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.2.3.4.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO Emergency Purch ($)	Hourly Emergency Purchases ($) is a number representing the cost of Emergency Energy Purchases made from PJM, Ontario Hydro, ISO New England, and Hydro Quebec for the given hour.	Y
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.2.3.4.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Emergency Purch Stlmnt :LSE ($)	Hourly Emergency Purchases Settlement - Load Serving Entity ($) is a number representing the Emergency Energy Purchases settlement for an	Y

Bill Code	Title	Business Description	DSS Value
		LSE for the given hour. It is the LSE's pro-rated share of Emergency Energy Purchases charges based upon load ratio share.	

1.2.3.4.1.3 Eligibility

Load Serving Entities will receive a charge for Emergency Purchases ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There was an Emergency Purchase(s) made from one of the external control areas (PJM, Ontario Hydro, ISO-NE, Hydro Quebec) during the hour (Hr Total NYISO Emergency Purch ($) > 0).

1.2.3.4.1.4 Settlement Algorithm

Hr Emergency Purch Stlmnt :LSE ($) is calculated as:

Hr Emergency Purch Stlmnt :LSE ($) =

Hr Total NYISO Emergency Purch ($) * Hr RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Emergency Purch ($) =

Hr NYISO Emergency Purch :ISO-NE ($) + Hr NYISO Emergency Purch :PJM ($) + Hr NYISO Emergency Purch :OH ($) + Hr NYISO Emergency Purch :HQ ($)

1.2.3.4.1.5 Additional Information

None

1.2.3.4.1.6 References

1.2.3.4.2 Load Serving Entity - Emergency Sales

1.2.3.4.2.1 Description

The Load Serving Entity (LSE) Emergency Sales settlement ($) is a payment to LSEs intended to allocate NYISO's revenue from external control areas when they purchase emergency energy (MWh) from NYISO.

In cases where an external control area's demand (load) exceeds its available supply resources, the external control area will purchase emergency supply from NYISO under existing emergency energy contracts. These emergency sales can be made to NYISO's 4 external control areas: Hydro Quebec, ISO-New England, PJM, and Ontario Hydro.

The revenue from the emergency energy sales typically are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Market Participants acting as a LSE will be paid a portion of the total NYISO Emergency Sales revenue based on the LSE's load ratio share (Total LSE Load (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.4.2.2 Required Data Elements

1.2.3.4.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr NYISO Emergency Sales :HQ ($)	Hourly NYISO Emergency Sales - Hydro Quebec ($) is a number representing the revenue generated from Emergency Energy Sales made to Hydro Quebec for the given hour.	N
	Hr NYISO Emergency Sales :PJM ($)	Hourly NYISO Emergency Sales - PJM ($) is a number representing the revenue generated from Emergency Energy Sales made to PJM for the given hour.	N
	Hr NYISO Emergency Sales :OH ($)	Hourly NYISO Emergency Sales - Ontario Hydro ($) is a number representing the revenue generated from Emergency Energy Sales made to Ontario Hydro for the given hour.	N
	Hr NYISO Emergency Sales :ISO-NE ($)	Hourly NYISO Emergency Sales - ISO- New England ($) is a number representing the revenue generated from Emergency Energy Sales made to ISO-New England for the given hour.	N
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y

	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.2.3.4.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO Emergency Sales ($)	Hourly Total NYISO Emergency Sales ($) is a number representing the revenue generated from Emergency Energy Sales made to PJM, Ontario Hydro, ISO New England, and Hydro Quebec for the given hour.	Y
	Hr RT LSE Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Load Serving Entity Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given LSE's load to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.2.3.4.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Emrgency Sales Stlmnt :LSE ($)	Hourly Emergency Sales Settlement - Load Serving Entity ($) is a number representing the Emergency Energy Sales settlement for an LSE for the given hour. It is the LSE's pro-rated share of Emergency Energy Sales based upon load ratio share.	Y

1.2.3.4.2.3 Eligibility

Load Serving Entities will receive a payment for Emergency Sales ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

- There was an Emergency Sale(s) made to one of the external control areas (PJM, Ontario Hydro, ISO-NE, Hydro Quebec) during the hour (Hr Total NYISO Emergency Sales ($) > 0).

1.2.3.4.2.4 Settlement Algorithm

Hr Emergency Sales Stlmnt :LSE ($) is calculated as:

Hr Emergency Sales Stlmnt :LSE ($) =

Hr Total NYISO Emergency Sales ($) * Hr RT LSE Ld Ratio Sh :LSE, Exp, WT

Where:

Hr RT LSE Ld Ratio Sh :LSE, Exp, WT =

Hr RT LSE Load (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Emergency Sales ($) =

Hr NYISO Emergency Sales :ISO-NE ($) + Hr NYISO Emergency Sales :PJM ($) + Hr NYISO Emergency Sales :OH ($) + Hr NYISO Emergency Sales :HQ ($)

1.2.3.4.2.5 Additional Information

None

1.2.3.4.2.6 References

1.2.3.4.3 Load Serving Entity - NTAC

1.2.3.4.3.1 Description

The Load Serving Entity (LSE) New York Power Authority (NYPA) Transmission Access Charge (NTAC) settlement ($) is a charge to LSEs intended to cover NYPA's transmission revenue requirements.

All NTAC charges made by NYISO are collected and paid to NYPA. Load Serving Entities and Transaction Customers (exports and wheel-throughs) receive this charge based on their real-time actual load or transaction schedule.

Market Participants acting as a LSE will be charged a portion of the total estimated NYPA transmission revenue requirements based on their actual real-time load consumption. It is determined at the hourly-level for each LSE that purchased energy in the NYISO energy markets.

1.2.3.4.3.2 Required Data Elements

1.2.3.4.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value

603	Hr NTAC Rate ($/MW)	Hourly New York Power Authority Transmission Access Charge Rate ($/MW) is a number representing the NTAC rate based on NYPA's annual transmission revenue requirement (not recovered through NYPA's TSC and other revenues) for the given hour.	Y
	Hr RT LSE Load (MWh)	Hourly Real-Time Load Serving Entity Load (MWh) is a number representing the amount of real time load (plus import and internal bilateral transaction energy) for a given LSE across all subzones within NYISO for the given hour.	Y

1.2.3.4.3.2.2 Intermediates

None

1.2.3.4.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
604	Hr NTAC Stlmnt :LSE ($)	Hourly New York Power Authority Transmission Access Charge Settlement - Load Serving Entity ($) is a number representing the amount of NTAC charges determined by NYISO for the given LSE's load for the given hour.	Y

1.2.3.4.3.3 Eligibility

Load Serving Entities will receive a charge for NYPA Transmission Access Charge ($) if all of the following conditions exist:

- The Load Serving Entity purchased energy to meet their load requirements from the NYISO energy markets (Hr RT LSE Load (MW) > 0).

  NOTE: Hr RT LSE Load (MW) is the sum of market energy purchased from NYISO plus import and internal bilateral transaction energy purchased from 3rd Parties.

1.2.3.4.3.4 Settlement Algorithm

Hr NTAC Stlmnt :LSE ($) is calculated as:

Hr NTAC Stlmnt :LSE ($) =

Hr NTAC Rate ($/MW) * Hr RT LSE Load (MWh)

1.2.3.4.3.5 Additional Information

None

1.2.3.4.3.6 References

1.2.3.4.4 Load Serving Entity - DADRP Allocation

1.2.3.4.4.1 Description

The Load Serving Entity (LSE) Day Ahead Demand Response Program (DADRP) Allocation settlement ($) is designed to recover through allocations to Load Serving Entities (LSE) NYISO's payments made to DADRP customers.

The DADRP is designed as an incentive to Market Participants with curtailable loads (or self-supply generators) to reduce consumption when DAM prices rise above desired levels. The DADRP can reduce DAM demand volumes and prices, when curtailable load is scheduled in the Day Ahead Market (DAM).

The settlement is determined by multiplying the Load Serving Entity's load ratio share (see below for algorthim of this unique ratio share) in a particular superzone by the determined total DADRP costs in that superzone. This settlement is determined at the daily-level for each superzone in which the Load Serving Entity purchased load.

1.2.3.4.4.2 Required Data Elements

1.2.3.4.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day DADRP Cost :West SprZn ($)	Daily Day Ahead Demand Response Program (DADRP) Cost - West SuperZone ($) is a number representing the total of NYISO's payments to Demand Response Providers for DADRP in the West SuperZone for the given day.	N
	Day DADRP Cost :East SprZn ($)	Daily Day Ahead Demand Response Program (DADRP) Cost - East SuperZone ($) is a number representing the total of NYISO's payments to Demand Response Providers for DADRP in the East SuperZone for the given day.	N
	Day DADRP Cost :ConEd SprZn ($)	Daily Day Ahead Demand Response Program (DADRP) Cost - Consolidated Edison (ConEd) SuperZone ($) is a number representing the total of NYISO's payments to Demand Response Providers for DADRP in the Consolidated Edison SuperZone for the given day.	N
	Day DADRP Cost :LI SprZn ($)	Daily Day Ahead Demand Response Program (DADRP) Cost - Long Island (LI) SuperZone ($) is a number representing the total of NYISO's payments to Demand Response Providers for DADRP in the Long Island SuperZone for the given day.	N
	Day RT LSE Load :West SprZn (MW)	Daily Real-Time (RT) Load Serving Entity (LSE) Load - West Superzone (MW) is a number representing the amount of RT actual load (MW) the given LSE had in the West SuperZone for the given day.	N

Bill Code	Title	Business Description	DSS Value
	Day RT LSE Load :East SprZn (MW)	Daily Real-Time (RT) Load Serving Entity (LSE) Load - East Superzone (MW) is a number representing the amount of RT actual load (MW) the given LSE had in the East SuperZone for the given day.	N
	Day RT LSE Load :ConEd SprZn (MW)	Daily Real-Time (RT) Load Serving Entity (LSE) Load - Consolidated Edison (ConEd) Superzone (MW) is a number representing the amount of RT actual load (MW) the given LSE had in the Consolidated Edison SuperZone for the given day.	N
	Day RT LSE Load :LI SprZn (MW)	Daily Real-Time (RT) Load Serving Entity (LSE) Load - Long Island (LI) Superzone (MW) is a number representing the amount of RT actual load (MW) the given LSE had in the Long Island SuperZone for the given day.	N
	Day RT Total Load :West SprZn (MW)	Day Real-Time (RT) Total Load - West Superzone (MW) is a number representing the total actual real-time load (MW) for the West SuperZone for the given day.	N
	Day RT Total Load :East SprZn (MW)	Day Real-Time (RT) Total Load - East Superzone (MW) is a number representing the total actual real-time load (MW) for the East SuperZone for the given day.	N
	Day RT Total Load :ConEd SprZn (MW)	Day Real-Time (RT) Total Load - Consolidated Edison (ConEd) Superzone (MW) is a number representing the total actual real-time load (MW) for the Consolidated Edison SuperZone for the given day.	N
	Day RT Total Load :LI SprZn (MW)	Day Real-Time (RT) Total Load - Long Island (LI) Superzone (MW) is a number representing the total actual real-time load (MW) for the Long Island SuperZone for the given day.	N
	Day Allocation Factor :West SprZn		N
	Day Allocation Factor :ConEd SprZn		N
	Day Allocation Factor :LI SprZn		N
	Day Allocation Factor :NYISO		N
	Day Total NYISO DADRP Cost ($)	Daily Total NYISO Day Ahead Demand Response Program (DADRP) Cost ($) is a number representing the total of NYISO's payments to Demand Response Providers for DADRP for the given day (total of all 4 SuperZones: West, East, ConEd, & LI).	N

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO RT LSE Load (MW)	Daily Total NYISO Real-Time (RT) Load Serving Entity (LSE) Load (MW) is a number representing the amount of RT actual load (MW) for the given day (total of all 4 SuperZones: West, East, ConEd, & LI).	N

1.2.3.4.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day Cost Alloc Ratio :West SprZn		N
	Day Cost Alloc Ratio :East SprZn		N
	Day Cost Alloc Ratio :ConEd SprZn		N
	Day Cost Alloc Ratio :LI SprZn		N

1.2.3.4.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
814	Day DADRP Stlmnt :LSE ($)	Daily Day Ahead Demand Response Program (DADRP) Settlement -Load Serving Entity (LSE) ($) is a number representing the DADRP allocation for the given LSE for the given day.	Y

1.2.3.4.4.3 Eligibility

Load Serving Entities will receive a charge for DADRP charge allocation ($) if all of the following conditions exist:

- The Load Serving Entitiy purchased load in the Real Time Market within a particular Super Zone.
    - Day RT LSE Load :West SprZn (MW) > 0 or
    - Day RT LSE Load :East SprZn (MW) > 0 or
    - Day RT LSE Load :ConEd SprZn (MW) > 0 or
    - Day RT LSE Load :LI SprZn (MW) > 0
- The total net cost for DADRP across all NYISO superzones is greater than zero (Day Total NYISO DADRP Cost ($) > 0)

1.2.3.4.4.4 Settlement Algorithm

Day DADRP Stlmnt :LSE ($) is calculated as:

Day DADRP Stlmnt :LSE ($) =

Day Cost Alloc Ratio :West SprZn * {Day RT LSE Load :West SprZn (MW) ÷ Day RT Total Load :West SprZn (MW)}

+ Day Cost Alloc Ratio :East SprZn * {Day RT LSE Load :East SprZn (MW) ÷ Day RT Total Load :East SprZn (MW)}

+ Day Cost Alloc Ratio :ConEd SprZn * {Day RT LSE Load :ConEd SprZn (MW) ÷ Day RT Total Load :ConEd SprZn (MW)}

+ Day Cost Alloc Ratio :LI SprZn * {Day RT LSE Load :LI SprZn (MW) ÷ Day RT Total Load :LI SprZn (MW)}

NOTE: The above portion of this calculation allocates the cost per superzone by LSE ratio per superzone. Also, an LSE can be in more than one superzone.

Where Daily Cost Allocation Ratio for each SuperZone is calculated as:

Day Cost Alloc Ratio :West SprZn =

(Day Total NYISO DADRP Cost ($) * (Day RT Total Load :West SprZn (MW) ÷ Day Total NYISO RT LSE Load (MW))) * Day Allocation Factor :NYISO

+

(Day DADRP Cost :West SprZn ($) * Day Allocation Factor :West SprZn)

+

(((Day DADRP Cost :West SprZn ($) + Day DADRP Cost :East SprZn ($) + Day DADRP Cost :LI SprZn ($)) * (Day RT Total Load :West SprZn (MW) ÷ (Day RT Total Load :West SprZn (MW) + Day RT Total Load :East SprZn (MW) + Day RT Total Load :LI SprZn (MW)))) * Day Allocation Factor :ConEd SprZn)

+

(((Day DADRP Cost :West SprZn ($) + Day DADRP Cost :East SprZn ($) + Day DADRP Cost :ConEd SprZn ($)) * (Day RT Total Load :West SprZn (MW) ÷ (Day RT Total Load :West SprZn (MW) + Day RT Total Load :East SprZn (MW) + Day RT Total Load :ConEd SprZn (MW)))) * Day Allocation Factor :LI SprZn)

Day Cost Alloc Ratio :East SprZn =

(Day Total NYISO DADRP Cost ($) * (Day RT Total Load :East SprZn (MW) ÷ Day Total NYISO RT LSE Load (MW))) * Day Allocation Factor :NYISO

+

(((Day DADRP Cost :East SprZn ($) + Day DADRP Cost :LI SprZn ($) + Day DADRP Cost :ConEd SprZn ($)) * (Day RT Total Load :East SprZn (MW) ÷ (Day RT Total Load :East SprZn (MW) + Day RT Total Load :LI SprZn (MW) + Day RT Total Load :ConEd SprZn (MW)))) * Day Allocation Factor :West SprZn)

+

(((Day DADRP Cost :West SprZn ($) + Day DADRP Cost :East SprZn ($) + Day DADRP Cost :LI SprZn ($)) * (Day RT Total Load :East SprZn (MW)÷ (Day RT Total Load :West SprZn (MW) + Day RT Total Load :East SprZn (MW) + Day RT Total Load :LI SprZn (MW)))) * Day Allocation Factor :ConEd SprZn)

+

(((Day DADRP Cost :West SprZn ($) + Day DADRP Cost :East SprZn ($) + Day DADRP Cost :ConEd SprZn ($)) * (Day RT Total Load :East SprZn (MW) ÷ (Day RT Total Load :West SprZn (MW) + Day RT Total Load :East SprZn (MW) + Day RT Total Load :ConEd SprZn (MW)))) * Day Allocation Factor :LI SprZn)

Day Cost Alloc Ratio :ConEd SprZn =

(Day Total NYISO DADRP Cost ($) * (Day RT Total Load :ConEd SprZn (MW) ÷ Day Total NYISO RT LSE Load (MW))) * Day Allocation Factor :NYISO

+

(((Day DADRP Cost :East SprZn ($) + Day DADRP Cost :LI SprZn ($) + Day DADRP Cost :ConEd SprZn ($)) * (Day RT Total Load :ConEd SprZn (MW) ÷ (Day RT Total Load :East SprZn (MW) + Day RT Total Load :LI SprZn (MW) + Day RT Total Load :ConEd SprZn (MW)))) * Day Allocation Factor :West SprZn)

+

(Day DADRP Cost :ConEd SprZn ($) * Day Allocation Factor :ConEd SprZn)

+

(((Day DADRP Cost :West SprZn ($) + Day DADRP Cost :East SprZn ($) + Day DADRP Cost :ConEd SprZn ($)) * (Day RT Total Load :ConEd SprZn (MW) ÷ (Day RT Total Load :West SprZn (MW) + Day RT Total Load :East SprZn (MW) + Day RT Total Load :ConEd SprZn (MW)))) * Day Allocation Factor :LI SprZn)

Day Cost Alloc Ratio :LI SprZn =

(Day Total NYISO DADRP Cost ($) * (Day RT Total Load :LI SprZn (MW) ÷ Day Total NYISO RT LSE Load (MW))) * Day Allocation Factor :NYISO

+

(((Day DADRP Cost :East SprZn ($) + Day DADRP Cost :LI SprZn ($) + Day DADRP Cost :ConEd SprZn ($)) * (Day RT Total Load :LI SprZn (MW) ÷ (Day RT Total Load :East SprZn (MW) + Day RT Total Load :LI SprZn (MW) + Day RT Total Load :ConEd SprZn (MW)))) * Day Allocation Factor :West SprZn)

+

(((Day DADRP Cost :West SprZn ($) + Day DADRP Cost :East SprZn ($) + Day DADRP Cost :LI SprZn ($)) * (Day RT Total Load :LI SprZn (MW) ÷ (Day RT Total Load :West SprZn (MW) + Day RT Total Load :East SprZn (MW) + Day RT Total Load :LI SprZn (MW)))) * Day Allocation Factor :ConEd SprZn)

+

(Day DADRP Cost :LI SprZn ($) * Day Allocation Factor :LI SprZn)

1.2.3.4.4.5 Additional Information

None

1.2.3.4.4.6 References

1.3 Transaction Customers

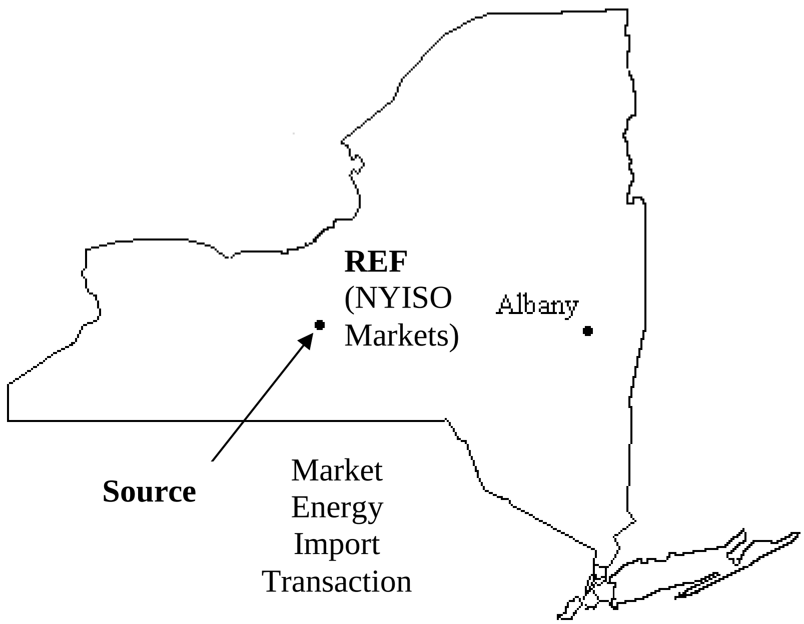
1.3.1 Transaction Day-Ahead Market Energy (Import, Export)

1.3.1.1 Import

1.3.1.1.1 Description

The Transaction Day Ahead Market Energy settlement for Imports is intended to credit Transaction Customers for Day-Ahead Market (DAM) energy scheduled via Market Energy Import Transactions.

Market Energy Import Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who offer their resources to the NYISO wholesale energy markets. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and the NYISO reference bus (represents the NYISO energy markets) as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.



The Transaction Day Ahead Market Energy settlement is based on the Transaction Contract's DAM scheduled energy (MWh), multiplied times the three DAM price ($/MW) components (energy, loss, and congestion) at the Transaction Contract's source location. The settlement is determined at the hourly-level for each Market Energy Import Transaction.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Transaction Customer Settlement for energy sold to the NYISO DAM.
- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by energy sales to the NYISO DAM.
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system by energy sales to the NYISO DAM.

1.3.1.1.2 Required Data Elements

1.3.1.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel through, internal).	Y
	Hr DAM Energy Price :Src ($/MW)	Hourly Day Ahead Market Energy Price - Source ($/MW) is a number representing the day ahead market price of energy component at a transaction source location.	Y

	Hr DAM Loss Price :Src ($/MW)	Hourly Day Ahead Market Loss Price - Source ($/MW) is a number representing the day ahead market price of losses component at a transaction source location.	Y
	Hr DAM Cong Price :Src ($/MW)	Hourly Day Ahead Market Congestion Price - Source ($/MW) is a number representing the day ahead market price of congestion component at a transaction source location.	Y
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market.	Y

1.3.1.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
511	Hr DAM LBMP Energy (MWh)	Day Ahead Market Scheduled LBMP Transaction Energy (MWh) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market for LBMP import/export transactions to/from the NYISO Reference Bus.	Y
512	Hr DAM LBMP Energy Stlmnt ($)	Day Ahead Market LBMP Energy Settlement ($) is a number representing the BAS-determined LBMP energy component settlement for the given transaction in the NYISO Day Ahead Market.	Y
513	Hr DAM LBMP Loss Stlmnt ($)	Day Ahead Market LBMP Loss Settlement ($) is a number representing the BAS-determined LBMP energy loss component settlement for the given transaction in the NYISO Day Ahead Market.	Y
514	Hr DAM LBMP Cong Stlmnt ($)	Day Ahead Market LBMP Congestion Settlement ($) is a number representing the BAS-determined LBMP energy congestion component settlement for the given transaction in the NYISO Day Ahead Market.	Y

1.3.1.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
515	Hr DAM Total LBMP Stlmnt ($)	Total Day Ahead Market LBMP Settlement ($) is a number representing the total BAS-determined LBMP energy settlement for the given transaction in the NYISO Day Ahead Market; sum of the DAM LBMP energy components (energy, loss, & congestion).	Y

1.3.1.1.3 Eligibility

Transaction Customers will receive a payment for Day Ahead Market (DAM) Energy - Imports ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Energy Import Transaction
    - Source Location is a NYISO external control area proxy bus
    - Sink Location is the NYISO market reference proxy bus
    - TransCnt Transaction Category = Import
- The transaction contract is scheduled in the NYISO DAM (Hr DAM Sched Trans :Trans (MW) <> 0).

1.3.1.1.4 Settlement Algorithm

Hr DAM Total LBMP Stlmnt ($) is calculated as:

If the given Transaction Contract is a Market Energy Import Transaction:

- TransCnt Transaction Type = "LBMP"
- TransCnt Transaction Category = "Import"

__Hr DAM Total LBMP Stlmnt ($) =

Hr DAM LBMP Energy Stlmnt ($) + Hr DAM LBMP Loss Stlmnt ($) - Hr DAM LBMP Cong Stlmnt ($)

Where:

Hr DAM LBMP Energy Stlmnt ($) =

Hr DAM LBMP Energy (MWh) * Hr DAM Energy Price :Src ($/MW)

Hr DAM LBMP Loss Stlmnt ($) =

Hr DAM LBMP Energy (MWh) * Hr DAM Loss Price :Src ($/MW)

Hr DAM LBMP Energy Stlmnt ($) =

Hr DAM LBMP Energy (MWh) * Hr DAM Cong Price :Src ($/MW)

And Hr DAM LBMP Energy (MWh) is calculated as:

Hr DAM LBMP Energy (MWh) = Hr DAM Sched Trans :Trans (MW)

1.3.1.1.5 Additional Information

Hr DAM Total Price :Src ($/MW) can be calculated as:

Hr DAM Total Price :Src ($/MW) =

Hr DAM Energy Price :Src ($/MW) + Hr DAM Loss Price :Src ($/MW) - Hr DAM Cong Price :Src ($/MW)

1.3.1.1.6 References

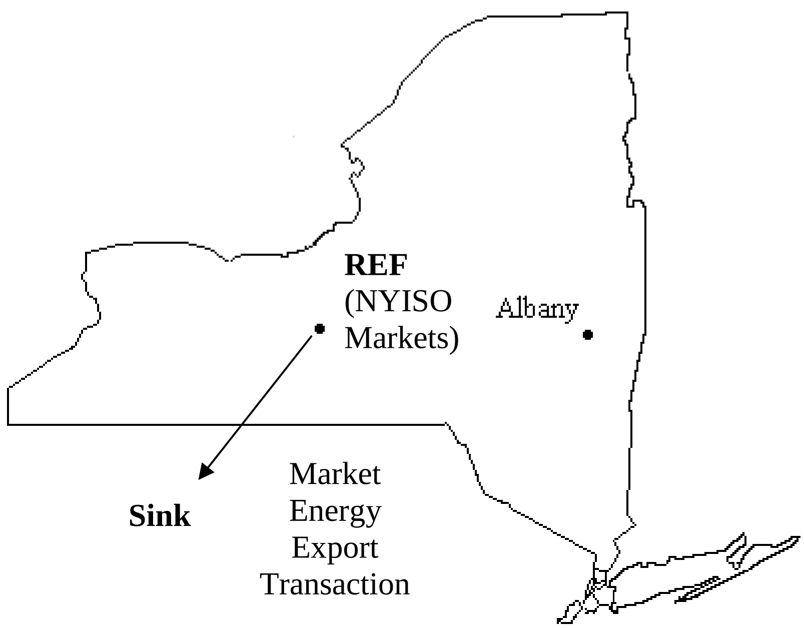
The applicability of Day Ahead Market Energy Import Transaction Payments is described within Article 4, Section 4.16 of the MST (Market Administration and Control Area Services Tariff).

1.3.1.2 Export

1.3.1.2.1 Description

The Transaction Day Ahead Market Energy settlement for Exports is intended to charge Transaction Customers for Day-Ahead Market (DAM) energy scheduled via Market Energy Export Transactions.

Market Energy Export Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO to supply energy to meet load requirements in NYCA-external control areas. These transactions are scheduled with the NYISO reference bus (represents the NYISO energy markets) as the scheduled Point of Injection (POI) and the NYISO external proxy bus (represents an external control area) as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.



The Transaction Day Ahead Market Energy settlement is based on the Transaction Contract's DAM scheduled energy (MWh), multiplied times the three zonal DAM price ($/MW) components (energy, loss, and congestion) at the Transaction Contract's sink location. The settlement is determined at the hourly-level for each Market Energy Export Transaction.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Transaction Customer Settlement for energy purchased from the NYISO DAM.

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by energy purchases from the NYISO DAM.
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system by energy purchases from the NYISO DAM.

1.3.1.2.2 Required Data Elements

1.3.1.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel through, internal).	Y
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	Y
	Hr DAM Energy Price :Sink ($/MW)	Hourly Day Ahead Market Energy Price - Sink ($/MW) is a number representing the day ahead market price of energy component at a transaction sink location.	Y
	Hr DAM Loss Price :Sink ($/MW)	Hourly Day Ahead Market Loss Price - Sink ($/MW) is a number representing the day ahead market price of losses component at a transaction sink location.	Y
	Hr DAM Cong Price :Sink ($/MW)	Hourly Day Ahead Market Congestion Price - Sink ($/MW) is a number representing the day ahead market price of congestion component at a transaction sink location.	Y
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y

1.3.1.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
511	Hr DAM LBMP Energy (MWh)	Day Ahead Market Scheduled LBMP Transaction Energy (MWh) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market for LBMP import/export transactions to/from the NYISO Reference Bus.	Y
512	Hr DAM LBMP Energy Stlmnt ($)	Day Ahead Market LBMP Energy Settlement ($) is a number representing the BAS-determined LBMP energy component settlement for the given	Y

Bill Code	Title	Business Description	DSS Value
		transaction in the NYISO Day Ahead Market.	
513	Hr DAM LBMP Loss Stlmnt ($)	Day Ahead Market LBMP Loss Settlement ($) is a number representing the BAS-determined LBMP energy loss component settlement for the given transaction in the NYISO Day Ahead Market.	Y
514	Hr DAM LBMP Cong Stlmnt ($)	Day Ahead Market LBMP Congestion Settlement ($) is a number representing the BAS-determined LBMP energy congestion component settlement for the given transaction in the NYISO Day Ahead Market.	Y

1.3.1.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
515	Hr DAM Total LBMP Stlmnt ($)	Total Day Ahead Market LBMP Settlement ($) is a number representing the total BAS-determined LBMP energy settlement for the given transaction in the NYISO Day Ahead Market; sum of the DAM LBMP energy components (energy, loss, & congestion).	Y

1.3.1.2.3 Eligibility

Transaction Customers will receive a charge for Day Ahead Market (DAM) Energy - Exports ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Energy Export Transaction
  - Source Location is the NYISO market reference proxy bus
  - Sink Location is a NYISO external control area proxy bus
  - TransCnt Transaction Category = Export
- The transaction contract is scheduled in the NYISO DAM (Hr DAM Sched Trans :Trans (MW) <> 0).

1.3.1.2.4 Settlement Algorithm

Hr DAM Total LBMP Stlmnt ($) is calculated as:

If the given Transaction Contract is a Market Energy Export Transaction:

- TransCnt Transaction Type = “LBMP”
- TransCnt Transaction Category = “Export”

Hr DAM Total LBMP Stlmnt ($) =

Hr DAM LBMP Energy Stlmnt ($) + Hr DAM LBMP Loss Stlmnt ($) - Hr DAM LBMP Cong Stlmnt ($)

Where:

Hr DAM LBMP Energy Stlmnt ($) =

Hr DAM LBMP Energy (MWh) * Hr DAM Energy Price :Sink ($/MW)

Hr DAM LBMP Loss Stlmnt ($) =

Hr DAM LBMP Energy (MWh) * Hr DAM Loss Price :Sink ($/MW)

Hr DAM LBMP Energy Stlmnt ($) =

Hr DAM LBMP Energy (MWh) * Hr DAM Cong Price :Sink ($/MW)

And Hr DAM LBMP Energy (MWh) is calculated as:

Hr DAM LBMP Energy (MWh) = Hr DAM Sched Trans :Trans (MW)

1.3.1.2.5 Additional Information

Hr DAM Total Price :Sink ($/MW) can be calculated as:

Hr DAM Total Price :Sink ($/MW) =

Hr DAM Energy Price :Sink ($/MW) + Hr DAM Loss Price :Sink ($/MW) - Hr DAM Cong Price :Sink ($/MW)

1.3.1.2.6 References

The applicability of Day Ahead Market Energy Export Transaction Payments is described within Article 4, Section 4.16 of the MST (Market Administration and Control Area Services Tariff).

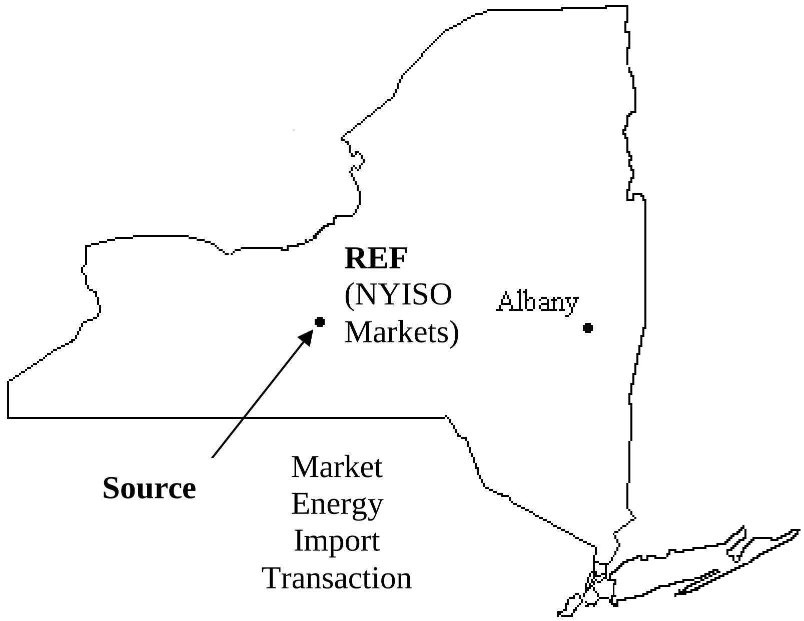
1.3.2 Transaction Balancing Market Energy (Import, Export)

1.3.2.1 Import

1.3.2.1.1 Description

The Transaction Balancing Market Energy settlement for Imports is intended to address any difference between Real-Time (RT) and Day-Ahead Market (DAM) energy scheduled via Market Energy Import Transactions.

Market Energy Import Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who offer their resources to the NYISO wholesale energy markets. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and the NYISO reference bus (represents the NYISO energy markets) as the scheduled Point of Withdrawal (POW). RT Transactions are scheduled through the Balancing Market Evaluation (BME) transaction scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.



The Transaction Balancing Market Energy settlement is based on the Transaction Contract's RT scheduled energy (MWh) net DAM scheduled energy (MWh), multiplied times the three RT price ($/MW) components (energy, loss, and congestion) at the Transaction Contract's source location. This settlement can either be a payment (when RT schedule > DAM schedule) or a charge (when RT schedule < DAM schedule) to the Transaction Customer due to the nature of the balancing market. It is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Market Energy Import Transaction.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Transaction Customer Settlement for balancing market energy purchased from or sold to the NYISO Balancing Energy Market.
- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by balancing market energy purchases/sales in the NYISO Balancing Market.
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system by balancing market energy purchases/sales in the NYISO Balancing Market.

1.3.2.1.2 Required Data Elements

1.3.2.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel through, internal).	Y

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	N
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a given transaction, for an SCD interval.	Y
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y
	SCD RT Energy Price :Src ($/MW)	Real-Time Energy Price - Source ($/MW) is a number representing the real-time price of energy component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.2.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt LBMP Energy (MW)	Balancing Market LBMP Energy (MW) is a number representing the BAS-determined amount of balancing market LBMP energy for the given transaction	Y
	SCD BalMkt LBMP Engy Stlmnt ($)	Balancing Market LBMP Energy Settlement (Energy Component) is a number representing the BAS-determined LBMP energy component settlement for the given transaction in the NYISO balancing market	Y
	SCD BalMkt LBMP Loss Stlmnt ($)	Balancing Market LBMP Energy Settlement Loss Component) is a number representing the BAS-determined LBMP energy loss component settlement for the given transaction in the NYISO balancing market	Y

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt LBMP Cong Stlmnt ($)	Balancing Market LBMP Energy Settlement (Congestion Component) is a number representing the BAS-determined balancing market LBMP energy congestion component settlement for the given transaction	Y

1.3.2.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt Total LBMP Stlmnt ($)	Balancing Market Total LBMP Energy Settlement is a number representing the BAS-determined LBMP energy total settlement for the given transaction in the NYISO balancing market; is the sum of the balancing market LBMP energy, loss, and congestion components	Y

1.3.2.1.3 Eligibility

Transaction Customers will receive a payment for Balancing Market Energy - Imports ($) if all of the following conditions exist:

- The Transaction Contract is a Real-Time Energy Import Transaction
  - Source Location is a NYISO external control area proxy bus
  - Sink Location is the NYISO market reference proxy bus
  - TransCnt Transaction Category = Import

NOTE: A payment is calculated when the transaction contract's Real-Time scheduled energy is greater than that scheduled in the Day Ahead Market, and a charge is calculated when the transaction contract's Real-Time scheduled energy is less than that scheduled in the Day Ahead Market.

1.3.2.1.4 Settlement Algorithm

SCD BalMkt Total LBMP Stlmnt ($) is calculated as:

If the given Transaction Contract is a Market Energy Import Transaction:

- TransCnt Transaction Type = "LBMP"
- TransCnt Transaction Category = "Import"

SCD BalMkt Total LBMP Stlmnt ($) =

SCD BalMkt LBMP Engy Stlmnt ($) + SCD BalMkt LBMP Loss Stlmnt ($) - SCD BalMkt LBMP Cong Stlmnt ($)

Where:

SCD BalMkt LBMP Engy Stlmnt ($) =

SCD BalMkt LBMP Energy (MWh) * SCD RT Energy Price :Src ($/MW)

SCD BalMkt LBMP Loss Stlmnt ($) =

SCD BalMkt LBMP Energy (MWh) * SCD RT Loss Price :Src ($/MW)

SCD BalMkt LBMP Cong Stlmnt ($) =

SCD BalMkt LBMP Energy (MWh) * SCD RT Cong Price :Src ($/MW)

And SCD BalMkt LBMP Energy (MWh) is calculated as:

SCD BalMkt LBMP Energy (MWh) =

{SCD RT Sched Trans :Trans (MW) - Hr DAM Sched Trans :Trans (MW)} * {SCD Interval Seconds ÷ 3,600 seconds} [7]

1.3.2.1.5 Additional Information

SCD RT Total Price :Src ($/MW) can be calculated as:

SCD RT Total Price :Src ($/MW) =

SCD RT Energy Price :Src ($/MW) + SCD RT Loss Price :Src ($/MW) - SCD RT Cong Price :Src ($/MW)

SCD BalMkt LBMP Energy (MWh) can also be calculated as:

SCD BalMkt LBMP Energy (MWh) =

SCD BalMkt LBMP Energy (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

Conditions for using Real-Time or Hour-Ahead Market Prices ($/MW):

The above settlements are settled at LBMPs dependent upon whether the contract(s) are modified (either changed during the Balancing Market Evaluation (BME) process or curtailed during the Hour-Ahead Market) and who modifies them. The three Market Component Prices used in the above settlement calculation are either Real-Time Market Prices or Hour-Ahead Market Prices. If a transaction is not curtailed, or is curtailed by NYISO or an external control area, the real-time price components are used for energy, losses, and congestion. If a transaction is curtailed by the Market Participant, the lesser of the real-time and hour-ahead price components are used for energy, losses, and congestion.

1.3.2.1.6 References

The applicability of Balancing Market Energy Import Transaction Payments is described within Article 4 (Section 4.16) of the MST (Market Administration and Control Area Services Tariff).

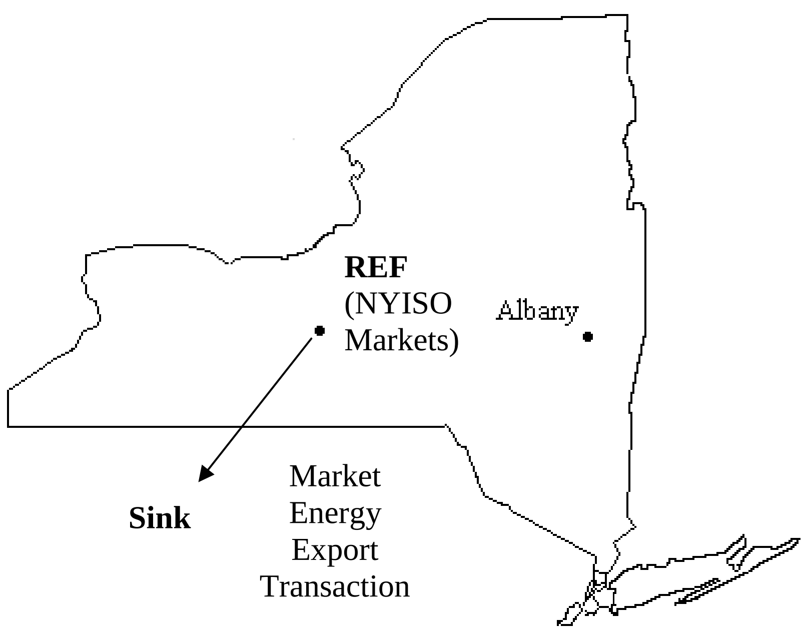
[7] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

1.3.2.2 Export

1.3.2.2.1 Description

The Transaction Balancing Market Energy settlement for Exports is intended to address any difference between Real-Time (RT) and the higher of Day-Ahead Market (DAM) and Hour Ahead Market (HAM) energy scheduled via Market Energy Export Transactions.

Market Energy Export Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO to supply energy to meet load requirements in NYCA-external control areas. These transactions are scheduled with the NYISO reference bus (represents the NYISO energy markets) as the scheduled Point of Injection (POI) and the NYISO external proxy bus (represents an external control area) as the scheduled Point of Withdrawal (POW). RT Transactions are scheduled through the Balancing Market Evaluation (BME) transaction scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.



The Transaction Balancing Market Energy settlement is based on the Transaction Contract's RT scheduled energy (MWh) net the maximum of DAM scheduled energy (MWh) or HAM scheduled energy (MWh), multiplied times the three zonal RT price ($/MW) components (energy, loss, and congestion) at the Transaction Contract's sink location. This settlement can either be a charge (when RT schedule > Max{DAM schedule, HAM schedule}) or a payment (when RT schedule < Max{DAM schedule, HAM schedule}) to the Transaction Customer due to the nature of the balancing market. It is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Market Energy Export Transaction.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Transaction Customer Settlement for balancing market energy purchased from or sold to the NYISO Balancing Energy Market.

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by balancing market energy purchases/sales in the NYISO Balancing Market.
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system by balancing market energy purchases/sales in the NYISO Balancing Market.

1.3.2.2.2 Required Data Elements

1.3.2.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel through, internal).	Y
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	N
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a given transaction, for an SCD interval.	Y
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y
	~~Hr HAM Sched Trans :Trans (MW)~~	~~Hour Ahead Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled by NYISO in the HAM for the given transaction and hour~~	~~Y~~
	SCD RT Energy Price :Sink ($/MW)	Real-Time Energy Price - Sink ($/MW) is a number representing the real-time price of energy component at the sink load bus LBMP per interval	Y
	SCD RT Loss Price :Sink ($/MW)	Real-Time Loss Price - Sink ($/MW) is a number representing the real-time price of loss component at the sink load bus LBMP per interval	Y
	SCD RT Cong Price :Sink ($/MW)	Real-Time Congestion Price - Sink ($/MW) is a number representing the real-time price of congestion component at the sink load bus LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.2.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt LBMP Energy (MW)	Balancing Market LBMP Energy (MW) is a number representing the BAS-determined amount of balancing market LBMP energy for the given transaction	Y
	SCD BalMkt LBMP Engy Stlmnt ($)	Balancing Market LBMP Energy Settlement (Energy Component) is a number representing the BAS-determined LBMP energy component settlement for the given transaction in the NYISO balancing market	Y
	SCD BalMkt LBMP Loss Stlmnt ($)	Balancing Market LBMP Energy Settlement Loss Component) is a number representing the BAS-determined LBMP energy loss component settlement for the given transaction in the NYISO balancing market	Y
	SCD BalMkt LBMP Cong Stlmnt ($)	Balancing Market LBMP Energy Settlement (Congestion Component) is a number representing the BAS-determined balancing market LBMP energy congestion component settlement for the given transaction	Y

1.3.2.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt Total LBMP Stlmnt ($)	Balancing Market Total LBMP Energy Settlement is a number representing the BAS-determined LBMP energy total settlement for the given transaction in the NYISO balancing market; is the sum of the balancing market LBMP energy, loss, and congestion components	Y

1.3.2.2.3 Eligibility

Transaction Customers will receive a charge for Balancing Market Energy - Exports ($) if all of the following conditions exist:

- The Transaction Contract is a Real-Time Energy Export Transaction
  - Source Location is the NYISO market reference proxy bus
  - Sink Location is a NYISO external control area proxy bus
  - TransCnt Transaction Category = Export

NOTE: A charge is calculated when the transaction contract's Real-Time scheduled energy is greater than ~~the maximum of~~ that scheduled in the Day Ahead ~~or Hour Ahead~~ Market, and a payment is calculated when the transaction contract's Real-Time scheduled energy is less than ~~the maximum of~~ that scheduled in the Day Ahead ~~or Hour Ahead~~ Market.

1.3.2.2.4 Settlement Algorithm

SCD BalMkt Total LBMP Stlmnt is calculated as:

If the given Transaction Contract is a Market Energy Import Transaction:

- TransCnt Transaction Type = "LBMP"
- TransCnt Transaction Category = "Export"

SCD BalMkt Total LBMP Stlmnt ($) =

SCD BalMkt LBMP Engy Stlmnt ($) + SCD BalMkt LBMP Loss Stlmnt ($) - SCD BalMkt LBMP Cong Stlmnt ($)

Where:

SCD BalMkt LBMP Engy Stlmnt ($) =

SCD BalMkt LBMP Energy (MWh) * SCD RT Energy Price :Sink ($/MW)

SCD BalMkt LBMP Loss Stlmnt ($) =

SCD BalMkt LBMP Energy (MWh) * SCD RT Loss Price :Sink ($/MW)

SCD BalMkt LBMP Cong Stlmnt ($) =

SCD BalMkt LBMP Energy (MWh) * SCD RT Cong Price :Sink ($/MW)

And SCD BalMkt LBMP Energy (MWh) is calculated as:

SCD BalMkt LBMP Energy (MWh) =

~~[~~{SCD RT Sched Trans :Trans (MW) - ~~Max{~~Hr DAM Sched Trans :Trans (MW)~~, Hr HAM Sched Trans :Trans (MW)~~}~~]~~ * {SCD Interval Seconds ÷ 3,600 seconds} [8]

1.3.2.2.5 Additional Information

SCD RT Total Price :Sink ($/MW) can be calculated as:

SCD RT Total Price :Sink ($/MW) =

SCD RT Energy Price :Sink ($/MW) + SCD RT Loss Price :Sink ($/MW) - SCD RT Cong Price :Sink ($/MW)

SCD BalMkt LBMP Energy (MWh) can also be calculated as:

SCD BalMkt LBMP Energy (MWh) =

SCD BalMkt LBMP Energy (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

Conditions for using Real-Time or Hour-Ahead Market Prices ($/MW):

[8] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

The above settlements are settled at LBMPs dependent upon whether the contract(s) are modified (either changed during the Balancing Market Evaluation (BME) process or curtailed during the Hour-Ahead Market) and who modifies them. The three Market Component Prices used in the above settlement calculation are either Real-Time Market Prices or Hour-Ahead Market Prices. If a transaction is not curtailed, or is curtailed by NYISO or an external control area, the real-time price components are used for energy, losses, and congestion. If a transaction is curtailed by the Market Participant, the lesser of the real-time and hour-ahead price components are used for energy, losses, and congestion.

1.3.2.2.6 References

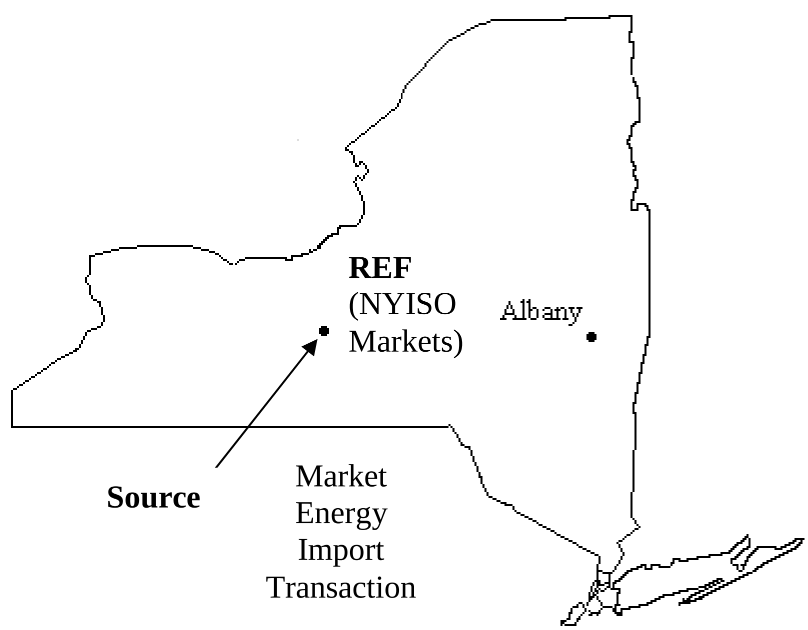
The applicability of Balancing Market Energy Export Transaction Charges is described within Article 4 (Section 4.16) of the MST (Market Administration and Control Area Services Tariff).

1.3.3 Day-Ahead Market Transaction Bid Production Cost Guarantee

1.3.3.1 Description

The Day Ahead Market (DAM) Transaction Bid Production Cost Guarantee (BPCG) ($) settlement is intended to guarantee a Transaction Customer, who is importing energy into the NYCA for sale to the NYISO DAM via a Market Energy Import Transaction, does not incur a net DAM loss relative to the Transaction Contract's determined Bid Production Costs.

Market Energy Import Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who offer their resources to the NYISO wholesale energy markets. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and the NYISO reference bus (represents the NYISO energy markets) as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.



The DAM Transaction BPCG ($) settlement is based upon the Transaction Contract's determined Bid Production Costs (DAM scheduled energy (MW) times the DAM Transaction Bid Decremental Dollar ($/MW)) minus its DAM Energy Revenue ($). It is determined at the daily-level for each Market Energy Import Transaction Contract scheduled in the NYISO DAM.

1.3.3.2 Required Data Elements

1.3.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel-through, internal)	Y
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	N
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y
	Hr DAM Trans Bid Decr Dollar ($/MW)	Day Ahead Market Transaction Bid Decremental Bid Cost ($/MW) is a number representing the price at which the NYISO should schedule the given transaction, based on DAM market prices at the proxy buses	Y
515	Hr DAM Total LBMP Stlmnt ($)	Total Day Ahead Market LBMP Settlement ($) is a number representing the total BAS-determined LBMP energy settlement for the given transaction in the NYISO Day Ahead Market; sum of the DAM LBMP energy components (energy, loss, & congestion)	Y

1.3.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
511	Hr DAM LBMP Energy (MWh)	Day Ahead Market Scheduled LBMP Transaction Energy (MWh) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market for LBMP import/export transactions to/from the NYISO Reference Bus	Y

528	Hr DAM Trans Net Cost ($)	Hourly Real-Time Transaction Net Cost ($) is a number representing the BAS-determined amount of balancing market transaction LBMP revenue net of the calculated production cost of the corresponding balancing market energy (for external generators selling energy in the NYISO balancing market)	Y

1.3.3.2.3 Results

Bill Code	**Title**	**Business Description**	**DSS Value**
768	Day DAM Trans BPCG ($)	Day Ahead Market Transaction Bid Production Cost Guarantee Settlement ($) is a number representing the BAS-determined payment to ensure cost recovery for the given transaction (external generator) in the NYISO day ahead market	Y

1.3.3.3 Eligibility

Transaction Customers will receive a payment for Day Ahead Market (DAM) Transaction Bid Production Cost Guarantee (BPCG) ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Energy Import Transaction
  - Source Location is a NYISO external control area proxy bus
  - Sink Location is the NYISO market reference proxy bus
  - TransCnt Transaction Category = Import
- The transaction contract is scheduled in the NYISO DAM (Hr DAM Sched Trans :Trans (MW) > 0).
- The sum of all hours for the given day of the given transaction contract's determined DAM Bid Production Cost ($) exceeds its DAM Energy Revenue ($) (Day DAM Trans BPCG ($) > 0).

1.3.3.4 Settlement Algorithm

Day DAM Trans BPCG ($) is calculated as:

If the given Transaction Contract is a Market Energy Import Transaction:

- TransCnt Transaction Type = "LBMP"
- TransCnt Transaction Category = "Import"

If the sum of all hours for the given day of Hr DAM Trans Net Cost ($) > 0:

Day DAM Trans BPCG ($) = sum of all hours for the given day of Hr DAM Trans Net Cost ($).

Otherwise:

Day DAM Trans BPCG ($) = 0.

Where Hr DAM Trans Net Cost ($) is calculated as:

Hr DAM Trans Net Cost ($) =

{Hr DAM LBMP Energy (MWh) * Hr DAM Trans Bid Decr Dollar ($/MW)} - Hr DAM Total LBMP Stlmnt ($)

And Hr DAM LBMP Energy (MWh) = Hr DAM Sched Trans :Trans (MW)

NOTE: For additional information, please refer to section 3.3.1.1 within this document that describes the calculation of DAM Total LBMP Settlement ($) for Imports.

1.3.3.5 Additional Information

None

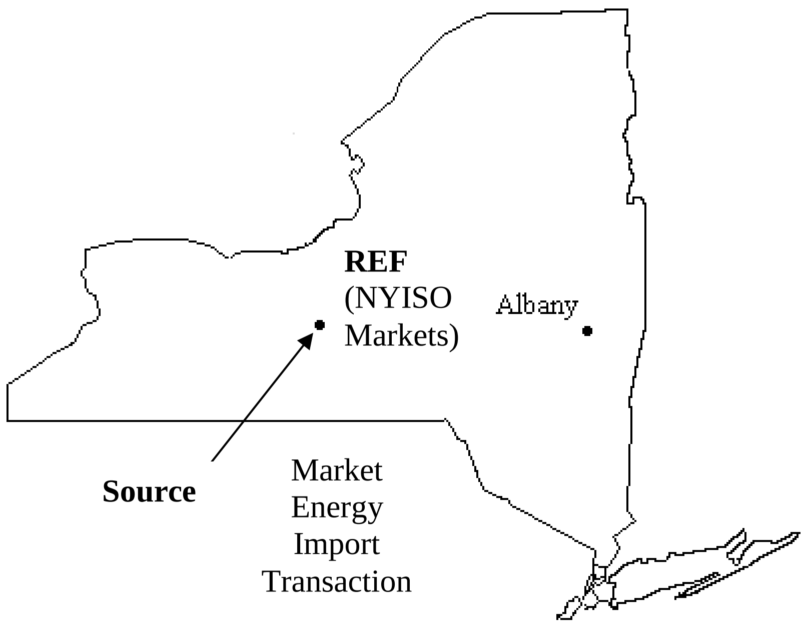
1.3.3.6 References

1.3.4 Real-Time Transaction Bid Production Cost Guarantee

1.3.4.1 Description

The Real-Time (RT) Transaction Bid Production Cost Guarantee (BPCG) ($) settlement is intended to guarantee a Transaction Customer, who is importing energy into the NYCA for sale to the NYISO Real-Time Market via a Market Energy Import Transaction, does not incur a net Balancing Market loss relative to the Transaction Contract's determined Bid Production Costs.

Market Energy Import Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who offer their resources to the NYISO wholesale energy markets. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and the NYISO reference bus (represents the NYISO energy markets) as the scheduled Point of Withdrawal (POW). Real-Time Transactions are scheduled in the Security Constrained Dispatch (SCD) scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.



The RT Transaction BPCG ($) settlement is based upon the Transaction Contract's determined Bid Production Costs (net RT scheduled energy (MW) times the HAM Transaction Bid Decremental Dollar ($/MW)) minus its Balancing Market Energy Revenue ($). It is determined at the daily-level for each Market Energy Import Transaction Contract scheduled in the NYISO RT market.

1.3.4.2 Required Data Elements

1.3.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel-through, internal)	Y
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	N
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a given transaction, injected at a given generator, for an SCD interval.	Y
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y

	Hr HAM Trans Bid Decr Dollar ($/MW)	Hour Ahead Market Transaction Bid Decremental Bid Price ($/MW) is a number representing the price at which the NYISO should schedule the given transaction, based on HAM market prices at the proxy buses	Y
	SCD BalMkt Total LBMP Stlmnt ($)	Balancing Market Total LBMP Energy Settlement is a number representing the BAS-determined LBMP energy total settlement for the given transaction in the NYISO balancing market; is the sum of the balancing market LBMP energy, loss, and congestion components	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt LBMP Energy (MWh)	Balancing Market LBMP Energy (MWh) is a number representing the BAS-determined amount of balancing market LBMP energy for the given transaction "	Y
	SCD RT Trans Net Cost ($)	SCD-level Real-Time Transaction Net Cost ($) is a number representing the BAS-determined amount of balancing market transaction LBMP revenue net of the calculated production cost of the corresponding balancing market energy (for external generators selling energy in the NYISO balancing market)	Y
529	Hr RT Trans Net Cost ($)	Hourly Real-Time Transaction Net Cost ($) is a number representing the BAS-determined amount of balancing market transaction LBMP revenue net of the calculated production cost of the corresponding balancing market energy (for external generators selling energy in the NYISO balancing market)	Y

1.3.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
769	Day RT Trans BPCG ($)	Real-Time Transaction Bid Production Cost Guarantee Settlement ($) is a number representing the BAS-determined payment to ensure cost recovery for the given transaction (external generator) in the NYISO balancing market	Y

1.3.4.3 Eligibility

Transaction Customers will receive a payment for Real-Time Transaction Bid Production Cost Guarantee (BPCG) ($) if all of the following conditions exist:

- The Transaction Contract is an Energy Import Transaction
  - Source Location is a NYISO external control area proxy bus
  - Sink Location is the NYISO market reference proxy bus
  - TransCnt Transaction Category = Import
- The Transaction Contract's RT Schedule exceeds its DAM Schedule (SCD RT Sched Trans :Trans (MW) > Hr DAM Sched Trans :Trans (MW)).
- The sum of all hours for the given day of the given transaction contract's determined RT Bid Production Cost ($) exceeds its Balancing Market Energy Revenue ($) (Day RT Trans BPCG ($) > 0).

1.3.4.4 Settlement Algorithm

Day RT Trans BPCG ($) is calculated as:

If the given Transaction Contract is a Market Energy Import Transaction:

- TransCnt Transaction Type = "LBMP"
- TransCnt Transaction Category = "Import"

If the sum of all hours for the given day of Hr RT Trans Net Cost ($) > 0:

Day RT Trans BPCG ($) = sum of all hours for the given day of Hr RT Trans Net Cost ($).

Otherwise:

Day RT Trans BPCG ($) = 0.

Where Hr RT Trans Net Cost ($) is calculated as:

Hr RT Trans Net Cost ($) = sum of all SCD-intervals for the given hour of SCD RT Trans Net Cost ($).

Where SCD RT Trans Net Cost ($) is calculated as:

SCD RT Trans Net Cost ($) =

{SCD BalMkt LBMP Energy (MWh) * Hr HAM Trans Bid Decr Dollar ($/MW)} - SCD BalMkt Total LBMP Stlmnt ($)

And SCD BalMkt LBMP Energy (MWh) =

{SCD RT Sched Trans :Trans (MW) - Hr DAM Sched Trans :Trans (MW)} * {SCD Interval Seconds ÷ 3,600}

NOTE: For additional information, please refer to section 3.3.2.1 within this document that describes the calculation of Balancing Market Total LBMP Settlement ($) for Imports.

1.3.4.5 Additional Information

None

1.3.4.6 References

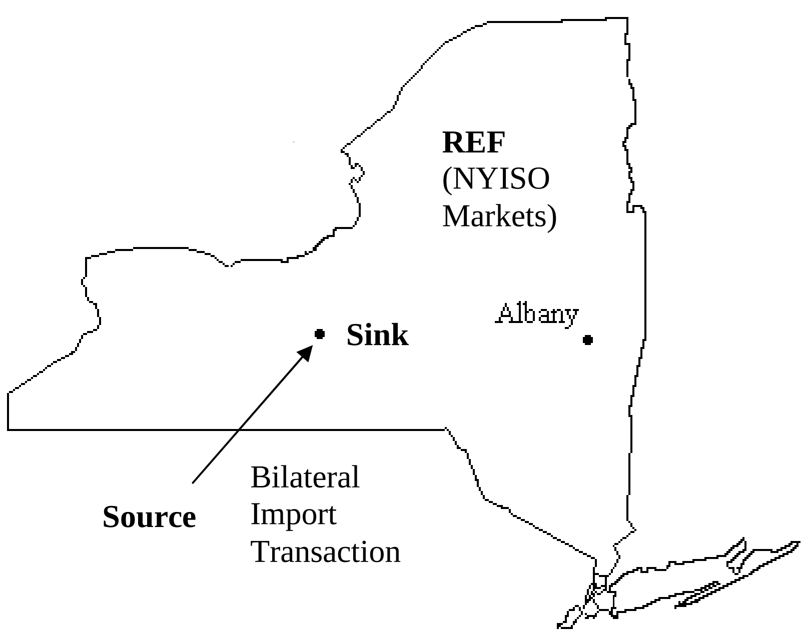
1.3.5 Day Ahead Market Transmission Usage Charges (Import, Export, Wheel-Through, Internal)

1.3.5.1 Import

1.3.5.1.1 Description

The Transaction Day Ahead Market (DAM) Transmission Usage Charge (TUC) settlement for Imports is intended to charge TUCs to Transaction Customers with Bilateral Import Transaction Contracts in the NYISO (DAM) for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Import Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who contracted with another Market Participant to supply energy to meet NYCA load requirements. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and a NYISO physical load bus as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.



This settlement is a charge to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction bid into the NYISO DAM. It is determined at the hourly-level for each DAM Bilateral Import Transaction.

The NYISO recovers DAM losses and congestion costs associated with transmission service scheduled to deliver these DAM Bilateral Import Transactions (external to the NYISO energy markets). The total settlement is the net~~sum~~ of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by DAM transmission service requests (DAM Bid MW).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from DAM transmission service requests (DAM Bid MW).

Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets. The GTR credit will off-set the amount of DAM TUCs that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR. A GTR will be applied to a Transaction Contract upon Market Participant request when any of the following conditions exist:

- GTR POW matches the Transaction Contract POW's corresponding Subzone or Zone, and the GTR POI is not defined
- GTR POW is not defined, and the GTR POI matches the Transaction Contract POI or its corresponding Zone
- GTR POW matches the Transaction Contract POW's corresponding Subzone or Zone, and the GTR POI matches the Transaction Contract POI or its corresponding Zone

1.3.5.1.2 Required Data Elements

1.3.5.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel-through, internal)	Y
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	N
	Hr DAM Cong Price :Sink ($/MW)	Hourly Day Ahead Market Congestion Price - Sink ($/MW) is a number representing the day ahead market price of congestion component for the zone that contains the transaction sink location	Y
	Hr DAM Cong Price :Src ($/MW)	Hourly Day Ahead Market Congestion Price - Source ($/MW) is a number representing the day ahead market price of congestion component at a transaction source location	Y

Bill Code	Title	Business Description	DSS Value
	Hr DAM Loss Price :Sink ($/MW)	Hourly Day Ahead Market Loss Price - Sink ($/MW) is a number representing the day ahead market price of losses component for the zone that contains the transaction sink location	Y
	Hr DAM Loss Price :Src ($/MW)	Hourly Day Ahead Market Loss Price - Source ($/MW) is a number representing the day ahead market price of losses component at a transaction source location	Y
	Hr DAM Trans Bid Fixed Energy (MW)	Day Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO DAM for the given transaction, submitted by a transaction customer on a Transaction Category represents the category in which the given transaction belongs (import, export, wheel-through, internal transaction bid	Y
	Hr DAM TUC GTR Ind	Hourly Day Ahead Market (DAM) Transmission Usage Charge (TUC) Grand-Fathered Transmission Rights (GTR) Indicator is a character representing whether or not the given Transaction Contract has an applicable GTR (MW).	N
	Capability Period	Capability Period represents the capability period that the day falls in (either Winter or Summer)	Y
	Hr GTR Contract :Summer (MW)	Hourly Grand-Fathered Transmission Rights (GTR) Contracted - Summer (MW) is the amount of transaction energy rights specified on existing transmission contracts prior to the NYISO markets for the Summer Capability Period; that is considered grand-fathered transmission rights in NYISO settlements.	N
	Hr GTR Contract :Winter (MW)	Hourly Grand-Fathered Transmission Rights (GTR) Contracted - Winter (MW) is the amount of transaction energy rights specified on existing transmission contracts prior to the NYISO markets for the Winter Capability Period; that is considered grand-fathered transmission rights in NYISO settlements.	N
	Hr Total DAM TUC Energy :GTR (MWh)	Hourly Total Day Ahead Market (DAM) Transmission Usage Charge (TUC) Energy – Grandfathered Transmission Right (MWh) is a number representing the total amount of Transaction DAM TUC Energy (MW) that a specific Grand-Fathered Transmission Right (GTR) may be applied to across multiple Transaction Contracts.~~Hourly Total Day Ahead Market (DAM) Transmission Usage Charge (TUC) Energy (MWh) is a number representing the total amount of Transaction DAM TUC Energy (MW)~~	N

Bill Code	Title	Business Description	DSS Value
		~~that a specific Grand-Fathered Transmission Right (GTR) may be applied to across multiple Transaction Contracts.~~	

1.3.5.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
501	Hr DAM TUC Energy (MWh)	Day Ahead Market Scheduled TUC Transaction Energy (MWh) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market subject to TUCs for import/export/wheel-through transactions to/from the NYISO control area or for internal transactions with the NY Control Area.	Y
	Hr GTR Contract (MW)	Hourly Grand-Fathered Transmission Rights (GTR) Contracted (MW) is the amount of transaction energy rights specified on existing transmission contracts prior to the NYISO markets; that is considered grand-fathered transmission rights in NYISO settlements (either summer or winter contracted MW values).	N
	Hr GTR Cong Relief (MW)	Hourly Grand-Fathered Transmission Rights Congestion Relief (MW) is a number which represents the amount of energy for the given transaction that is grand-fathered, and is exempted from Day Ahead Market transmission usage charges congestion component.	Y
	Hr DAM GTR Cong Price :Sink ($/MW)	Hourly Day Ahead Market (DAM) Grand-Fathered Transmission Rights (GTR) Congestion Price - Sink ($/MW) is a number representing the determined price associated with the sink location (sub-zonal or zonal price) of the given Transaction Contract's Grand-Fathered Transmission Rights.	N
	Hr DAM GTR Cong Price :Src ($/MW)	Hourly Day Ahead Market (DAM) Grand-Fathered Transmission Rights (GTR) Congestion Price - Source ($/MW) is a number representing the determined price associated with the source location (source location or zonal price) of the given Transaction Contract's Grand-Fathered Transmission Rights.	N
	Hr GTR Cong Relief Ratio	Hourly Grand-Fathered Transmission Rights (GTR) Congestion Relief Ratio is a number representing a ratio of the amount of GTRs to the total amount of Day Ahead Market (DAM) Transaction Scheduled Energy corresponding to the GTR {=1 when DAM scheduled energy (MW) < total GTR (MW)}; used to allocate GTRs to	N

Bill Code	Title	Business Description	DSS Value
		applicable Transaction Contracts.	
	Hr DAM TUC Cong GTR ($)	Hourly Day Ahead Market (DAM) Transmission Usage Charges (TUC) Congestion Grandfathered Transmission Rights ($) is a number representing the amount of TUCs (congestion component) applicable to the portion of the Transaction Contract covered by a GTR, prior to the GTR congestion relief credit.	N
	Hr DAM TUC Cong Net GTR ($)	Hourly Day Ahead Market (DAM) Transmission Usage Charges (TUC) Congestion Net Grandfathered Transmission Rights ($) is a number representing the net amount of TUCs (congestion component) applicable to the portion of the Transaction Contract covered by a GTR, after the GTR congestion relief credit.	N
	Hr DAM TUC Relief Credit ($)	Hourly Day Ahead Market (DAM) Transmission Usage Charge (TUC) Relief Credit ($) is a number representing the amount of credit to be used to offset a Transaction Contract's DAM TUCs due to Grand-Fathered Transmission Rights (GTR).	N
503	Hr DAM TUC Loss Stlmnt ($)	Day Ahead Market Transmission Usage Charge Loss Component Settlement ($) is a number representing the BAS-determined amount of day ahead market transmission usage charge for losses for the given transaction	Y
502	Hr DAM TUC Cong Stlmnt ($)	Day Ahead Market Transmission Usage Charge Congestion Component Settlement ($) is a number representing the BAS-determined amount of day ahead market transmission usage charge for congestion for the given transaction	Y

1.3.5.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
504	Hr Total DAM TUC Stlmnt ($)	Total Day Ahead Market Transmission Usage Charge Settlement ($) is a number representing the BAS-determined amount of total day ahead market transmission usage charges for the given transaction; it is the sum of the day ahead market transmission usage charge congestion and loss components	Y

1.3.5.1.3 Eligibility

Transaction Customers will receive a charge for Day Ahead Market (DAM) Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Bilateral Import Transaction
  - Source Location is a NYISO external control area proxy bus
  - Sink Location is NOT the NYISO market reference proxy bus
  - TransCnt Transaction Category = Import
- The Transaction Contract is bid into the NYISO DAM (Hr DAM Trans Bid Fixed Energy (MW) <> 0).

1.3.5.1.4 Settlement Algorithm

Hr Total DAM TUC Stlmnt ($) is calculated as:

Hr Total DAM TUC Stlmnt ($) =

Hr DAM TUC Loss Stlmnt ($) - Hr DAM TUC Cong Stlmnt ($)

Where Hr DAM TUC Loss Stlmnt ($) is calculated as:

Hr DAM TUC Loss Stlmnt ($) =

Hr DAM TUC Energy (MWh) * {Hr DAM Loss Price :Sink ($/MW) - Hr DAM Loss Price :Src ($/MW)}

Where Hr DAM TUC Cong Stlmnt ($) is calculated as:

If Hr DAM TUC GTR Ind = “N”

Hr DAM TUC Cong Stlmnt ($) =

Hr DAM TUC Energy (MWh) * {Hr DAM Cong Price :Sink ($/MW) - Hr DAM Cong Price :Src ($/MW)}

Else If Hr DAM TUC GTR Ind = “Y”

If there is more DAM TUC Energy (MWh) than is what is covered by grand-fathered rights (Hr DAM TUC Energy (MWh) > Hr GTR Cong Relief (MW)):

Hr DAM TUC Cong Stlmnt ($) =

[{Hr DAM TUC Energy (MWh) - Hr GTR Cong Relief (MW)} * {Hr DAM Cong Price :Sink ($/MW) - Hr DAM Cong Price :Src ($/MW)}] -

Max[[{Hr GTR Cong Relief (MW) * {Hr DAM Cong Price :Sink ($/MW) - Hr DAM Cong Price :Src ($/MW)}} - Hr DAM TUC Relief Credit ($)], 0]

Else all DAM TUC Energy (MWh) is covered by grand-fathered rights:

Hr DAM TUC Cong Stlmnt ($) =

[Hr DAM TUC Energy (MWh) * {Hr DAM Cong Price :Sink ($/MW) - Hr DAM Cong Price :Src ($/MW)}] - Hr DAM TUC Relief Credit ($)

And:

Hr DAM TUC Energy (MWh) = Hr DAM Trans Bid Fixed Energy (MW)

Hr DAM TUC Relief Credit ($) is calculated as:

Hr DAM TUC Relief Credit ($) =

Hr GTR Cong Relief (MW) * {Hr DAM GTR Cong Price :Sink ($/MW) - Hr DAM GTR Cong Price :Src ($/MW)}

Where Hr GTR Cong Relief (MW) is calculated as:

If Hr DAM TUC Energy (MWh) * Hr GTR Cong Relief Ratio >= Hr GTR Contract (MW)

Hr GTR Cong Relief (MW) = Hr GTR Contract (MW)

Else

Hr GTR Cong Relief (MW) = Hr DAM TUC Energy (MWh) * Hr GTR Cong Relief Ratio

Where Hr GTR Contract (MW) is:

If Capability Period = “SUMMER”

Hr GTR Contract (MW) = Hr GTR Contract :Summer (MW)

Else If Capability Period = “WINTER”

Hr GTR Contract (MW) = Hr GTR Contract :Winter (MW)

And Hr GTR Cong Relief Ratio is:

If Hr Total DAM TUC Energy (MWh) > Hr GTR Contract (MW)

Hr GTR Cong Relief Ratio =

Hr GTR Contract (MW) ÷ Hr Total DAM TUC Energy (MWh)

Else

Hr GTR Cong Relief Ratio = 1.0

Where Hr DAM GTR Cong Price :Sink ($/MW) can be calculated as:

Hr DAM GTR Cong Price :Sink ($/MW) is the Hr DAM Cong Price ($/MW) corresponding to either the Subzone or Zone which contains the Transaction Contract’s sink location, based the grand-fathered transmission right’s sink location definition (use zonal price if the GTR’s sink definition is the zone; use sub-zonal price if the GTR’s definition is the sub-zone).

And Hr DAM GTR Cong Price :Src ($/MW) can be calculated as:

Hr DAM GTR Cong Price :Src ($/MW) is the Hr DAM Cong Price ($/MW) corresponding to either the source location itself, or the Zone which contains the Transaction Contract's source location, based the grand-fathered transmission right's source location definition (use source location price if the GTR's source definition is the source location; use zonal price if the GTR's definition is the zone).

1.3.5.1.5 Additional Information

Grand-fathered Transmission Rights (GTR):

Transaction Customers (TC) holding Grand-fathered Transmission Rights (GTR) may be exempt (up to a pre-determined MW amount) from paying the Congestion Component of the Transmission Usage Charge (TUC). To receive the GTR credit, the TC must schedule the bilateral transaction in the Day Ahead Market (DAM) and follow its DAM transaction schedule. The TC will not receive any compensation for un-used GTRs, and will not be permitted to resell or transfer these Grand-fathered Rights unless permitted in the existing agreements.

Non-Firm Transactions:

Non-Firm transactions do not pay congestion costs by rule. Therefore Hr DAM TUC Cong Stlmnt ($) = 0.

1.3.5.1.6 References

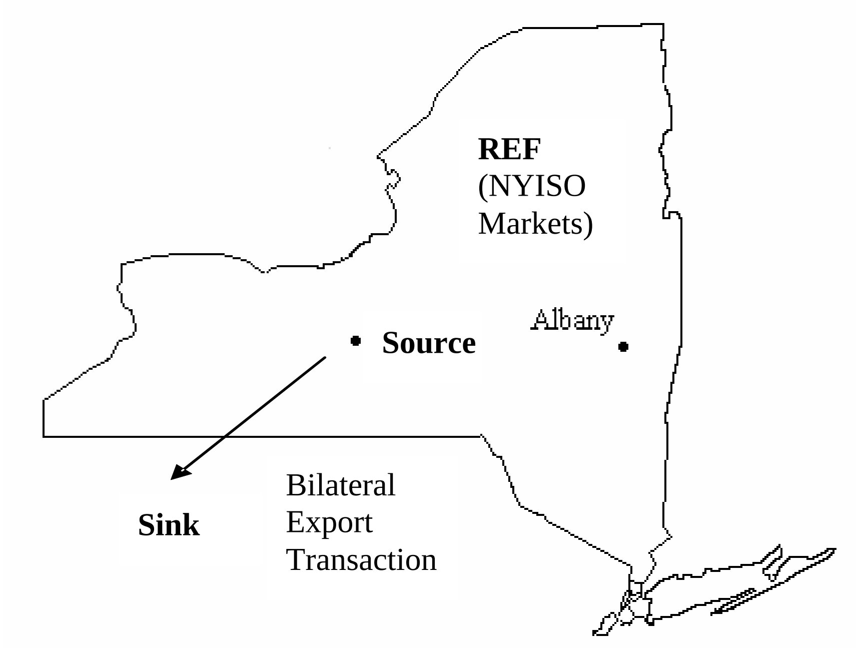
The applicability of Day Ahead Market Transmission Usage Charges is described within Article 2, Section 2.193 of the MST (Market Administration and Control Area Services Tariff).

1.3.5.2 Export

1.3.5.2.1 Description

The Transaction Day Ahead Market (DAM) Transmission Usage Charge (TUC) settlement for Exports is intended to charge TUCs to Transaction Customers with Bilateral Export Transaction Contracts in the NYISO (DAM) for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Export Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO who contracted with a non-NYCA load customer (in an external control area) to supply energy to meet non-NYCA load requirements with energy from a NYCA generation source. These transactions are scheduled with a NYISO physical generation bus as the scheduled Point of Injection (POI) and a NYISO external proxy bus (represents an external control area) as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.



This settlement is a charge to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction bid into the NYISO DAM. It is determined at the hourly-level for each DAM Bilateral Export Transaction.

The NYISO recovers DAM losses and congestion costs associated with transmission service scheduled to deliver these DAM Bilateral Export Transactions (external to the NYISO energy markets). The total settlement is the sum of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by DAM transmission service requests (DAM Scheduled MW).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from DAM transmission service requests (DAM Scheduled MW).

Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets. The GTR credit will off-set the amount of DAM TUCs that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR.

1.3.5.2.2 Required Data Elements

Same as section 3.3.5.1.2 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions, with the following exception:

1.3.5.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y

1.3.5.2.2.2 Intermediates

Same as section 3.3.5.1.2.2 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.2.2.3 Results

Same as section 3.3.5.1.2.3 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.2.3 Eligibility

Transaction Customers will receive a charge for Day Ahead Market (DAM) Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Bilateral Export Transaction
  - Source Location is a NYISO generation bus
  - Sink Location is a NYISO external proxy bus
  - TransCnt Transaction Category = Export
- The Transaction Contract is scheduled into the NYISO DAM (Hr DAM Sched Trans :Trans (MW) <> 0).

1.3.5.2.4 Settlement Algorithm

Same as section 3.3.5.1.4 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions, with the following exception:

- Hr DAM TUC Energy (MWh) = Hr DAM Sched Trans :Trans (MW)

1.3.5.2.5 Additional Information

Same as section 3.3.5.1.5 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.2.6 References

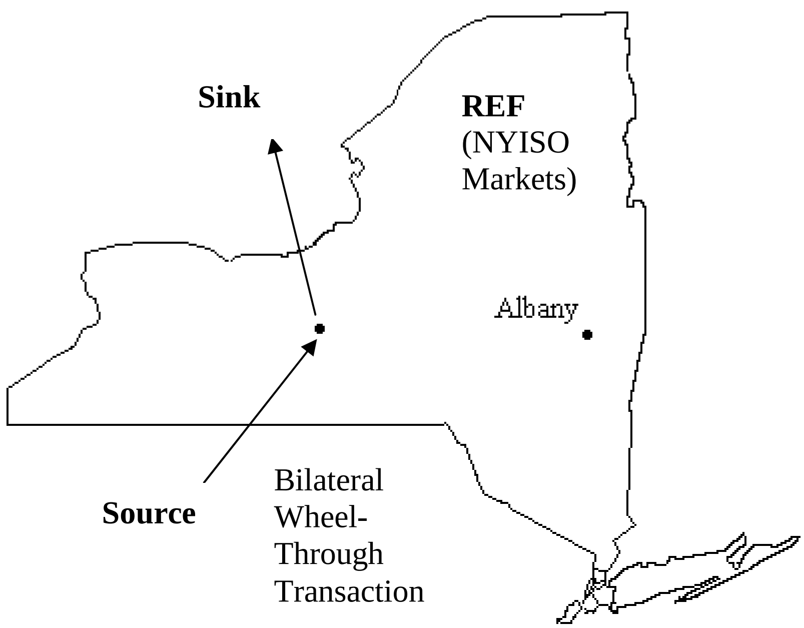
Same as section 3.3.5.1.6 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.3 Wheel-Through

1.3.5.3.1 Description

The Transaction Day Ahead Market (DAM) Transmission Usage Charge (TUC) settlement for Wheel-Through's is intended to charge TUCs to Transaction Customers with Bilateral Wheel-Through Transaction Contracts in the NYISO (DAM) for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Wheel-Through Transactions (energy is transmitted through the NYCA, not produced or consumed in the NYCA) are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO who contracted with a non-NYCA load customer (in an external control area) to supply energy to meet non-NYCA load requirements with energy from a non-NYCA generation source (in an external control area). These transactions are scheduled with the NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and a NYISO external proxy bus (represents an external control area) as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.



This settlement is a charge to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction bid into the NYISO DAM. It is determined at the hourly-level for each DAM Bilateral Wheel-Through Transaction.

The NYISO recovers DAM losses and congestion costs associated with transmission service scheduled to deliver these DAM Bilateral Wheel-Through Transactions (external to the NYISO energy markets). The total settlement is the sum of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by DAM transmission service requests (DAM Scheduled MW).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from DAM transmission service requests (DAM Scheduled MW).

Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets.

The GTR credit will off-set the amount of DAM TUCs that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR.

1.3.5.3.2 Required Data Elements

Same as section 3.3.5.1.2 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions, with the following exception:

1.3.5.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y

1.3.5.3.2.2 Intermediates

Same as section 3.3.5.1.2.2 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.3.2.3 Results

Same as section 3.3.5.1.2.3 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.3.3 Eligibility

Transaction Customers will receive a charge for Day Ahead Market (DAM) Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Bilateral Wheel-Through Transaction
    - Source Location is a NYISO external proxy bus
    - Sink Location is a NYISO external proxy bus
    - TransCnt Transaction Category = Wheel-Through
- The Transaction Contract is scheduled into the NYISO DAM (Hr DAM Sched Trans :Trans (MW) <> 0).

1.3.5.3.4 Settlement Algorithm

Same as section 3.3.5.1.4 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions, with the following exception:

- Hr DAM TUC Energy (MWh) = Hr DAM Sched Trans :Trans (MW)

1.3.5.3.5 Additional Information

Same as section 3.3.5.1.5 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.3.6 References

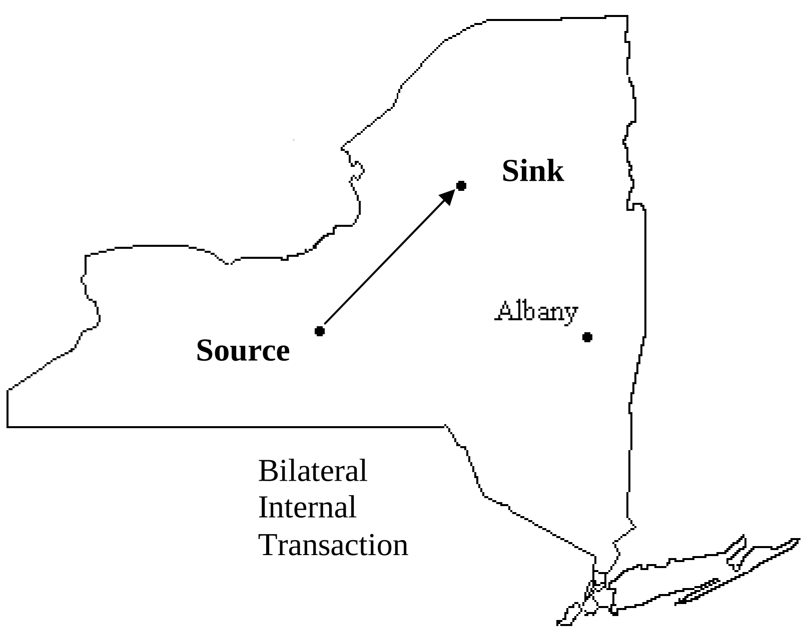
Same as section 3.3.5.1.6 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.4 Internal

1.3.5.4.1 Description

The Transaction Day Ahead Market (DAM) Transmission Usage Charge (TUC) settlement for Internal's is intended to charge TUCs to Transaction Customers with Bilateral Internal Transaction Contracts in the NYISO (DAM) for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Internal Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO who contracted with a NYCA load customer to supply energy to meet NYCA load requirements with energy from a NYCA generation source. These transactions are scheduled with a NYISO generation bus as the scheduled Point of Injection (POI) and a NYISO load bus as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.



This settlement is a charge to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction bid into the NYISO DAM. It is determined at the hourly-level for each DAM Bilateral Internal Transaction.

The NYISO recovers DAM losses and congestion costs associated with transmission service scheduled to deliver these DAM Bilateral Internal Transactions (external to the NYISO energy markets). The total settlement is the sum of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by DAM transmission service requests (DAM Scheduled MW).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from DAM transmission service requests (DAM Scheduled MW).

Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets. The GTR credit will off-set the amount of DAM TUCs that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR.

1.3.5.4.2 Required Data Elements

Same as section 3.3.5.1.2 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions, with the following exception:

1.3.5.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y

1.3.5.4.2.2 Intermediates

Same as section 3.3.5.1.2.2 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.4.2.3 Results

Same as section 3.3.5.1.2.3 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.5.4.3 Eligibility

Transaction Customers will receive a charge for Day Ahead Market (DAM) Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Bilateral Internal Transaction
    - Source Location is a NYISO load bus
    - Sink Location is a NYISO generation bus
    - TransCnt Transaction Category = Internal

- The Transaction Contract is scheduled into the NYISO DAM (Hr DAM Sched Trans :Trans (MW) <> 0).

1.3.5.4.4 Settlement Algorithm

Same as section 3.3.5.1.4 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions, with the following exception:

- Hr DAM TUC Energy (MWh) = Hr DAM Sched Trans :Trans (MW)

1.3.5.4.5 Additional Information

Same as section 3.3.5.1.5 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions, plus

Split Transactions

For certain Transactions, the Transaction Contract is split at a pre-defined location (middle location), and the corresponding TUCs charges for each segment are assigned to either the sink organization or the source organization. The sink location of the first segment and the source location of the second segment are by definition the same location (the middle location).

This scenario's only impact to the settlement is to split the Transaction Contract into two segments, and then calculating the settlement for each segment independently. NOTE: The additional middle location does have an affect on which Source and Sink location prices are used.

The TUCs associated with the source organization remain associated with same Transaction Contract ID. The TUCs associated with the sink organization are associated with a new Transaction Contract ID, which is determined by adding 1,000,000,000 to the original Transaction Contract ID.

For these Transactions, the above mentioned GTRs and Non-Firm Transactions Additional Information (adjustments) still applies.

1.3.5.4.6 References

Same as section 3.3.5.1.6 for Day Ahead Market Transmission Usage Charges - Bilateral Import Transactions

1.3.6 Transaction Day Ahead Market Replacement Energy

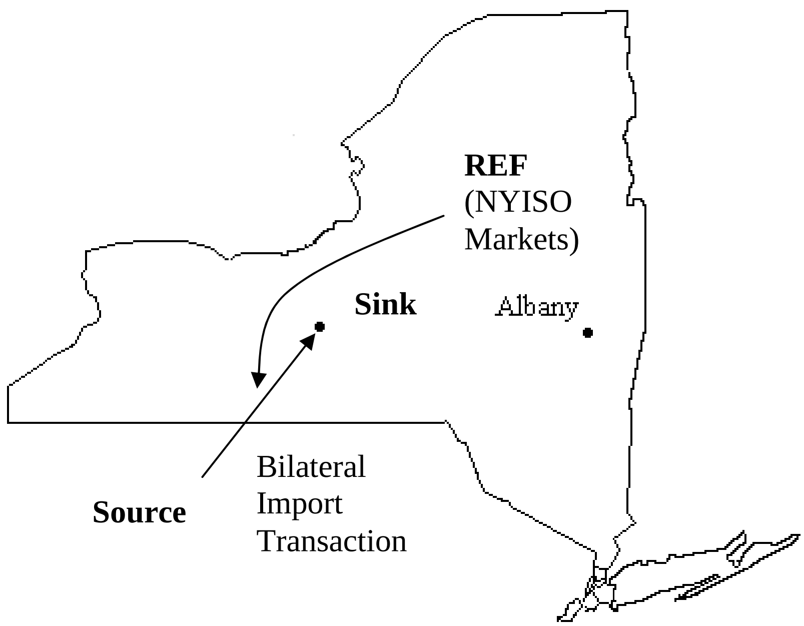
1.3.6.1 Description

The Transaction Day Ahead Market (DAM) Replacement Energy ($) settlement is intended to address any shortfall between the amount of DAM Transaction Bid Energy (MW) and the DAM Energy Scheduled (MW) via Bilateral Import Transactions. Transaction Customers are required to purchase DAM Replacement Energy from the NYISO DAM Market if their DAM Schedule (MW) is less than their DAM Bid Energy (MW).

Bilateral Import Transactions are flows of energy requested by Market Participants (acting as a Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who have contracted to meet the load requirements of a NYCA load. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection

(POI) and a NYISO load bus as the scheduled Point of Withdrawal (POW). DAM Transactions are scheduled in the DAM transaction scheduling process.

This settlement is a charge to the Transaction Customer, when an energy shortfall occurs, due to the requirement to purchase replacement energy to replace the energy shortfall. The settlement is based on the amount of DAM Replacement Energy (MW) purchased, times the DAM Price (energy, loss, and congestion) corresponding to the Transaction Contract's source location. It is determined at the hourly-level for each Bilateral Import Transaction which is scheduled below the Transaction Contract's bid (MW).



The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Transaction Customer Settlement for DAM Replacement Energy purchased from the NYISO DAM.
- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by DAM Replacement Energy purchases in the NYISO DAM.
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system by DAM Replacement Energy purchases in the NYISO DAM.

1.3.6.2 Required Data Elements

1.3.6.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel-through, internal)	Y
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	N
	Hr DAM Trans Bid Fixed Energy (MW)	Day Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO DAM for the given transaction, submitted by a transaction customer on a transaction bid	Y
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y
	Hr DAM Energy Price :Src ($/MW)	Hourly Day Ahead Market Energy Price - Source ($/MW) is a number representing the day ahead market price of energy component at a transaction source location	Y
	Hr DAM Loss Price :Src ($/MW)	Hourly Day Ahead Market Loss Price - Source ($/MW) is a number representing the day ahead market price of losses component at a transaction source location	Y
	Hr DAM Cong Price :Src ($/MW)	Hourly Day Ahead Market Congestion Price - Source ($/MW) is a number representing the day ahead market price of congestion component at a transaction source location	Y

1.3.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM Repl Energy (MWh)	Day Ahead Market Replacement Energy (MWh) is a number representing the amount of energy subject to NYISO day ahead market replacement energy settlements/charges	
	Hr DAM Repl Engy Stlmnt ($)	Day Ahead Market Replacement Energy -Energy Component Settlement ($) is a number representing the BAS-determined amount of day ahead market replacement energy component settlement for the given transaction and interval; created due to a cut to or curtailment of the given transaction	Y
	Hr DAM Repl Loss Stlmnt ($)	Day Ahead Market Replacement Energy -Loss Component Settlement ($) is a number representing the BAS-determined amount of day	Y

Bill Code	Title	Business Description	DSS Value
		ahead market replacement energy loss component settlement for the given transaction and interval; created due to a cut to or curtailment of the given transaction	
	Hr DAM Repl Cong Stlmnt ($)	Day Ahead Market Replacement Energy - Congestion Component Settlement ($) is a number representing the BAS-determined amount of day ahead market replacement energy congestion component settlement for the given transaction and interval; created due to a cut to or curtailment of the given transaction	Y

1.3.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Total DAM Repl Stlmnt ($)	Total Day Ahead Market Replacement Energy Settlement ($) is a number representing the BAS-determined amount of total day ahead market replacement energy settlement for the given transaction and interval; it is the sum of the day ahead market replacement energy, loss, and congestion component settlements	Y

1.3.6.3 Eligibility

Transaction Customers will receive a charge for Day Ahead Market (DAM) Replacement Energy ($) if all of the following conditions exist:

- The Transaction Contract is a DAM Bilateral Import Transaction
  - Source Location is not the NYISO market reference proxy bus
  - Sink Location is not the NYISO market reference proxy bus
  - TransCnt Transaction Category = Import
- The Transaction Contract is scheduled in the NYISO DAM at an amount less than the amount bid in the DAM by the Transaction Customer on the DAM Transaction Bid (Hr DAM Sched Trans :Trans (MW) < Hr DAM Trans Bid Fixed Energy (MW)).

1.3.6.4 Settlement Algorithm

Hr Total DAM Repl Stlmnt ($) is calculated as:

If the given Transaction Contract is a Bilateral Import Transaction:

- TransCnt Transaction Type = “TUC”
- TransCnt Transaction Category = “Import”

Hr Total DAM Repl Stlmnt ($) =

Hr DAM Repl Engy Stlmnt ($) + Hr DAM Repl Loss Stlmnt ($) - Hr DAM Repl Cong Stlmnt ($)

Where:

Hr DAM Repl Engy Stlmnt ($) =

Hr DAM Repl Energy (MWh) * Hr DAM Energy Price :Src ($/MW)

Hr DAM Repl Loss Stlmnt ($) =

Hr DAM Repl Energy (MWh) * Hr DAM Loss Price :Src ($/MW)

Hr DAM Repl Cong Stlmnt ($) =

Hr DAM Repl Energy (MWh) * Hr DAM Cong Price :Src ($/MW)

And Hr DAM Repl Energy (MWh) is calculated as:

Hr DAM Repl Energy (MWh) =

Hr DAM Trans Bid Fixed Energy (MW) - Hr DAM Sched Trans :Trans (MW)

1.3.6.5 Additional Information

Hr DAM Total Price :Src ($/MW) can be calculated as:

Hr DAM Total Price :Src ($/MW) =

Hr DAM Energy Price :Src ($/MW) + Hr DAM Loss Price :Src ($/MW) - Hr DAM Cong Price :Src ($/MW)

1.3.6.6 References

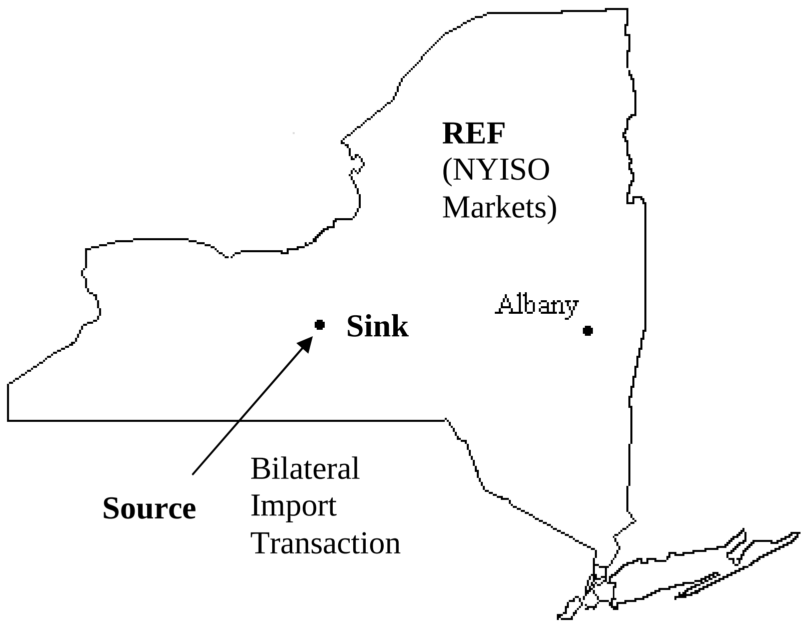
1.3.7 Balancing Market Transmission Usage Charges (Import, Export, Wheel-Through, Internal)

1.3.7.1 Import

1.3.7.1.1 Description

The Transaction Balancing Market Transmission Usage Charge (TUC) settlement for Imports is intended to charge any additional TUCs (as a result of additional transaction bidding) to Transaction Customers with Bilateral Import Transaction Contracts in the NYISO Hour Ahead Market (HAM) for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Import Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who contracted with another Market Participant to supply energy to meet NYCA load requirements. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and a NYISO physical load bus as the scheduled Point of Withdrawal (POW). Real-Time Transactions are scheduled through the Balancing Market Evaluation (BME) transaction scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.



This settlement is a charge (when HAM Bid MW > DAM Bid MW) to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction scheduled in the NYISO Hour Ahead Market (HAM). It is determined at the 5 minute security constrained dispatch (SCD) level for each Bilateral Import Transaction.

The NYISO recovers losses and congestion costs associated with transmission service scheduled to deliver these Bilateral Import Transactions (external to the NYISO energy markets). The total settlement is the net~~sum~~ of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by additional HAM transmission service requests (HAM Bid MW).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from additional HAM transmission service requests (HAM Bid MW).

~~Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets. The GTR credit will off-set the amount of Balancing Market TUCs (provided the contract was scheduled in the DAM, and followed its schedule) that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR.~~

1.3.7.1.2 Required Data Elements

1.3.7.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Trans Bid Fixed Energy (MW)	Day Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO DAM for the given transaction, submitted by a transaction customer on a transaction bid	Y
	Hr HAM Trans Bid Fixed Energy (MW)	Hour Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO HAM for the given transaction, submitted via a transaction bid	Y
	SCD RT Cong Price :Sink ($/MW)	Real-Time Congestion Price - Sink ($/MW) is a number representing the real-time price of congestion component at the sink load bus LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Sink ($/MW)	Real-Time Loss Price - Sink ($/MW) is a number representing the real-time price of loss component at the sink load bus LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.7.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt TUC Sched (MW)	Balancing Market Transaction Usage Charge Schedule (MW) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges settlements/charges	Y
	SCD BalMkt TUC Sched (MWh)	Balancing Market Transaction Usage Charge Schedule (MWh) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges settlements/charges	Y
	SCD BalMkt TUC Loss Stlmnt ($)	Balancing Market Transmission Usage Charge Loss Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for loss for the given transaction	Y

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt TUC Cong Stlmnt ($)	Balancing Market Transmission Usage Charge Congestion Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for congestion for the given transaction	Y

1.3.7.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt TUC Stlmnt ($)	Total Balancing Market Transmission Usage Charge Settlement ($) is a number representing the BAS-determined amount of total balancing market transmission usage charges for the given transaction; it is the sum of the balancing market transmission usage charge congestion and loss components	Y

1.3.7.1.3 Eligibility

Transaction Customers will receive a charge for Balancing Market Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a Hour Ahead Market (HAM) Bilateral Import Transaction
  - TransCnt Transaction Type = "TUC"
  - TransCnt Transaction Category = Import
    - Source Location is a NYISO external control area proxy bus
    - Sink Location is NOT the NYISO market reference proxy bus within the NYCA.
  - ~~Source Location is a NYISO external control area proxy bus~~
  - ~~Sink Location is NOT the NYISO market reference proxy bus~~
  - TransCnt Transaction Category = Import
- The Transaction Contract is bid into the NYISO HAM above that in the DAM (Hr HAM Trans Bid Fixed Energy (MW) > Hr DAM Trans Bid Fixed Energy (MW)).

1.3.7.1.4 Settlement Algorithm

SCD Total BalMkt TUC Stlmnt ($) is calculated as:

If the given Transaction Contract is a Bilateral Import Transaction:

- TransCnt Transaction Type = "TUC"
- TransCnt Transaction Category = "Import"

SCD Total BalMkt TUC Stlmnt ($) =

SCD BalMkt TUC Loss Stlmnt ($) - SCD BalMkt TUC Cong Stlmnt ($)

Where:

SCD BalMkt TUC Loss Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Loss Price :Sink ($/MW) - SCD RT Loss Price :Src ($/MW)} ~~* {SCD Interval Seconds ÷ 3,600 seconds}~~[9]

SCD BalMkt TUC Cong Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Cong Price :Sink ($/MW) - SCD RT Cong Price :Src ($/MW)}~~* {SCD Interval Seconds ÷ 3,600 seconds}~~

And SCD BalMkt TUC Sched (MWh) is calculated as:

SCD BalMkt TUC Sched (MWh) =

SCD BalMkt TUC Sched (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

Where:

SCD BalMkt TUC Sched (MW) =

{Max{Hr DAM Trans Bid Fixed Energy (MW), Hr HAM Trans Bid Fixed Energy (MW)} - Hr DAM Trans Bid Fixed Energy (MW)}

1.3.7.1.5 Additional Information

Curtailment:

Import bilateral transactions between external suppliers and loads located within the NYCA are considered (like internal bilaterals) purely financial in nature (settled upon bid capacity regardless of any difference between DAM bid and RT scheduled transactions) but are subject to curtailment. Curtailments are usually a result of a generators' inability to fulfill specific contractual obligations to physically serve the contract rather than purchasing energy from the spot market to cover the contracts. In the event of curtailment by the NYISO (to serve NYCA load reliably), the scheduling party will be required to purchase replacement energy (losses and congestion costs also apply) at the import's point of injection at the prevailing point of injection LBMP.

~~*Grand-fathered Transmission Rights (GTR):*~~

~~Transaction Customers (TC) holding Grand-fathered Transmission Rights (GTR) may be exempt (up to a pre-determined MW amount) from paying the Congestion Component of the Transmission Usage Charge (TUC). To receive the GTR credit, the TC must schedule the bilateral transaction in the Day Ahead Market (DAM) and follow its DAM transaction schedule. The TC will not receive any compensation for un-used GTRs, and will not be permitted to resell or transfer these Grand-fathered Rights unless permitted in the existing agreements.~~

~~If the Transaction Customer (TC) holding Grand-fathered Transmission Rights (GTR) does not schedule the bilateral transaction in the Day Ahead Market (DAM) or exceeds a pre-determined MW amount (set for each~~

[9] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

~~GTR), the TC will pay the real-time TUC for all Energy transmitted under the bilateral transaction exceeding it's Day Ahead schedule or for the amount exceeding the GTRs pre-determined MW amount (if the transaction was scheduled Day Ahead).~~

~~*Cut Transactions:*~~

~~Transactions that were cut during a given SCD-interval will have the corresponding SCD BalMkt TUC Sched (MW) value adjusted prior to the determination of the TUC Loss component ($) to prorate the integrated energy amount during the SCD-interval. The integrated energy is prorated based on net seconds of the cut time to the total time during the interval.~~

~~**NOTE:** The interval in which the cut occurs will also be adjusted to account for the impact of the cut to the amount of energy in the next interval.~~

Non-Firm Transactions:

Non-Firm transactions do not pay congestion costs by rule. Therefore SCD BalMkt TUC Cong Stlmnt ($) = 0.

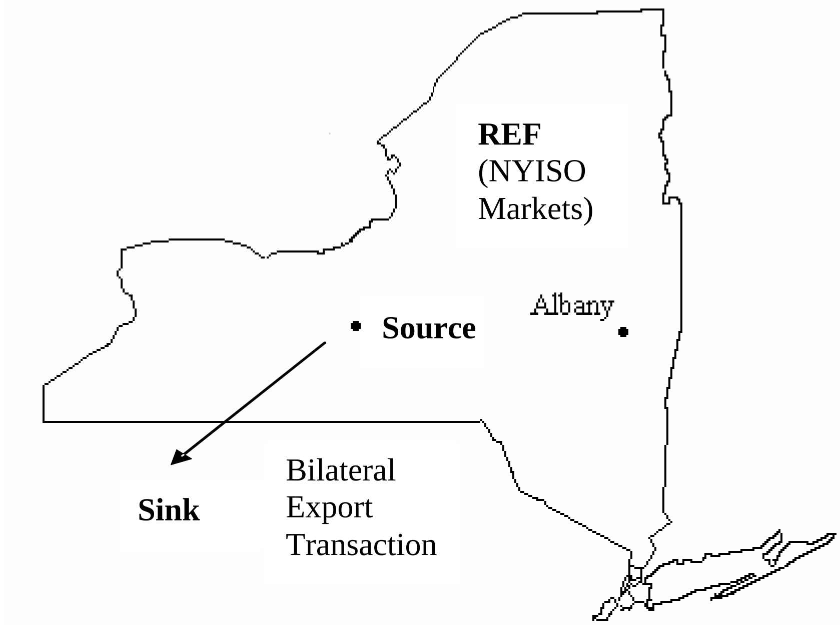
1.3.7.1.6 References

1.3.7.2 Export

1.3.7.2.1 Description

The Transaction Balancing Market Transmission Usage Charge (TUC) settlement for Exports is intended to charge any additional TUCs (as a result of additional transaction bidding) to Transaction Customers with Bilateral Export Transaction Contracts in the NYISO Real-Time Market for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Export Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO who contracted with a non-NYCA load customer (in an external control area) to supply energy to meet non-NYCA load requirements with energy from a NYCA generation source. These transactions are scheduled with a NYISO physical generation bus as the scheduled Point of Injection (POI) and a NYISO external proxy bus (represents an external control area) as the scheduled Point of Withdrawal (POW). Real-Time Transactions are scheduled through the Balancing Market Evaluation (BME) transaction scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.



This settlement is a charge (when RT Trans Sched MW > DAM Trans Sched MW) to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction scheduled in the NYISO Real-Time Market. It is determined at the 5 minute security constrained dispatch (SCD) level for each Bilateral Export Transaction.

The NYISO recovers losses and congestion costs associated with transmission service scheduled to deliver these Bilateral Export Transactions (external to the NYISO energy markets). The total settlement is the ~~sum~~ net of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by additional Real-Time transmission service requests (in excess of DAM).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from additional Real-Time transmission service requests (in excess of DAM).

~~Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets. The GTR credit will off-set the amount of Balancing Market TUCs (provided the contract was scheduled in the DAM, and followed its schedule) that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR.~~

1.3.7.2.2 Required Data Elements

1.3.7.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a	Y

Bill Code	Title	Business Description	DSS Value
		given transaction, for an SCD interval.	
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y
	SCD RT Cong Price :Sink ($/MW)	Real-Time Congestion Price - Sink ($/MW) is a number representing the real-time price of congestion component at the sink load bus LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Sink ($/MW)	Real-Time Loss Price - Sink ($/MW) is a number representing the real-time price of loss component at the sink load bus LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.7.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt TUC Sched (MW)	Balancing Market Transaction Usage Charge Schedule (MW) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges settlements/charges	Y
	SCD BalMkt TUC Sched (MWh)	Balancing Market Transaction Usage Charge Schedule (MWh) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges settlements/charges	Y
	SCD BalMkt TUC Cong Stlmnt ($)	Balancing Market Transmission Usage Charge Congestion Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for congestion for the given transaction	Y
	SCD BalMkt TUC Loss Stlmnt ($)	Balancing Market Transmission Usage Charge Loss Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for	Y

Bill Code	Title	Business Description	DSS Value
		loss for the given transaction	

1.3.7.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt TUC Stlmnt ($)	Total Balancing Market Transmission Usage Charge Settlement ($) is a number representing the BAS-determined amount of total balancing market transmission usage charges for the given transaction; it is the sum of the balancing market transmission usage charge congestion and loss components	Y

1.3.7.2.3 Eligibility

Transaction Customers will receive a charge for Balancing Market Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a Real-Time Bilateral Export Transaction
    - TransCnt Transaction Type = "TUC"
    - TransCnt Transaction Category = Export
        - Source Location is a NYISO generation bus
        - Sink Location is a NYISO external proxy bus
    - ~~oSource Location is a NYISO generation bus~~
    - ~~oSink Location is a NYISO external proxy bus~~
    - TransCnt Transaction Category = Export
- The Transaction Contract is scheduled into the NYISO Real-Time Market ~~in excess of that in the DAM~~ (SCD RT Sched Trans :Trans (MW) > 0 ~~Hr DAM Sched Trans :Trans (MW)~~).

1.3.7.2.4 Settlement Algorithm

SCD Total BalMkt TUC Stlmnt ($) is calculated as:

If the given Transaction Contract is a Bilateral Export Transaction:

- TransCnt Transaction Type = "TUC"
- TransCnt Transaction Category = "Export"

SCD Total BalMkt TUC Stlmnt ($) =

SCD BalMkt TUC Loss Stlmnt ($) - SCD BalMkt TUC Cong Stlmnt ($)

Where:

SCD BalMkt TUC Loss Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Loss Price :Sink ($/MW) - SCD RT Loss Price :Src ($/MW)} ~~* {SCD Interval Seconds ÷ 3,600 seconds}[10]~~

SCD BalMkt TUC Cong Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Cong Price :Sink ($/MW) - SCD RT Cong Price :Src ($/MW)} ~~* {SCD Interval Seconds ÷ 3,600 seconds}~~

And SCD BalMkt TUC Sched (MWh) is calculated as:

SCD BalMkt TUC Sched (MWh) =

SCD BalMkt TUC Sched (MW) * {SCD Interval Seconds ÷3,600 seconds}

Where:

SCD BalMkt TUC Sched (MW) =

SCD RT Sched Trans :Trans (MW) - Hr DAM Sched Trans :Trans (MW)

1.3.7.2.5 Additional Information

Curtailment (Conditions for using Real-Time or Hour-Ahead Market Prices ($/MW)):

The above settlements are settled at LBMPs dependent upon whether the contract(s) are modified (either changed during the Balancing Market Evaluation (BME) process or curtailed during the Hour-Ahead Market) and who modifies them. The two Market Component Prices used in the above settlement calculation are either Real-Time Market Prices or Hour-Ahead Market Prices. If a transaction is not curtailed, or is curtailed by NYISO or an external control area, the real-time price components are used for losses, and congestion. If a transaction is curtailed by the Market Participant, the lesser of the real-time and hour-ahead price components are used for losses, and congestion.

~~*Grand-fathered Transmission Rights (GTR):*~~

~~Transaction Customers (TC) holding Grand-fathered Transmission Rights (GTR) may be exempt (up to a pre-determined MW amount) from paying the Congestion Component of the Transmission Usage Charge (TUC). To receive the GTR credit, the TC must schedule the bilateral transaction in the Day Ahead Market (DAM) and follow its DAM transaction schedule. The TC will not receive any compensation for un-used GTRs, and will not be permitted to resell or transfer these Grand-fathered Rights unless permitted in the existing agreements.~~

~~If the Transaction Customer (TC) holding Grand-fathered Transmission Rights (GTR) does not schedule the bilateral transaction in the Day Ahead Market (DAM) or exceeds a pre-determined MW amount (set for each GTR), the TC will pay the real-time TUC for all Energy transmitted under the~~

[10] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

~~bilateral transaction exceeding it's Day Ahead schedule or for the amount exceeding the GTRs pre-determined MW amount (if the transaction was scheduled Day Ahead).~~

~~*Cut Transactions:*~~

~~Transactions that were cut during a given SCD-interval will have the corresponding SCD BalMkt TUC Sched (MW) value adjusted prior to the determination of the TUC Loss component ($) to prorate the integrated energy amount during the SCD-interval. The integrated energy is prorated based on net seconds of the cut time to the total time during the interval.~~

~~**NOTE:** The interval in which the cut occurs will also be adjusted to account for the impact of the cut to the amount of energy in the next interval.~~

Non-Firm Transactions:

Non-Firm transactions do not pay congestion costs by rule. Therefore SCD BalMkt TUC Cong Stlmnt ($) = 0.

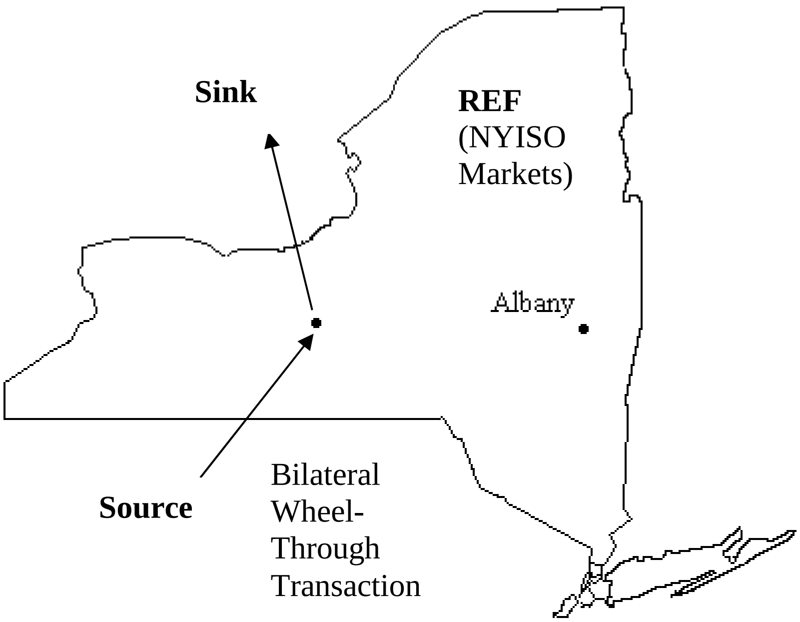
1.3.7.2.6 References

1.3.7.3 Wheel-Through

1.3.7.3.1 Description

The Transaction Balancing Market Transmission Usage Charge (TUC) settlement for Wheel-Through's is intended to charge any additional TUCs (as a result of additional transaction bidding) to Transaction Customers with Bilateral Wheel-Through Transaction Contracts in the NYISO Real-Time Market for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Wheel-Through Transactions (energy is transmitted through the NYCA, not produced or consumed in the NYCA) are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO who contracted with a non-NYCA load customer (in an external control area) to supply energy to meet non-NYCA load requirements with energy from a non-NYCA generation source (in an external control area). These transactions are scheduled with the NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and a NYISO external proxy bus (represents an external control area) as the scheduled Point of Withdrawal (POW). Real-Time Transactions are scheduled through the Balancing Market Evaluation (BME) transaction scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.



This settlement is a charge (when RT Trans Sched MW > DAM Trans Sched MW) to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction scheduled in the NYISO Real-Time Market. It is determined at the 5 minute security constrained dispatch (SCD) level for each Bilateral Wheel-Through Transaction.

The NYISO recovers losses and congestion costs associated with transmission service scheduled to deliver these Bilateral Wheel-Through Transactions (external to the NYISO energy markets). The total settlement is the ~~sum~~ net of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by additional Real-Time transmission service requests (in excess of DAM).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from additional Real-Time transmission service requests (in excess of DAM).

~~Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets. The GTR credit will off-set the amount of Balancing Market TUCs (provided the contract was scheduled in the DAM, and followed its schedule) that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR.~~

1.3.7.3.2 Required Data Elements

1.3.7.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a	Y

Bill Code	Title	Business Description	DSS Value
		given transaction, for an SCD interval.	
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y
	SCD RT Cong Price :Sink ($/MW)	Real-Time Congestion Price - Sink ($/MW) is a number representing the real-time price of congestion component at the sink load bus LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Sink ($/MW)	Real-Time Loss Price - Sink ($/MW) is a number representing the real-time price of loss component at the sink load bus LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.7.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt TUC Sched (MW)	Balancing Market Transaction Usage Charge Schedule (MW) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges settlements/charges	Y
	SCD BalMkt TUC Sched (MWh)	Balancing Market Transaction Usage Charge Schedule (MWh) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges settlements/charges	Y
	SCD BalMkt TUC Cong Stlmnt ($)	Balancing Market Transmission Usage Charge Congestion Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for congestion for the given transaction	Y
	SCD BalMkt TUC Loss Stlmnt ($)	Balancing Market Transmission Usage Charge Loss Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for	Y

Bill Code	Title	Business Description	DSS Value
		loss for the given transaction	

1.3.7.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt TUC Stlmnt ($)	Total Balancing Market Transmission Usage Charge Settlement ($) is a number representing the BAS-determined amount of total balancing market transmission usage charges for the given transaction; it is the sum of the balancing market transmission usage charge congestion and loss components	Y

1.3.7.3.3 Eligibility

Transaction Customers will receive a charge for Balancing Market Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a Real-Time Bilateral Wheel-Through Transaction
  - TransCnt Transaction Type = "TUC"
  - TransCnt Transaction Category = Wheel-Through
    - Source Location is a NYISO external proxy bus
    - Sink Location is a NYISO external proxy bus
  - ~~Source Location is a NYISO external proxy bus~~
  - ~~Sink Location is a NYISO external proxy bus~~
  - TransCnt Transaction Category = Wheel-Through
- The Transaction Contract is scheduled into the NYISO Real-Time Market ~~in excess of that in the DAM~~ (SCD RT Sched Trans :Trans (MW) > 0 ~~Hr DAM Sched Trans :Trans (MW)~~).

1.3.7.3.4 Settlement Algorithm

SCD Total BalMkt TUC Stlmnt ($) is calculated as:

If the given Transaction Contract is a Bilateral Wheel-Through Transaction:

- TransCnt Transaction Type = "TUC"
- TransCnt Transaction Category = "Wheel-Through"

SCD Total BalMkt TUC Stlmnt ($) =

SCD BalMkt TUC Loss Stlmnt ($) - SCD BalMkt TUC Cong Stlmnt ($)

Where:

SCD BalMkt TUC Loss Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Loss Price :Sink ($/MW) - SCD RT Loss Price :Src ($/MW)} ~~* {SCD Interval Seconds ÷ 3,600 seconds}~~[11]

SCD BalMkt TUC Cong Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Cong Price :Sink ($/MW) - SCD RT Cong Price :Src ($/MW)} ~~* {SCD Interval Seconds ÷ 3,600 seconds}~~

And SCD BalMkt TUC Sched (MWh) is calculated as:

SCD BalMkt TUC Sched (MWh) =

SCD BalMkt TUC Sched (MW) * {SCD Interval Seconds ÷3,600 seconds}

Where:

SCD BalMkt TUC Sched (MW) =

SCD RT Sched Trans :Trans (MW) - Hr DAM Sched Trans :Trans (MW)

1.3.7.3.5 Additional Information

Curtailment (Conditions for using Real-Time or Hour-Ahead Market Prices ($/MW)):

The above settlements are settled at LBMPs dependent upon whether the contract(s) are modified (either changed during the Balancing Market Evaluation (BME) process or curtailed during the Hour-Ahead Market) and who modifies them. The two Market Component Prices used in the above settlement calculation are either Real-Time Market Prices or Hour-Ahead Market Prices. If a transaction is not curtailed, or is curtailed by NYISO or an external control area, the real-time price components are used for losses, and congestion. If a transaction is curtailed by the Market Participant, the lesser of the real-time and hour-ahead price components are used for losses, and congestion.

~~*Grand-fathered Transmission Rights (GTR):*~~

~~Transaction Customers (TC) holding Grand-fathered Transmission Rights (GTR) may be exempt (up to a pre-determined MW amount) from paying the Congestion Component of the Transmission Usage Charge (TUC). To receive the GTR credit, the TC must schedule the bilateral transaction in the Day Ahead Market (DAM) and follow its DAM transaction schedule. The TC will not receive any compensation for un-used GTRs, and will not be permitted to resell or transfer these Grand-fathered Rights unless permitted in the existing agreements.~~

~~If the Transaction Customer (TC) holding Grand-fathered Transmission Rights (GTR) does not schedule the bilateral transaction in the Day Ahead Market (DAM) or exceeds a pre-determined MW amount (set for each GTR), the TC will pay the real-time TUC for all Energy transmitted under the~~

[11] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

~~bilateral transaction exceeding it's Day Ahead schedule or for the amount exceeding the GTRs pre-determined MW amount (if the transaction was scheduled Day Ahead).~~

~~*Cut Transactions:*~~

~~Transactions that were cut during a given SCD-interval will have the corresponding SCD BalMkt TUC Sched (MW) value adjusted prior to the determination of the TUC Loss component ($) to prorate the integrated energy amount during the SCD-interval. The integrated energy is prorated based on net seconds of the cut time to the total time during the interval.~~

~~**NOTE:** The interval in which the cut occurs will also be adjusted to account for the impact of the cut to the amount of energy in the next interval.~~

Non-Firm Transactions:

Non-Firm transactions do not pay congestion costs by rule. Therefore SCD BalMkt TUC Cong Stlmnt ($) = 0.

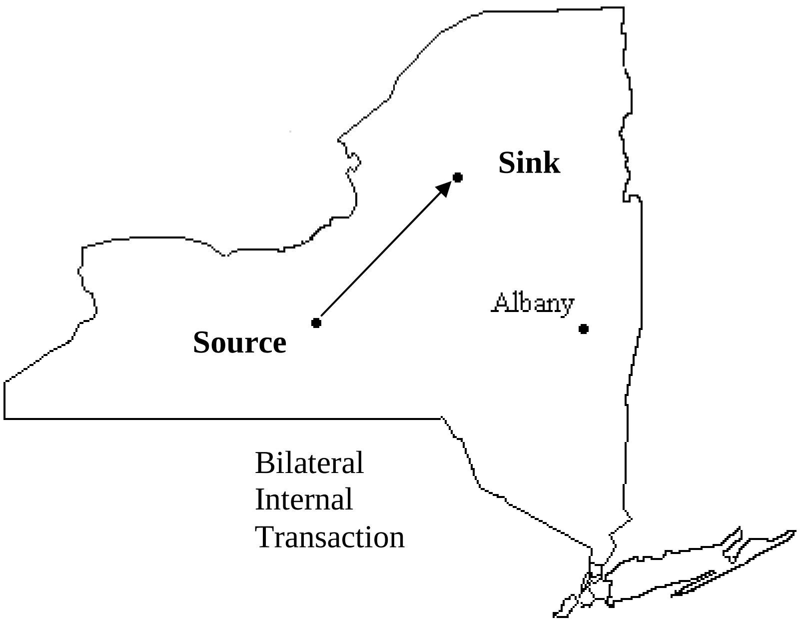
1.3.7.3.6 References

1.3.7.4 Internal

1.3.7.4.1 Description

The Transaction Balancing Market Transmission Usage Charge (TUC) settlement for Internal's is intended to charge any additional TUCs (as a result of additional transaction bidding) to Transaction Customers with Bilateral Internal Transaction Contracts in the NYISO Hour Ahead Market (HAM) for the usage of the New York Control Area (NYCA) transmission grid (losses and congestion).

Bilateral Internal Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO who contracted with a NYCA load customer to supply energy to meet NYCA load requirements with energy from a NYCA generation source. These transactions are scheduled with a NYISO generation bus as the scheduled Point of Injection (POI) and a NYISO load bus as the scheduled Point of Withdrawal (POW). Real-Time Transactions are scheduled through the Balancing Market Evaluation (BME) transaction scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.



Bilateral
Internal
Transaction

This settlement is a charge (when HAM Bid MW > DAM Bid MW) to the Transaction Customer for the usage of the NYCA transmission grid for the given transaction scheduled in the NYISO Hour Ahead Market (HAM). It is determined at the 5 minute security constrained dispatch (SCD) level for each Bilateral Internal Transaction.

The NYISO recovers losses and congestion costs associated with transmission service scheduled to deliver these Bilateral Internal Transactions (external to the NYISO energy markets). The total settlement is the ~~sum~~ net of 2 components as follows:

- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by additional HAM transmission service requests (HAM Bid MW).
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system from additional HAM transmission service requests (HAM Bid MW).

~~Transaction Customers with transmission contracts prior to the NYISO markets, that grant pre-existing transmission rights, are grand-fathered (grand-fathered transmission rights) into the NYISO markets. The GTR credit will off-set the amount of Balancing Market TUCs (provided the contract was scheduled in the DAM, and followed its schedule) that would normally be charged to the Transaction Customer for the given Transaction Contract, up to the amount of the GTR.~~

1.3.7.4.2 Required Data Elements

1.3.7.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Category	Transaction Category represents the category in which the given transaction belongs (import, export, wheel through, internal).	

Bill Code	Title	Business Description	DSS Value
	TransCnt Transaction Type	Transaction Contract Transaction Type represents the type of the given transaction, based on whether the transaction is buying/selling energy from/to the NYISO-administered markets (values are LBMP or TUC).	
	Gen PTID	Generator PTID is a number representing the unique point identifier for a generator.	Y
	Hr DAM Trans Bid Fixed Energy (MW)	Day Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO DAM for the given transaction, submitted by a transaction customer on a transaction bid	Y
	Hr HAM Trans Bid Fixed Energy (MW)	Hour Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO HAM for the given transaction, submitted via a transaction bid	Y
	SCD RT Cong Price :Sink ($/MW)	Real-Time Congestion Price - Sink ($/MW) is a number representing the real-time price of congestion component at the sink load bus LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Sink ($/MW)	Real-Time Loss Price - Sink ($/MW) is a number representing the real-time price of loss component at the sink load bus LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.7.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt TUC Sched (MW)	Balancing Market Transaction Usage Charge Schedule (MW) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges settlements/charges	Y
	SCD BalMkt TUC Sched (MWh)	Balancing Market Transaction Usage Charge Schedule (MWh) is a number representing the amount of energy subject to NYISO balancing market transmission usage charges	Y

Bill Code	Title	Business Description	DSS Value
		settlements/charges	
	SCD BalMkt TUC Loss Stlmnt ($)	Balancing Market Transmission Usage Charge Loss Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for loss for the given transaction	Y
	SCD BalMkt TUC Cong Stlmnt ($)	Balancing Market Transmission Usage Charge Congestion Component Settlement ($) is a number representing the BAS-determined amount of balancing market transmission usage charge for congestion for the given transaction	Y

1.3.7.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt TUC Stlmnt ($)	Total Balancing Market Transmission Usage Charge Settlement ($) is a number representing the BAS-determined amount of total balancing market transmission usage charges for the given transaction; it is the sum of the balancing market transmission usage charge congestion and loss components	Y

1.3.7.4.3 Eligibility

Transaction Customers will receive a charge for Balancing Market Transmission Usage Charges (TUC) ($) if all of the following conditions exist:

- The Transaction Contract is a Hour Ahead Market (HAM) Bilateral Internal Transaction
  - TransCnt Transaction Type = "TUC"
  - TransCnt Transaction Category = Internal
    - Source Location is a NYISO load bus
    - Sink Location is a NYISO generation bus
  - TransCnt Transaction Category = Internal
- The Transaction Contract is bid into the NYISO HAM above that in the DAM (Hr HAM Trans Bid Fixed Energy (MW) > Hr DAM Trans Bid Fixed Energy (MW)).

1.3.7.4.4 Settlement Algorithm

SCD Total BalMkt TUC Stlmnt ($) is calculated as:

If the given Transaction Contract is a Bilateral Internal Transaction:

- TransCnt Transaction Type = "TUC"

- TransCnt Transaction Category = "Internal"

SCD Total BalMkt TUC Stlmnt ($) =

SCD BalMkt TUC Loss Stlmnt ($) - SCD BalMkt TUC Cong Stlmnt ($)

Where:

SCD BalMkt TUC Loss Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Loss Price :Sink ($/MW) - SCD RT Loss Price :Src ($/MW)} ~~* {SCD Interval Seconds ÷ 3,600 seconds}~~[12]

SCD BalMkt TUC Cong Stlmnt ($) =

SCD BalMkt TUC Sched (MWh) * {SCD RT Cong Price :Sink ($/MW) - SCD RT Cong Price :Src ($/MW)} ~~* {SCD Interval Seconds ÷ 3,600 seconds}~~

And SCD BalMkt TUC Sched (MWh) is calculated as:

SCD BalMkt TUC Sched (MWh) =

SCD BalMkt TUC Sched (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

Where:

SCD BalMkt TUC Sched (MW) =

{Max{Hr DAM Trans Bid Fixed Energy (MW), Hr HAM Trans Bid Fixed Energy (MW)} - Hr DAM Trans Bid Fixed Energy (MW)}

1.3.7.4.5 Additional Information

~~*Curtailment:*~~

~~Internal bilateral transactions between suppliers and loads located within the NYCA are purely financial in nature (settled upon bid capacity regardless of any difference between DAM bid and RT scheduled transactions) and are not usually subject to curtailment. Curtailments are usually a result of a generators' inability to fulfill specific contractual obligations to physically serve the contract rather than purchasing energy from the spot market to cover the contracts.~~

~~*Grand-fathered Transmission Rights (GTR):*~~

~~Transaction Customers (TC) holding Grand-fathered Transmission Rights (GTR) may be exempt (up to a pre-determined MW amount) from paying the Congestion Component of the Transmission Usage Charge (TUC). To receive the GTR credit, the TC must schedule the bilateral transaction in the Day Ahead Market (DAM) and follow its DAM transaction schedule. The TC will not receive any compensation for un-used GTRs, and will not be permitted to resell or transfer these Grand-fathered Rights unless permitted in the existing agreements.~~

[12] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

~~If the Transaction Customer (TC) holding Grand-fathered Transmission Rights (GTR) does not schedule the bilateral transaction in the Day Ahead Market (DAM) or exceeds a pre-determined MW amount (set for each GTR), the TC will pay the real-time TUC for all Energy transmitted under the bilateral transaction exceeding it's Day Ahead schedule or for the amount exceeding the GTRs pre-determined MW amount (if the transaction was scheduled Day Ahead).~~

Public Utility Regulatory Policy Act (PURPA) Bilateral Contracts:

Since a generator's output will vary in Real-Time, and PURPA Type 1 generators are not allowed to participate in the NYISO energy markets (can't buy/sell in the DAM or Balancing Markets), a mechanism has been created within the settlements process that will either increase (to cover shortages) or decrease (reduce overages) bilateral transaction schedules served from PURPA Type 1 generators. The adjustment to the RT transaction schedule will adjust the scheduled energy match the actual output of the PURPA Type 1 generator (no balancing market purchases or sales).

If the transactions served from PURPA Type 1 generators are stacked, the adjustments will be applied in the order stacked until the necessary total adjustment has been made. If they are not stacked, all transactions served from the generator will be adjusted based on transaction schedule ratio (transaction schedule to total transaction schedules.

The amount of shortage to be adjusted is determined as the difference between the generator's total RT Trans Sched (MW) and its Adjusted (MW) (actual output level). The amount of overage to be adjusted is determined as the difference between the generator's Adjusted (MW) (actual output level) and its total RT Trans Sched (MW).[13]

~~*Cut Transactions:*~~

~~Transactions that were cut during a given SCD interval will have the corresponding SCD BalMkt TUC Sched (MW) value adjusted prior to the determination of the TUC Loss component ($) to prorate the integrated energy amount during the SCD interval. The integrated energy is prorated based on net seconds of the cut time to the total time during the interval.~~

~~**NOTE:** The interval in which the cut occurs will also be adjusted to account for the impact of the cut to the amount of energy in the next interval.~~

~~*Non-Firm Transactions:*~~

~~Non-Firm transactions do not pay congestion costs by rule. Therefore SCD BalMkt TUC Cong Stlmnt ($) = 0.~~

Split Transactions

For certain transactions, the TUCs are determined and split between the sink load serving entity organization and the source generator organization.

~~For these transactions, the above mentioned GTRs, and Non-Firm Transactions Additional Information (adjustments) still applies. However, there are no adjustments made due to transaction cuts.~~

[13] Specifically for the following generator (Gen PTID = 23800), the adjustment needs to also include the DAM Sched Gen (MW).

The TUCs associated with the source generator organization remain associated with same transaction contract ID. The TUCs associated with the sink load serving entity organization are associated with a new transaction contract ID, which is determined by adding 1,000,000,000 to the original transaction contract ID.

1.3.7.4.6 References

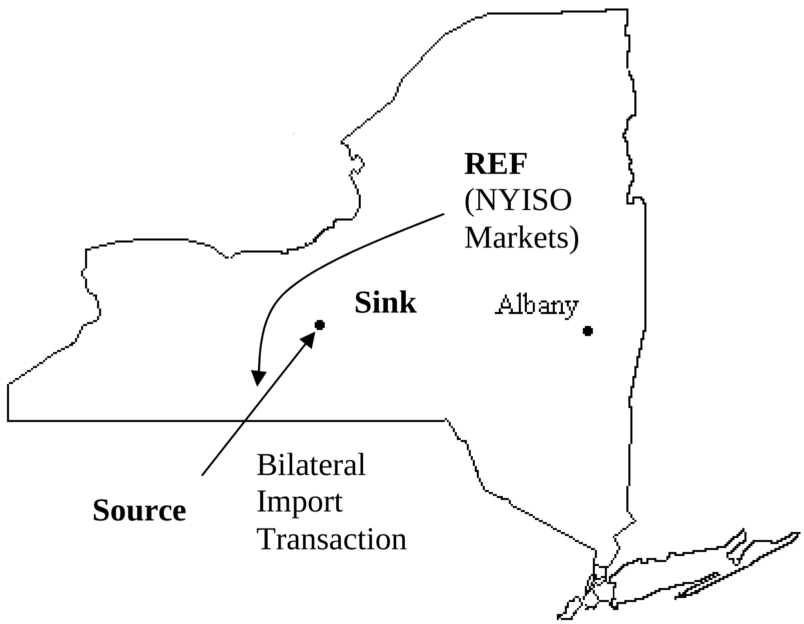
1.3.8 Transaction Balancing Market Replacement Energy

1.3.8.1 Description

The Transaction Balancing Market Replacement Energy ($) settlement is intended to address any shortfall between the amount of HAM Transaction Bid Energy (MW) and the actual Real-Time Energy Scheduled (MW) via Bilateral Import Transactions. Transaction Customers are required to purchase Balancing Market Replacement Energy from the NYISO Balancing Market if their Real-Time Schedule (MW) is less than their HAM Bid Energy (MW).

Bilateral Import Transactions are flows of energy requested by Market Participants (acting as Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who have contracted to meet the load requirements of a NYCA load. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and a NYISO load bus as the scheduled Point of Withdrawal (POW). Real-Time Transactions are scheduled through the Balancing Market Evaluation (BME) transaction scheduling process, and DAM Transactions are scheduled in the DAM transaction scheduling process.

This settlement is a charge to the Transaction Customer, when an energy shortfall occurs, due to the requirement to purchase replacement energy to replace the energy shortfall. This settlement is based on the amount of Balancing Market Replacement Energy purchased, times the HAM Price (energy, loss, and congestion) corresponding to the Transaction Contract's source location. It is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Bilateral Import Transaction which is scheduled below the Transaction Contract's bid (MW).



The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Transaction Customer Settlement for Balancing Market Replacement Energy purchased from the NYISO Balancing Market.
- *Losses Settlement* - Transaction Customer Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by Balancing Market Replacement Energy purchases in the NYISO Balancing Market.
- *Congestion Settlement* - Transaction Customer Settlement for congestion created/eliminated on the NYCA system by Balancing Market Replacement Energy purchases in the NYISO Balancing Market.

1.3.8.2 Required Data Elements

1.3.8.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Trans Bid Fixed Energy (MW)	Day Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO DAM for the given transaction, submitted by a transaction customer on a transaction bid	Y
	Hr DAM Sched Trans :Trans (MW)	Day Ahead Market Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled for the given transaction by the NYISO in the Day Ahead Market	Y
	Hr HAM Trans Bid Fixed Energy (MW)	Hour Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO HAM for the	Y

Bill Code	Title	Business Description	DSS Value
		given transaction, submitted via a transaction bid	
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a given transaction, for an SCD interval.	Y
	SCD RT Energy Price :Src ($/MW)	Real-Time Energy Price - Source ($/MW) is a number representing the real-time price of energy component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.8.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt Repl Energy (MW)	Balancing Market Replacement Energy (MW) is a number representing the amount of energy subject to NYISO balancing market replacement energy settlements/charges	Y
	SCD BalMkt Repl Engy Stlmnt ($)	Balancing Market Replacement Energy -Energy Component Settlement ($) is a number representing the BAS-determined amount of balancing market replacement energy component settlement for the given transaction and interval; created due to a real-time cut to or curtailment of the given transaction	Y
	SCD BalMkt Repl Loss Stlmnt ($)	Balancing Market Replacement Energy -Loss Component Settlement ($) is a number representing the BAS-determined amount of balancing market replacement energy loss component settlement for the given transaction and interval; created due to a real-time cut to or curtailment of the given transaction	Y
	SCD BalMkt Repl Cong Stlmnt ($)	Balancing Market Replacement Energy - Congestion Component Settlement ($) is a number representing the BAS-determined amount of balancing market replacement energy congestion	Y

Bill Code	Title	Business Description	DSS Value
		component settlement for the given transaction and interval; created due to a real-time cut to or curtailment of the given transaction	

1.3.8.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt Repl Stlmnt ($)	Total Balancing Market Replacement Energy Settlement ($) is a number representing the BAS-determined amount of total balancing market replacement energy settlement for the given transaction and interval; it is the sum of the balancing market replacement energy, loss, and congestion component settlements	Y

1.3.8.3 Eligibility

Transaction Customers will receive a charge for Balancing Market Replacement Energy ($) if all of the following conditions exist:

- The Transaction Contract is a Real-Time Bilateral Import Transaction
    - Source Location is not the NYISO market reference proxy bus
    - Sink Location is not the NYISO market reference proxy bus
    - TransCnt Transaction Category = Import
- The Transaction Contract is scheduled in the NYISO Real-Time Market at an amount less than the maximum amount bid in the DAM or HAM by the Transaction Customer on the DAM or HAM Transaction Bid (SCD RT Sched Trans :Trans (MW) < Max(Hr HAM Trans Bid Fixed Energy (MW), Hr DAM Trans Bid Fixed Energy (MW))).
- The Transaction Contract is scheduled in the NYISO Real-Time Market resulting in a Balancing Market Replacement Energy (SCD BalMkt Repl Energy (MW) > 0).

1.3.8.4 Settlement Algorithm

SCD BalMkt Total Repl Stlmnt ($) is calculated as:

SCD BalMkt Total Repl Stlmnt ($) =

SCD BalMkt Repl Engy Stlmnt ($) + SCD BalMkt Repl Loss Stlmnt ($) - SCD BalMkt Repl Cong Stlmnt ($)

Where:

SCD BalMkt Repl Engy Stlmnt ($) =

SCD BalMkt Repl Energy (MW) * SCD RT Energy Price :Src ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds} [14]

SCD BalMkt Repl Loss Stlmnt ($) =

SCD BalMkt Repl Energy (MW) * SCD RT Loss Price :Src ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

SCD BalMkt Repl Cong Stlmnt ($) =

SCD BalMkt Repl Energy (MW) * SCD RT Cong Price :Src ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

And SCD BalMkt Repl Energy (MW) is calculated as:

SCD BalMkt Repl Energy (MW) =

Max{Hr HAM Trans Bid Fixed Energy (MW), Hr DAM Trans Bid Fixed Energy (MW)} - SCD RT Sched Trans :Trans (MW) - {Hr DAM Trans Bid Fixed Energy (MW) - Hr DAM Sched Trans :Trans (MW)}

1.3.8.5 Additional Information

SCD RT Total Price :Src ($/MW) can be calculated as:

SCD RT Total Price :Src ($/MW) =

SCD RT Energy Price :Src ($/MW) + SCD RT Loss Price :Src ($/MW) - SCD RT Cong Price :Src ($/MW)

SCD BalMkt Repl Energy (MWh) can be calculated as:

SCD BalMkt Repl Energy (MWh) =

SCD BalMkt Repl Energy (MW) * {SCD Interval Seconds ÷ 3,600 seconds}

1.3.8.6 References

1.3.9 Transaction Import Extraordinary Corrective Action (ECA) Supplier Guarantee

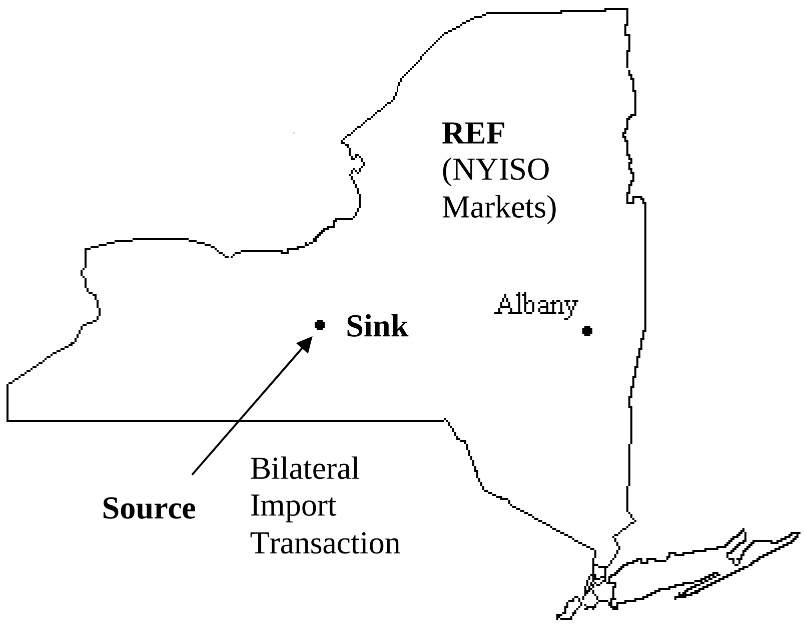
1.3.9.1 Bilateral Import Transactions

1.3.9.1.1 Description

The Import Extraordinary Corrective Action (ECA) Supplier Guarantee settlement is an uplift payment intended to compensate Transaction Customers (TC) when NYISO curtails a Bilateral Import Transaction below their expected schedule in real-time for system reliability.

[14] SCD Interval Seconds ÷ 3,600 seconds is used to settle by time weighting the calculation over the interval period.

Bilateral Import Transactions are flows of energy requested by Market Participants (acting as a Transaction Customers) and scheduled by the NYISO from NYCA-external suppliers who contracted with another Market Participant to supply energy to meet NYCA load requirements. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and a NYISO physical load bus as the scheduled Point of Withdrawal (POW).



This settlement is a payment to the Transaction Customer, when the given transaction contract is cut by NYISO for reliability reasons. It is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Bilateral Import Transaction.

1.3.9.1.2 Required Data Elements

1.3.9.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Trans Cut By Desc	Transaction Cut By Description represents the organization who required the cut to the given transaction (market participant, NYISO, other control area, etc.)	Y
	Hr HAM Trans Bid Fixed Energy (MW)	Hour Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO HAM for the given transaction, submitted via a transaction bid	Y
	Hr HAM Trans Bid Decr Dollar ($/MW)	Hour Ahead Market Transaction Bid Decremental Bid Price ($/MW) is a number representing the	Y

Bill Code	Title	Business Description	DSS Value
		price at which the NYISO should schedule the given transaction, based on HAM market prices at the proxy buses	
	Hr HAM Sched Trans :Trans (MW)	Hour Ahead Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled by NYISO in the HAM for the given transaction and hour	Y
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a given transaction, for an SCD interval.	Y
	SCD RT Energy Price :Src ($/MW)	Real-Time Energy Price - Source ($/MW) is a number representing the real-time price of energy component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	Hr DAM Trans Bid Fixed Energy (MW)	Day Ahead Market Transaction Bid Fixed Energy (MW) is a number representing the amount of energy being bid into the NYISO DAM for the given transaction, submitted by a transaction customer on a transaction bid	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.9.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD Imp ECA Energy (MW)	SCD Import Extraordinary Corrective Action Energy (MW) is a number representing the amount of energy corresponding to the Import ECA Supplier Guarantee settlement, for the given transaction and SCD-interval.	N
	SCD RT Total Price :Src ($/MW)	Real-Time Total Price - Source ($/MW) is a number representing the total real-time price at a load bus (LBMP energy component + LBMP losses component - LBMP congestion component)	Y

1.3.9.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Imp ECA Suppl Guar ($)	SCD Import Extraordinary Corrective Action Supplier Guarantee ($) is a number representing the settlement amount paid to a Transaction Customer when their transaction is cut in real-time by NYISO due to constraints, for the given transaction and SCD-interval.	N

1.3.9.1.3 Eligibility

Transaction Customers will receive a payment for Extraordinary Corrective Action (ECA) Supplier Guarantee for Bilateral Import Transactions ($) if all of the following conditions exist:

- The Transaction Contract is a Real-Time Bilateral Import Transaction
  - Source Location is a NYISO external control area proxy bus
  - Sink Location is NOT the NYISO market reference proxy bus
  - TransCnt Transaction Category = Import
- The transaction contract is scheduled in the NYISO Real-Time Energy Market below that scheduled in the Hour Ahead Market (SCD RT Sched Trans :Trans (MW) < Hr HAM Sched Trans :Trans (MW)).

1.3.9.1.4 Settlement Algorithm

SCD Imp ECA Suppl Guar ($) is calculated as:

If Trans Cut By Desc = "NYISO"

SCD Imp ECA Suppl Guar ($) = SCD Imp ECA Energy (MW) * {SCD RT Total Price :Src ($/MW) - Hr HAM Trans Bid Decr Dollar ($/MW)}

OR If: SCD Imp ECA Suppl Guar ($) < 0, then SCD Imp ECA Suppl Guar ($) = 0

Where:

SCD Imp ECA Energy (MW) = {Hr HAM Trans Bid Fixed Energy (MW) - SCD RT Sched Trans :Trans (MW)} - {Hr HAM Trans Bid Fixed Energy (MW) - Hr HAM Sched Trans :Trans (MW)}

SCD RT Total Price :Src ($/MW) = SCD RT Energy Price :Src ($/MW) + SCD RT Loss Price :Src ($/MW) - SCD RT Cong Price :Src ($/MW)

1.3.9.1.5 Additional Information

Import ECA Supplier Guarantee Settlement Effective Date:

This settlement is effective from 12/20/2001 00:00 forward, and is calculated as noted above. For intervals prior to this date/time, SCD Imp ECA Suppl Guar ($) = 0.

When Hr HAM Trans Bid Fixed Energy (MW) = NULL:

Hr HAM Trans Bid Fixed Energy (MW) = Hr DAM Trans Bid Fixed Energy (MW)

When Hr HAM Trans Bid Decr Dollar ($/MW) < 0:

Hr HAM Trans Bid Decr Dollar ($/MW) = 0.

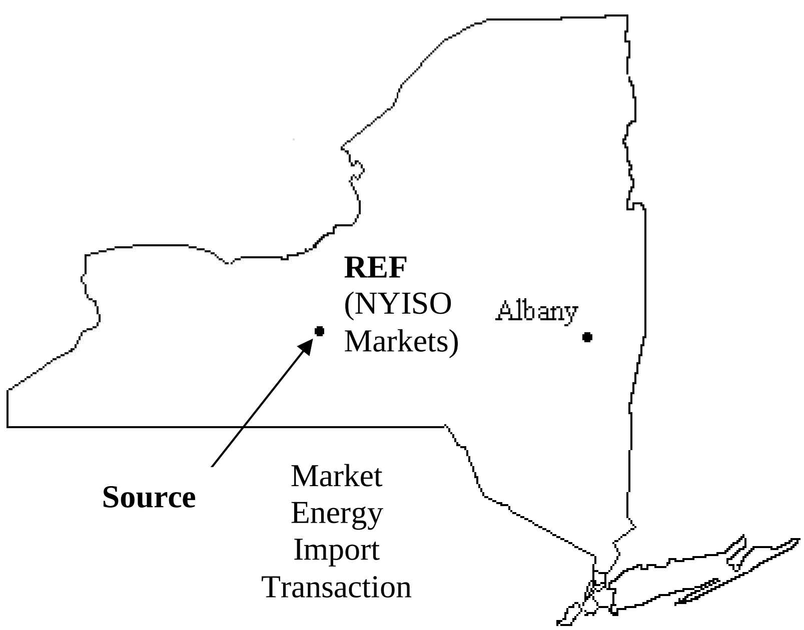
1.3.9.1.6 References

1.3.9.2 Market Energy Import Transactions

1.3.9.2.1 Description

The Import Extraordinary Corrective Action (ECA) Supplier Guarantee settlement is an uplift payment intended to compensate Transaction Customers (TC) when NYISO curtails a Market Energy Import Transaction below their expected schedule in real-time for system reliability.

Market Energy Import Transactions are flows of energy requested by Market Participants (acting as a Transaction Customers) and scheduled by the NYISO from NYCA-external power suppliers who offer their resources to the NYISO wholesale energy markets. These transactions are scheduled with a NYISO external proxy bus (represents an external control area) as the scheduled Point of Injection (POI) and the NYISO reference bus (represents the NYISO energy markets) as the scheduled Point of Withdrawal (POW).



This settlement is a payment to the Transaction Customer, when the given transaction contract is cut by NYISO for reliability reasons. It is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Market Energy Import Transaction.

1.3.9.2.2 Required Data Elements

1.3.9.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Trans Cut By Desc	Transaction Cut By Description represents the organization who required the cut to the given transaction (market participant, NYISO, other control area, etc.)	Y
	Hr HAM Trans Bid Decr Dollar ($/MW)	Hour Ahead Market Transaction Bid Decremental Bid Price ($/MW) is a number representing the price at which the NYISO should schedule the given transaction, based on HAM market prices at the proxy buses	Y
	Hr HAM Sched Trans :Trans (MW)	Hour Ahead Scheduled Transaction Energy (MW) is a number representing the amount of energy scheduled by NYISO in the HAM for the given transaction and hour	Y
	SCD RT Sched Trans :Trans (MW)	Real Time Scheduled Transaction Energy (MW) is a number representing the total amount of transaction energy scheduled in real time for a given transaction, for an SCD interval.	Y
	SCD RT Energy Price :Src ($/MW)	Real-Time Energy Price - Source ($/MW) is a number representing the real-time price of energy component at the source generator LBMP per interval	Y
	SCD RT Loss Price :Src ($/MW)	Real-Time Loss Price - Source ($/MW) is a number representing the real-time price of loss component at the source generator LBMP per interval	Y
	SCD RT Cong Price :Src ($/MW)	Real-Time Congestion Price - Source ($/MW) is a number representing the real-time price of congestion component at the source generator LBMP per interval	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

1.3.9.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD Imp ECA Energy (MW)	SCD Import Extraordinary Corrective Action Energy (MW) is a number representing the amount of energy corresponding to the Import ECA Supplier Guarantee settlement, for the given	N

Bill Code	Title	Business Description	DSS Value
		transaction and SCD-interval.	
	SCD RT Total Price :Src ($/MW)	Real-Time Total Price - Source ($/MW) is a number representing the total real-time price at a load bus (LBMP energy component + LBMP losses component - LBMP congestion component)	Y

1.3.9.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Imp ECA Suppl Guar ($)	SCD Import Extraordinary Corrective Action Supplier Guarantee ($) is a number representing the settlement amount paid to a Transaction Customer when their transaction is cut in real-time by NYISO due to constraints, for the given transaction and SCD-interval.	N

1.3.9.2.3 Eligibility

Transaction Customers will receive a payment for Extraordinary Corrective Action (ECA) Supplier Guarantee for Market Energy Import Transactions ($) if all of the following conditions exist:

- The Transaction Contract is a Real-Time Energy Import Transaction
  - Source Location is a NYISO external control area proxy bus
  - Sink Location is the NYISO market reference proxy bus
  - TransCnt Transaction Category = Import
- The transaction contract is scheduled in the NYISO Real-Time Energy Market below that scheduled in the Hour Ahead Market (SCD RT Sched Trans :Trans (MW) < Hr HAM Sched Trans :Trans (MW)).

1.3.9.2.4 Settlement Algorithm

SCD Imp ECA Suppl Guar ($) is calculated as:

If Trans Cut By Desc = "NYISO"

SCD Imp ECA Suppl Guar ($) = SCD Imp ECA Energy (MW) * {SCD RT Total Price :Src ($/MW) - Hr HAM Trans Bid Decr Dollar ($/MW)}

OR If: SCD Imp ECA Suppl Guar ($) < 0, then SCD Imp ECA Suppl Guar ($) = 0

Where:

SCD Imp ECA Energy (MW) = {SCD RT Sched Trans :Trans (MW) - Hr HAM Sched Trans :Trans (MW)}

SCD RT Total Price :Src ($/MW) = SCD RT Energy Price :Src ($/MW) + SCD RT Loss Price :Src ($/MW) - SCD RT Cong Price :Src ($/MW)

1.3.9.2.5 Additional Information

Import ECA Supplier Guarantee Settlement Effective Date:

This settlement is effective from 12/20/2001 00:00 forward, and is calculated as noted above. For intervals prior to this date/time, SCD Imp ECA Suppl Guar ($) = 0.

When Hr HAM Trans Bid Decr Dollar ($/MW) < 0:

Hr HAM Trans Bid Decr Dollar ($/MW) = 0.

1.3.9.2.6 References

1.3.10 Ancillary Services

1.3.10.1 Ancillary Services

1.3.10.1.1 Transaction Customer Ancillary Services - MST Schedule 1 (S, SC, & D)

1.3.10.1.1.1 Description

The Transaction Customer (TC) Market Administration and Control Services Tariff (MST) Schedule 1 - Scheduling, System Control, and Dispatch (S, SC, & D) settlement ($) is intended to recover a portion of NYISO's operating costs from Transaction Customers.

NYISO operates the New York Control Area (NYCA) and its markets using two key tariffs: the Market Administration and Control Services Tariff (MST) and the Open Access Transmission Tariff (OATT). The MST defines the market requirements, rules, and procedures for Market Participants participating in the NYISO administered energy and ancillary service markets (i.e. DAM, HAM, RT, etc.). The OATT defines the regulations, requirements, and procedures for Market Participants in order to obtain access to the NYISO controlled NYCA transmission network.

All of NYISO operating costs for scheduling, system control, and dispatch (S, SC &D) are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) (exports and wheel-throughs only) through charges under Schedule 1. The estimated annual NYISO operating costs are determined, then a MST Schedule 1 Rate ($/MW) is determined using estimated load. This rate is then used over the year to recover the estimated annual NYSIO operating costs.

Market Participants acting as a TC that have signed the MST will be charged a portion of the total estimated annual NYISO operating costs based on their actual real-time export and wheel-through transaction scheduled energy. It is determined at the hourly-level for each TC that scheduled energy transactions (exports & wheel-throughs) in the NYISO energy markets.

1.3.10.1.1.2 Required Data Elements

1.3.10.1.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
607	Hr MST Sched 1 Rate ($/MW)	Hourly Market Administration and Control Area Services Tariff Schedule 1 Rate ($/MW) is a number representing the Market Administration and Control Area Services Tariff Schedule 1 costs. Schedule 1 of the MST covers MST customers' share of NYISO service charges.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Org Tariff Signed Ind	Organization Tariff Signed Indicator is a character representing whether or not the organization has signed the NYISO Market Services Tariff (MST), and/or the NYISO Open Access Transmission Tariff (OATT)	Y

1.3.10.1.1.2.2 Intermediates

None

1.3.10.1.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr MST Sched 1 Stlmnt :TC ($)	Hourly Market Administration and Control Area Services Tariff Schedule 1 Settlement - Transaction Customer ($) is a number representing the MST Schedule 1 settlement Scheduling, System Control, and Dispatch Service Charges for the transaction customer for the given hour. This is Schedule 1 of the NYISO MST.	Y

1.3.10.1.1.3 Eligibility

Transaction Customers will receive a charge for MST Schedule 1 ($) if all of the following conditions exist:

- The Transaction Customer scheduled real-time export or wheel-through energy within the NYCA (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).

1.3.10.1.1.4 Settlement Algorithm

Hr MST Sched 1 Stlmnt :TC ($) is calculated as:

If the Market Participant Organization has signed the NYISO Market Administration and Control Services Tariff (Org Tariff Signed Ind = “MST”):

Hr MST Sched 1 Stlmnt :TC ($) =

Hr MST Sched 1 Rate ($/MW) * {Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)}

1.3.10.1.1.5 Additional Information

On 09/01/2000, NYISO implemented a change to the allocation (50%-50%) of the Schedule 1 charges across Market Participants who have signed the MST and/or OATT.

- Prior to this date, Market Participants that had signed only the OATT were charged only the OATT Schedule 1 Charge ($) (MST Schedule 1 Charge ($) = 0). Market Participants that signed both the MST and OATT were charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($).
- After this date, Market Participants are charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($) according to the allocation (50%-50%) of charges for those signing the MST (automatically signed for the OATT). For those participants signing just the OATT, only the OATT Schedule 1 Charge ($) is charged according to the allocation (50%-50%) of charges.

85% / 15% Split of MST and OATT Schedule 1 Charges ($):

- Currently, 100% of the MST and OATT Schedule 1 Charges ($) are allocated to those Market Participants serving load (Load Serving Entities and Transaction Customers with respect to Bilateral/Market Energy Export and Wheel-Through Transactions). In the future, only 85% of these Schedule 1 charges will be allocated to those serving load, and the remaining 15% will be allocated to those Market Participants supplying energy.

1.3.10.1.1.6 References

The applicability of Transaction Customer Ancillary Services - MST Schedule 1 (S, SC, & D) charges is described within Schedule 1 of the MST (Market Administration and Control Area Services Tariff).

1.3.10.1.2 Transaction Customer Ancillary Services - OATT Schedule 1 (S, SC, & D)

1.3.10.1.2.1 Description

The Transaction Customer (TC) Open Access Transmission Tariff (OATT) Schedule 1 - Scheduling, System Control, and Dispatch (S, SC, & D) settlement ($) is intended to recover a portion of NYISO’s operating costs from Transaction Customers.

NYISO operates the New York Control Area (NYCA) and its markets using two key tariffs: the Market Administration and Control Services Tariff (MST) and the Open Access Transmission Tariff (OATT). The MST defines the market requirements, rules, and procedures for Market Participants participating in the NYISO administered energy and ancillary service markets (i.e. DAM, HAM, RT, etc.). The OATT defines the regulations, requirements, and procedures for Market Participants in order to obtain access to the NYISO controlled NYCA transmission network.

All of NYISO operating costs for scheduling, system control, and dispatch (S, SC &D) are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) (exports and wheel-throughs only) through charges under Schedule 1. The estimated annual NYISO operating costs are determined, then an OATT Schedule 1 Rate ($/MW) is determined using estimated load. This rate is then used over the year to recover the estimated annual NYSIO operating costs.

Market Participants acting as a TC that have signed the OATT will be charged a portion of the total estimated annual NYISO operating costs based on their actual real-time export and wheel-through transaction scheduled energy. It is determined at the hourly-level for each TC that scheduled energy transactions (exports and wheel-throughs) in the NYISO energy markets.

1.3.10.1.2.2 Required Data Elements

1.3.10.1.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
614	Hr OATT Sched 1 Rate ($/MW)	Hourly Open Access Transmission Tariff Schedule 1 Rate ($/MW) is a number representing the Open Access Transmission Tariff Schedule 1 cost. Schedule 1 of the OATT covers OATT customers' share of NYISO Schedule, System Control, and Dispatch Service charges and is paid by all organizations that have signed the OATT.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Org Tariff Signed Ind	Organization Tariff Signed Indicator is a character representing whether or not the organization has signed the NYISO Market Services Tariff (MST), and/or the NYISO Open Access Transmission Tariff (OATT)	Y

1.3.10.1.2.2.2 Intermediates

None

1.3.10.1.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr OATT Sched 1 Stlmnt :TC ($)	Hourly Open Access Transmission Tariff Schedule 1 Settlement - Transaction Customer ($) is a	Y

Bill Code	Title	Business Description	DSS Value
		number representing the OATT Schedule 1 settlement Scheduling, System Control, and Dispatch Service Charges for the transaction customer for the given hour. This is Schedule 1 of the NYISO OATT.	

1.3.10.1.2.3 Eligibility

Transaction Customers will receive a charge for OATT Schedule 1 ($) if all of the following conditions exist:

- The Transaction Customer scheduled real-time export or wheel-through energy within the NYCA (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).

1.3.10.1.2.4 Settlement Algorithm

Hr OATT Sched 1 Stlmnt :TC ($) is calculated as:

If the Market Participant Organization has signed the NYISO Open Access Transmission Tariff (Org Tariff Signed Ind = "OAT"):

Hr OATT Sched 1 Stlmnt :TC ($) =

Hr OATT Sched 1 Rate ($/MW) * {Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)}

1.3.10.1.2.5 Additional Information

On 09/01/2000, NYISO implemented a change to the allocation (50%-50%) of the Schedule 1 charges across Market Participants who have signed the MST and/or OATT.

- Prior to this date, Market Participants that had signed only the OATT were charged only the OATT Schedule 1 Charge ($) (MST Schedule 1 Charge ($) = 0). Market Participants that signed both the MST and OATT were charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($).
- After this date, Market Participants are charged both the OATT Schedule 1 Charge ($) and the MST Schedule 1 Charge ($) according to the allocation (50%-50%) of charges for those signing the MST (automatically signed for the OATT). For those participants signing just the OATT, only the OATT Schedule 1 Charge ($) is charged according to the allocation (50%-50%) of charges.

85% / 15% Split of MST and OATT Schedule 1 Charges ($):

- Currently, 100% of the MST and OATT Schedule 1 Charges ($) are allocated to those Market Participants serving load (Load Serving Entities and Transaction Customers with respect to Bilateral/Market Energy Export and Wheel-Through Transactions). In the future, only 85% of these Schedule 1 charges will be allocated to those serving load, and the remaining 15% will be allocated to those Market Participants supplying energy.

1.3.10.1.2.6 References

The applicability of Transaction Customer Ancillary Services - OATT Schedule 1 (S, SC, & D) charges is described within Schedule 1 of the OATT (Open Access Transmission Tariff).

1.3.10.1.3 Transaction Customer Ancillary Services - OATT Schedule 2 - Voltage Support Service

1.3.10.1.3.1 Description

The Transaction Customer (TC) Open Access Transmission Tariff (OATT) Schedule 2 - Voltage Support Service (VSS) settlement ($) is a charge to Transaction Customers intended to recover NYISO's costs to procure Voltage Support Services from Power Suppliers.

The NYISO procures Voltage Support Services (VSS) from Power Suppliers in the New York Control Area (NYCA) in order to ensure that appropriate voltage levels are maintained on the NYCA transmission network. Voltage is a critical component of providing quality and reliable electric service (also helps to minimize losses; higher voltage levels on the transmission network allow for longer transmission distances), and therefore is required. Poor voltage levels will lead to poor electric service.

All of NYISO's costs for procuring VSS are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) (exports and wheel-throughs only) through charges under OATT Schedule 2. The estimated annual NYISO VSS costs are determined, then a VSS rate ($/MW) is determined using estimated load. This rate is used over the year to recover the estimated annual NYISO VSS costs.

Market Participants acting as a TC will be charged a portion of the total estimated annual NYISO VSS costs based on their actual real-time export and wheel-through transaction schedules. It is determined at the hourly-level for each TC that scheduled energy transactions (exports & wheel-throughs) in the NYISO energy markets.

1.3.10.1.3.2 Required Data Elements

1.3.10.1.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
605	Hr VSS Rate ($/MW)	Hourly Voltage Support Service Rate ($/MW) is a number representing the voltage support service rate ($/MW) under Schedule 2 of the OATT.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y

1.3.10.1.3.2.2 Intermediates

None

1.3.10.1.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr VSS Stlmnt :TC ($)	Hourly Voltage Support Service Settlement - Transaction Customer ($) is a number representing the Voltage Support Service settlement for the Transaction Customer for the given hour. This is Schedule 2 of the NYISO OATT.	Y

1.3.10.1.3.3 Eligibility

Transaction Customers will receive a charge for OATT Schedule 2 -VSS ($) if all of the following conditions exist:

- The Transaction Customer scheduled real-time export or wheel-through energy within the NYCA (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).

1.3.10.1.3.4 Settlement Algorithm

Hr VSS Stlmnt :TC ($) is calculated as:

Hr VSS Stlmnt :TC ($) =

Hr VSS Rate ($/MW) * {Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)}

1.3.10.1.3.5 Additional Information

None

1.3.10.1.3.6 References

The applicability of Transaction Customer Ancillary Services - OATT Schedule 2 - Voltage Support Service charges is described within Schedule 2 of the OATT (Open Access Transmission Tariff).

1.3.10.1.4 Transaction Customer Ancillary Services - OATT Schedule 5 - Operating Reserve Service

1.3.10.1.4.1 Description

The Transaction Customer (TC) Open Access Transmission Tariff (OATT) Schedule 5 - Operating Reserve Service settlement ($) is a charge to Transaction Customers intended to recover NYISO's costs to procure Operating Reserve Services from Power Suppliers.

The NYISO procures Operating Reserves Services from Power Suppliers in the New York Control Area (NYCA) in order to ensure that enough electric supply is available in real-time to meet demand requirements (if actual demand significantly exceeds forecasted demand, or in cases of the loss of other expected supply resources).

Operating Reserves are part of the electrical capacity reserves procured by NYISO to be confident they will have enough resources to meet most all demand-level contingencies in real-time. There are three primary levels of Operating Reserves:

- 10 Minute Synchronous Reserves
    - Available electric supply capacity capable of providing electricity to the NYCA grid within 10 minutes, and is already synchronized with the NYCA grid (also called spinning reserves)
- 10 Minute Non-Synchronous Reserves
    - Available electric supply capacity capable of providing electricity to the NYCA grid within 10 minutes, and is NOT already synchronized with the NYCA grid (also called non-spinning reserves)
- 30 Minute Operating Reserves
    - Available electric supply capacity capable of providing electricity to the NYCA grid within 30 minutes, and is, or is not, already synchronized with the NYCA grid

All of NYISO's costs for procuring Operating Reserve Services are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) (exports only) through charges under OATT Schedule 5.

Market Participants acting as a TC will be charged an allocation of the total NYISO costs incurred during the hour (actual costs) to procure Operating Reserve Service based on load ratio share (the TC's actual real-time export transaction schedules to the total NYISO LSE actual real-time load consumption plus the total NYISO TC actual real-time export transaction schedules). It is determined at the hourly-level for each TC that scheduled energy transactions (exports) in the NYISO energy markets.

1.3.10.1.4.2 Required Data Elements

1.3.10.1.4.2.1 Determinant

Bill Code	Title	Business Description	DSS Value
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y

	Hr Total NYISO Op Res Cr to PS ($)	Hourly Total NYISO Operating Reserve Service Credits to Power Suppliers ($) is a number representing the total NYISO amount paid to Power Suppliers for providing operating reserves services for the given hour	Y
	Hr Ttl NYISO OpRes ShtChg to PS ($)	Hourly Total NYISO Operating Reserve Shortfall Charges to Power Suppliers ($) is a number representing the total NYISO operating reserves shortfall charges paid by Power Suppliers for the given hour.	Y

1.3.10.1.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT TC Ld Ratio Sh :LSE & Exp	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity & Exports is a number representing the ratio of the given Transaction Customer's load to the sum of the total LSE load and total export transactions for all of NYISO, for the given hour.	Y
	Hr Ttl NYISO Net OpRes Cr to PS ($)	Hourly Total NYISO Net Operating Reserves Credits to Power Suppliers ($) is a number representing the total NYISO net amount credited to Power Suppliers for providing operating reserves services for the given hour (payments - charges).	N

1.3.10.1.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Op Res Stlmnt :TC ($)	Hourly Operating Reserve Settlement - Transaction Customer ($) is a number representing the Operating Reserves settlement for the Transaction Customer for the given hour. This is Schedule 5 of the NYISO OATT.	Y

1.3.10.1.4.3 Eligibility

Transaction Customers will receive a charge for OATT Schedule 3 -Operating Reserves ($) if all of the following conditions exist:

- The Transaction Customer scheduled real-time export energy within the NYCA (Hr RT Export Trans :TC (MW) > 0).

1.3.10.1.4.4 Settlement Algorithm

Hr Op Res Stlmnt :TC ($) is calculated as:

Hr Op Res Stlmnt :TC ($) =

Hr Total NYISO Net OpRes Cr to PS ($) * Hr RT TC Ld Ratio Sh :LSE & Exp

Where:

Hr Total NYISO Net OpRes Cr to PS ($) =

Hr Total NYISO Op Res Cr to PS ($) - Hr Ttl NYISO OpRes ShtChg to PS ($)

Hr RT TC Ld Ratio Sh :LSE & Exp =

Hr RT Export Trans :TC (MWh) ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh)}

1.3.10.1.4.5 Additional Information

None

1.3.10.1.4.6 References

The applicability of Transaction Customer Ancillary Services - OATT Schedule 5 - Operating Reserve Service charges is described within Schedule 5 of the OATT (Open Access Transmission Tariff).

1.3.10.2 Residuals

1.3.10.2.1 Transaction Customer DAM Energy Residual

1.3.10.2.1.1 Description

The Transaction Customer (TC) Day Ahead Market (DAM) Energy Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's DAM Energy settlements to the Market Participants transacting energy via exports and/or wheel-throughs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The TC DAM Energy Residual settlement is based upon the NYISO Total DAM Energy Residual ($) times the TC's load ratio share (Total Export & Wheel-through Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each TC that purchased energy in the NYISO energy markets.

1.3.10.2.1.2 Required Data Elements

1.3.10.2.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO DAM Engy Cr to PS ($)	Hourly Total NYISO Day Ahead Market Energy Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for DAM energy for the given hour.	Y
	Hr Ttl NYISO DAM Engy Ch to LSE ($)	Hourly Total NYISO Day Ahead Market Energy Charge to Load Serving Entity ($) is a number representing the total NYISO amount charged to LSEs for DAM energy (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO DAMLBMP EngyCh :TC ($)	Hourly Total NYISO Day Ahead Market LBMP Energy Charge to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for DAM LBMP energy for the given hour.	Y

1.3.10.2.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO DAM Resid Energy ($)	Hourly Total NYISO Day Ahead Market Residual Energy ($) is a number representing the total NYISO net DAM Residual Energy amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.3.10.2.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM Resid Enrgy Stlmnt :TC ($)	Hourly Day Ahead Market Residual Energy Settlement - Transaction Customer ($) is a number representing the DAM Residual Energy settlement for a TC for the given hour. It is the TC's pro-rated share of DAM Residual Energy charges based upon load ratio share.	Y

1.3.10.2.1.3 Eligibility

Transaction Customers will receive a charge or payment for DAM Energy Residuals ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).
- There is a NYISO DAM Energy Residual ($) for the given hour (Hr Total NYISO DAM Resid Energy ($) <> 0).

1.3.10.2.1.4 Settlement Algorithm

Hr DAM Resid Enrgy Stlmnt :TC ($) is calculated as:

Hr DAM Resid Enrgy Stlmnt :TC ($) =

Hr RT TC Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO DAM Resid Energy ($)

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷

{Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO DAM Resid Energy ($) =

Hr Ttl NYISO DAM Engy Cr to PS ($) - {Hr Ttl NYISO DAM Engy Ch to LSE ($) + Hr Ttl NYISO DAMLBMP EngyCh :TC ($)}

1.3.10.2.1.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from the total quantity.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.3.10.2.1.6 References

1.3.10.2.2 Transaction Customer DAM Loss Residual

1.3.10.2.2.1 Description

The Transaction Customer (TC) Day Ahead Market (DAM) Loss Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's DAM Loss settlements to the Market Participants transacting energy via exports and/or wheel-throughs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The TC DAM Loss Residual settlement is based upon the NYISO Total DAM Loss Residual ($) times the TC's load ratio share (Total Export & Wheel-through Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each TC that purchased energy in the NYISO energy markets.

1.3.10.2.2.2 Required Data Elements

1.3.10.2.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO DAM Loss Cr to PS ($)	Hourly Total NYISO Day Ahead Market Loss Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for DAM Losses for the given hour.	Y
	Hr Ttl NYISO DAM Loss Ch to LSE ($)	Hourly Total NYISO Day Ahead Market LBMP Loss Charges to Load Serving Entity ($) is a number representing the total NYISO amount charged to LSEs for DAM Losses (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO DAMLBMP LssCh :TC ($)	Hourly Total NYISO Day Ahead Market LBMP Loss Charge to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for DAM LBMP Losses for the given hour.	Y

	Hr Ttl NYISO DAMTUC Lss Ch :TC ($)	Hourly Total NYISO Day Ahead Market Transmission Usage Charges - Loss Charge to Transaction Customers ($) is a number representing the total NYISO amount (net of bilateral imports, exports, wheel-thrus, and internals) charged to Transaction Customers for DAM LBMP Losses for the given hour.	Y

1.3.10.2.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO DAM Resid Loss ($)	Hourly Total NYISO Day Ahead Market Residual Loss ($) is a number representing the total NYISO net DAM Residual Losses amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.3.10.2.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr DAM Resid Loss Stlmnt :TC ($)	Hourly Day Ahead Market Residual Loss Settlement - Transaction Customer ($) is a number representing the DAM Residual Loss settlement for a TC for the given hour. It is the TC's pro-rated share of DAM Residual Loss charges based upon load ratio share.	Y

1.3.10.2.2.3 Eligibility

Transaction Customers will receive a charge or payment for DAM Loss Residuals ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).
- There is a NYISO DAM Loss Residual ($) for the given hour (Hr Total NYISO DAM Resid Loss ($) <> 0).

1.3.10.2.2.4 Settlement Algorithm

Hr DAM Resid Loss Stlmnt :TC ($) is calculated as:

Hr DAM Resid Loss Stlmnt :TC ($) =

Hr RT TC Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO DAM Resid Loss ($)

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷

{Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO DAM Resid Energy ($) =

Hr Ttl NYISO DAM Loss Cr to PS ($) **-** {Hr Ttl NYISO DAM Loss Ch to LSE ($) + Hr Ttl NYISO DAMLBMP LssCh :TC ($) + Hr Ttl NYISO DAMTUC Lss Ch :TC ($)}

1.3.10.2.2.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from the total quantity.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.3.10.2.2.6 References

1.3.10.2.3 Transaction Customer Balancing Market Energy Residual

1.3.10.2.3.1 Description

The Transaction Customer (TC) Balancing Market Energy Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's Balancing Market Energy settlements to the Market Participants transacting energy via exports and/or wheel-throughs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The TC Balancing Market Energy Residual settlement is based upon the NYISO Total Balancing Market Energy Residual ($) times the TC's load ratio share (Total Export & Wheel-through Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each TC that purchased energy in the NYISO energy markets.

1.3.10.2.3.2 Required Data Elements

1.3.10.2.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO Bal Engy Cr to PS ($)	Hourly Total Balancing Market Energy Credits to Power Suppliers ($) is a number representing the total amount credited to Power Suppliers for balancing market energy for the given hour.	Y
	Hr Ttl NYISO Bal Engy Ch to LSE ($)	Hourly Total Balancing Market Energy Charges to Load Serving Entities ($) is a number representing the total amount charged to LSEs for balancing market energy (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO BalLBMP EngyCh :TC ($)	Hourly Total NYISO Balancing Market LBMP Energy Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction	Y

Bill Code	Title	Business Description	DSS Value
		Customers for Balancing Market LBMP energy for the given hour.	

1.3.10.2.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO Bal Resid Energy ($)	Hourly Total NYISO Balancing Market Residual Energy ($) is a number representing the total NYISO net Balancing Market Residual Energy amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.3.10.2.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Bal Resid Enrgy Stlmnt :TC ($)	Hourly Balancing Market Residual Energy Settlement - Transaction Customer ($) is a number representing the Balancing Market Residual Energy settlement for a TC for the given hour. It is the TC's pro-rated share of Balancing Market Residual Energy charges based upon load ratio share.	Y

1.3.10.2.3.3 Eligibility

Transaction Customers will receive a charge or payment for Balancing Market Energy Residuals ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).
- There is a NYISO Balancing Market Energy Residual ($) for the given hour (Hr Total NYISO Bal Resid Energy ($) <> 0).

1.3.10.2.3.4 Settlement Algorithm

Hr Bal Resid Enrgy Stlmnt :TC ($) is calculated as:

Hr Bal Resid Enrgy Stlmnt :TC ($) =

Hr RT TC Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO Bal Resid Energy ($)

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)}
÷

{Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Energy ($) =

Hr Ttl NYISO Bal Engy Cr to PS ($) - {Hr Ttl NYISO Bal Engy Ch to LSE ($) + Hr Ttl NYISO BalLBMP EngyCh :TC ($)}

1.3.10.2.3.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from the total quantity.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.3.10.2.3.6 References

1.3.10.2.4 Transaction Customer Balancing Market Loss Residual

1.3.10.2.4.1 Description

The Transaction Customer (TC) Balancing Market Loss Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's Balancing Market Loss settlements to the Market Participants transacting energy via exports and/or wheel-throughs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The TC Balancing Market Loss Residual settlement is based upon the NYISO Total Balancing Market Loss Residual ($) times the TC's load ratio share (Total Export & Wheel-through Load

(MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each TC that purchased energy in the NYISO energy markets.

1.3.10.2.4.2 Required Data Elements

1.3.10.2.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO Bal Loss Cr to PS ($)	Hourly Total NYISO Balancing Market Loss Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for Balancing Market Losses for the given hour.	Y
	Hr Ttl NYISO Bal Loss Ch to LSE ($)	Hourly Total NYISO Balancing Market Loss Charges to Load Serving Entity ($) is a number representing the total NYISO amount charged to LSEs for Balancing Market Losses (includes virtual supply and virtual load) for the given hour.	Y

	Hr Ttl NYISO BalLBMP LssCh :TC ($)	Hourly Total NYISO Balancing Market LBMP Loss Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for Balancing Market LBMP Losses for the given hour.	Y
	Hr Ttl NYISO BalTUC LssChg :TC ($)	Hourly Total NYISO Balancing Market Transmission Usage Charges - Loss Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of bilateral imports, exports, wheel-thrus, and internals) charged to Transaction Customers for Balancing Market TUC Losses for the given hour.	Y

1.3.10.2.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO Bal Resid Loss ($)	Hourly Total NYISO Balancing Market Residual Loss ($) is a number representing the total NYISO net Balancing Market Residual Losses amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.3.10.2.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Bal Resid Loss Stlmnt :TC ($)	Hourly Balancing Market Residual Loss Settlement - Transaction Customer ($) is a number representing the Balancing Residual Loss settlement for a TC for the given hour. It is the TC's pro-rated share of Balancing Market Residual Loss charges based upon load ratio share.	Y

1.3.10.2.4.3 Eligibility

Transaction Customers will receive a charge or payment for Balancing Market Loss Residuals ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).
- There is a NYISO Balancing Market Loss Residual ($) for the given hour (Hr Total NYISO Bal Resid Loss ($) <> 0).

1.3.10.2.4.4 Settlement Algorithm

Hr Bal Resid Loss Stlmnt :TC ($) is calculated as:

Hr Bal Resid Loss Stlmnt :TC ($) =

Hr RT TC Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO Bal Resid Loss ($)

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷

{Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Loss ($) =

Hr Ttl NYISO Bal Loss Cr to PS ($) **-** {Hr Ttl NYISO Bal Loss Ch to LSE ($) + Hr Ttl NYISO BalLBMP LssCh :TC ($) + Hr Ttl NYISO BalTUC LssChg :TC ($)}

1.3.10.2.4.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from the total quantity.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.3.10.2.4.6 References

1.3.10.2.5 Transaction Customer Balancing Market Congestion Residual

1.3.10.2.5.1 Description

The Transaction Customer (TC) Balancing Market Congestion Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's Balancing Market Congestion settlements to the Market Participants transacting energy via exports and/or wheel-throughs.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers. Residuals are typically allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Residuals identified from the DAM Energy, DAM Loss, Balancing Market Energy, Balancing Market Loss, or Balancing Market Congestion settlements are typically addressed under customer settlement allocations. Other identified residual amounts are addressed differently (notably DAM Congestion).

The TC Balancing Market Congestion Residual settlement is based upon the NYISO Total Balancing Market Congestion Residual ($) times the TC's load ratio share (Total Export & Wheel-through Load (MWh) ÷ NYISO Total LSE Load (MWh), Exports (MWh), and Wheel-throughs (MWh)). It is determined at the hourly-level for each TC that purchased energy in the NYISO energy markets.

1.3.10.2.5.2 Required Data Elements

1.3.10.2.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y
	Hr Ttl NYISO Bal Cong Cr to PS ($)	Hourly Total NYISO Balancing Market Congestion Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for Balancing Market Congestion for the given hour.	Y

	Hr Ttl NYISO Bal Cong Ch to LSE ($)	Hourly Total NYISO Balancing Market Congestion Charges to Load Serving Entities ($) is a number representing the total NYISO amount charged to LSEs for Balancing Market Congestion (includes virtual supply and virtual load) for the given hour.	Y
	Hr Ttl NYISO BalLBMP CngCh :TC ($)	Hourly Total NYISO Balancing Market LBMP Congestion Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of imports and exports) charged to Transaction Customers for Balancing Market LBMP Congestion for the given hour.	Y
	Hr Ttl NYISO BalTUC CngCh to TC ($)	Hourly Total NYISO Balancing Market Transmission Usage Charges - Congestion Charges to Transaction Customers ($) is a number representing the total NYISO amount (net of bilateral imports, exports, wheel-thrus, and internals) charged to Transaction Customers for Balancing Market TUC Congestion for the given hour.	Y

1.3.10.2.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y
	Hr Total NYISO Bal Resid Cong ($)	Hourly Total NYISO Balancing Market Residual Congestion ($) is a number representing the total NYISO net Balancing Market Residual Congestion amount for the hour. This amount is allocated to LSEs based upon load ratio share.	N

1.3.10.2.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Bal Resid Cong Stlmnt :TC ($)	Hourly Balancing Market Residual Congestion Settlement - Transaction Customer ($) is a number representing the Balancing Market Residual Congestion settlement for a TC for the given hour. It is the TC's pro-rated share of Balancing Market Residual Cong charges based upon load ratio share.	Y

1.3.10.2.5.3 Eligibility

Transaction Customers will receive a charge or payment for Balancing Market Congestion Residuals ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).
- There is a NYISO Balancing Market Congestion Residual ($) for the given hour (Hr Total NYISO Bal Resid Cong ($) <> 0).

1.3.10.2.5.4 Settlement Algorithm

Hr Bal Resid Cong Stlmnt :TC ($) is calculated as:

Hr Bal Resid Cong Stlmnt :TC ($) =

Hr RT TC Ld Ratio Sh :LSE, Exp, WT * Hr Total NYISO Bal Resid Cong ($)

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷

{Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Bal Resid Cong ($) =

Hr Ttl NYISO Bal Cong Cr to PS ($) - {Hr Ttl NYISO Bal Cong Ch to LSE ($) + Hr Ttl NYISO BalLBMP CngCh :TC ($) + Hr Ttl NYISO BalTUC CngCh to TC ($)}

1.3.10.2.5.5 Additional Information

Gilboa Pumping/Load Bus:

In the determination of Total NYISO Real-Time Load Serving Entity Load (Hr Total NYISO RT LSE Load (MWh)) for this residual calculation, the following Gilboa Pumping/Load bus is excluded from the total quantity.

- NYPA-GI_NM_CAPITAL (Load Bus PTID = 306259)

1.3.10.2.5.6 References

1.3.10.3 Uplift Allocations

1.3.10.3.1 Transaction Customer - Power Supplier DAM BPCG Allocation

1.3.10.3.1.1 Description

The Transaction Customer (TC) Power Supplier Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to TCs intended to recover NYISO's costs of the DAM BPCG payment to Power Suppliers. This charge covers only the payments made by

NYISO to Power Suppliers for generators scheduled off their DAM economic schedules by NYISO (not by Transmission Owners for local reliability reasons), and not to meet additional forecasted load requirements.

NYISO offers a DAM BPCG uplift payment to Power Suppliers selling energy into the NYISO DAM when their DAM energy schedule is flagged as Out of Merit for NYISO reliability reasons. This uplift payment is designed to ensure that generators recover at least their bid production costs, net of costs to serve Transaction Contracts, defined by their DAM Generation Bid (minimum generation, start-up, and incremental costs from energy curve/blocks), when they are dispatched off of their economic schedule by NYISO for reliability reasons.

All payments made to Power Suppliers through the DAM BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a TC will be charged a portion of the total NYISO DAM BPCG costs based on the TC's load ratio share (Total Export/Wheel-Through Scheduled Transactions (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each TC that scheduled transaction (export and/or wheel-through) energy in the NYISO markets.

NOTES:

- For Grouped Generators, the entire Grouped Generator set of generators is considered Out of Merit due to LRR if any one generator in the Group is placed Out of Merit for LRR by a Transmission Owner (see Additional Information section below for more information).
- Any payments to Power Suppliers due to under-forecasting that are not allocated to LSEs through the DAM BPCG Under-Forecasting allocation are included in this allocation (DAM BPCG).

1.3.10.3.1.2 Required Data Elements

1.3.10.3.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO DAM BPCG ($)	Day Total NYISO Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total DAM Bid Production Cost Guarantee payments made to Power Suppliers for the day; does not include uplift payments due to Local Reliability Rules (by Transmission Owners), or due to under-forecasting.	N
	Day Ttl NYISO DAM BPCG Fcst Rdr ($)	Daily Total NYISO Day Ahead Market Bid Production Cost Guarantee - Under-Forecasted Remainder ($) is a number representing the remaining amount of Day Ahead Market Bid Production Cost Guarantee payments to Power Suppliers due to under-forecasting that were not allocated to LSEs in the DAM BPCG - Under-Forecasted settlement allocations.	N

801	Day RT Export Trans :TC (MWh)	Daily Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total amount of real time point-to-point and LBMP export transactions for the given transaction customer, for the given day.	Y
802	Day RT Wheel-Thru Trans :TC (MWh)	Daily Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the amount of energy the given transaction customer wheeled-through NYISO during the day.	Y
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.3.10.3.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT TC Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.3.10.3.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day DAM BPCG Stlmnt :TC ($)	Daily Day Ahead Market Bid Production Cost Guarantee Settlement - Transaction Customer ($) is a number representing the Day Ahead Market Bid Production Cost Guarantee settlement for the day; allocation of payments made to power suppliers (internal generators) selling power into the NYISO DAM.	Y

1.3.10.3.1.3 Eligibility

Transaction Customers will receive a charge for DAM BPCG ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Day RT Export Trans :TC (MWh) > 0 or Day RT Wheel-Thru Trans :TC (MWh) > 0).
- There were DAM BPCG payments made to Power Suppliers due to NYISO Out of Merit DAM scheduling, or un-allocated DAM BPCG Under-Forecasting payments, during the day (Day Total NYISO DAM BPCG ($) <> 0 or Day Ttl NYISO DAM BPCG Fcst Rdr ($) > 0).

1.3.10.3.1.4 Settlement Algorithm

Day DAM BPCG Stlmnt :TC ($) is calculated as:

Day DAM BPCG Stlmnt :TC ($) =

{Day Total NYISO DAM BPCG ($) + Day Ttl NYISO DAM BPCG Fcst Rdr ($)} * Day RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT TC Ld Ratio Sh :LSE, Exp, WT =

{Day RT Export Trans :TC (MWh) + Day RT Wheel-Thru Trans :TC (MWh)} ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.3.10.3.1.5 Additional Information

Grouped Generators that are Out of Merit for LRR:

The Total NYISO DAM BPCG payments to Power Suppliers does not include any uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit during the period under Local Reliability Rules (LRR) (placed Out of Merit by a Transmission Owner). The entire Grouped Generator set of generators is considered Out of Merit due to LRR.

1.3.10.3.1.6 References

1.3.10.3.2 Transaction Customer - Power Supplier RT BPCG Allocation

1.3.10.3.2.1 Description

The Transaction Customer (TC) Power Supplier Real-Time (RT) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to TCs intended to recover NYISO's costs of the RT BPCG payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled off their economic basepoints in RT by NYISO (not by Transmission Owners for local reliability reasons), and not to meet additional forecasted load requirements.

NYISO offers a RT BPCG uplift payment to Power Suppliers selling energy into the NYISO RT market when their RT energy basepoint is flagged as Out of Merit for NYISO reliability reasons. This uplift payment is designed to ensure that generators recover at least their bid production costs, net of costs to serve Transaction Contracts or DAM Energy, defined by their HAM Generation Bid (minimum generation, start-up, and incremental costs from energy curve/blocks), when they are dispatched off of their economic basepoint by NYISO for reliability reasons.

All payments made to Power Suppliers through the RT BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a TC will be charged a portion of the total NYISO RT BPCG costs based on the TC's load ratio share (Total Export/Wheel-Through Scheduled Transactions (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each TC that scheduled transaction (export and/or wheel-through) energy in the NYISO markets.

NOTES:

- For Grouped Generators, the entire Grouped Generator set of generators is considered Out of Merit due to LRR if any one generator in the Group is placed Out of Merit for LRR by a Transmission Owner (see Additional Information section below for more information).

1.3.10.3.2.2 Required Data Elements

1.3.10.3.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO RT BPCG ($)	Day Total NYISO Real-Time (RT) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total RT Bid Production Cost Guarantee payments made to Power Suppliers for the day; does not include uplift payments due to Local Reliability Rules (by Transmission Owners), or due to under-forecasting.	N
801	Day RT Export Trans :TC (MWh)	Daily Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total amount of real time point-to-point and LBMP export transactions for the given transaction customer, for the given day.	Y
802	Day RT Wheel-Thru Trans :TC (MWh)	Daily Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the amount of energy the given transaction customer wheeled-through NYISO during the day.	Y
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N

	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.3.10.3.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT TC Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.3.10.3.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day RT BPCG Stlmnt :TC ($)	Daily Real Time Bid Production Cost Guarantee Settlement - Transaction Customer ($) is a number representing the Real Time Bid Production Cost Guarantee settlement for the day; allocation of payments made to power suppliers (internal generators) selling power into the NYISO RT market.	Y

1.3.10.3.2.3 Eligibility

Transaction Customers will receive a charge for RT BPCG ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Day RT Export Trans :TC (MWh) > 0 or Day RT Wheel-Thru Trans :TC (MWh) > 0).
- There were RT BPCG payments made to Power Suppliers due to NYISO Out of Merit real-time dispatches during the day (Day Total NYISO RT BPCG ($) > 0).

1.3.10.3.2.4 Settlement Algorithm

Day RT BPCG Stlmnt :TC ($) is calculated as:

Day RT BPCG Stlmnt :TC ($) =

Day Total NYISO RT BPCG ($) * Day RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT TC Ld Ratio Sh :LSE, Exp, WT =

{Day RT Export Trans :TC (MWh) + Day RT Wheel-Thru Trans :TC (MWh)} ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.3.10.3.2.5 Additional Information

Grouped Generators that are Out of Merit for LRR:

The Total NYISO RT BPCG payments to Power Suppliers does not include any uplift payments to generators that are part of a Group Generator scenario when any generator in the Group is Out of Merit during the period under Local Reliability Rules (LRR) (placed Out of Merit by a Transmission Owner). The entire Grouped Generator set of generators is considered Out of Merit due to LRR.

1.3.10.3.2.6 References

1.3.10.3.3 Transaction Customer - Power Supplier DAM Margin Assurance Allocation

1.3.10.3.3.1 Description

The Transaction Customer (TC) Power Supplier Day Ahead Market (DAM) Margin Assurance Allocation settlement ($) is a charge to TCs intended to recover NYISO's costs of the DAM Margin Assurance payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators scheduled below their DAM Schedules by NYISO (not by Transmission Owners for local reliability reasons).

NYISO offers a DAM Margin Assurance uplift payment to Power Suppliers that are required to purchase energy in the NYISO Balancing Energy Market as a result of being dispatched below their DAM schedule by NYISO for reliability reasons. Therefore, the DAM Margin Assurance settlement for Power Suppliers guarantees a generator's DAM margin (profit) is not reduced by balancing market energy settlements in Real-Time due to NYISO scheduling.

The DAM Margin Assurance payments made to Power Suppliers are totaled and allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given hour.

Market Participants acting as a TC will be charged a portion of the total NYISO DAM Margin Assurance costs based on the TC's load ratio share (Total Export/Wheel-Through Scheduled Transactions (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the hourly-level for each TC that scheduled transaction (export and/or wheel-through) energy in the NYISO markets.

1.3.10.3.3.2 Required Data Elements

1.3.10.3.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO DAM Mrgn Assrnc ($)	Hourly Total NYISO Day Ahead Market Margin Assurance ($) is a number representing the total amount credited to Power Suppliers for Margin Assurance Credits for the hour.	Y
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.3.10.3.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.3.10.3.3.2.3 Results

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr DAM Mrgn Assrnc Stlmnt :TC ($)	Hourly Day Ahead Market Margin Assurance Settlement - Transcation Customer ($) is a number representing the DAM Margin Assurance settlement for a TC for the given hour. It is the TC's pro-rated share of DAM Margin Assurance charges based upon load ratio share.	Y

1.3.10.3.3.3 Eligibility

Transaction Customers will receive a charge for DAM Margin Assurance ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Hr RT Export Trans :TC (MWh) > 0 or Hr RT Wheel-Thru Trans :TC (MWh) > 0).
- There were DAM Margin Assurance payments made to Power Suppliers during the hour (Hr Total NYISO DAM Mrgn Assrnc ($) > 0).

1.3.10.3.3.4 Settlement Algorithm

Hr DAM Mrgn Assrnc Stlmnt :TC ($) is calculated as:

Hr DAM Mrgn Assrnc Stlmnt :TC ($) =

Hr Total NYISO DAM Mrgn Assrnc ($) * Hr RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

1.3.10.3.3.5 Additional Information

None

1.3.10.3.3.6 References

1.3.10.3.4 Transaction Customer - Power Supplier ELR DAM Margin Assurance Allocation

1.3.10.3.4.1 Description

The Transaction Customer (TC) Power Supplier Energy Limited Resource (ELR) Day Ahead Market (DAM) Margin Assurance Allocation settlement ($) is a charge to TCs intended to recover NYISO's costs of the ELR DAM Margin Assurance payment to Power Suppliers. This charge covers only the payments made by NYISO to Power Suppliers for generators, classified as ELR generators, scheduled below their DAM Schedules by NYISO (not by Transmission Owners for local reliability reasons).

NYISO offers an ELR DAM Margin Assurance uplift payment to Power Suppliers, with generators classified as ELR generators that are required to purchase energy in the NYISO Balancing Energy Market as a result of being dispatched below their DAM schedule by NYISO for reliability reasons. Therefore, the ELR DAM Margin Assurance settlement for Power Suppliers guarantees an ELR generator's DAM margin (profit) is not reduced by balancing market energy settlements in Real-Time due to NYISO scheduling.

The ELR DAM Margin Assurance payments made to Power Suppliers are totaled and allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a TC will be charged a portion of the total NYISO ELR DAM Margin Assurance costs based on the TC's load ratio share (Total Export/Wheel-Through Scheduled Transactions (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each TC that scheduled transaction (export and/or wheel-through) energy in the NYISO markets.

1.3.10.3.4.2 Required Data Elements

1.3.10.3.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO ELR DAM Mrgn Assrnc ($)	Daily Total NYISO Energy Limited Resource (ELR) Day Ahead Market Margin Assurance ($) is a number representing the total amount credited to Power Suppliers, with generators classified as ELRs, for ELR DAM Margin Assurance Credits for the day.	N
801	Day RT Export Trans :TC (MWh)	Daily Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total amount of real time point-to-point and LBMP export transactions for the given transaction customer, for the given day.	Y
802	Day RT Wheel-Thru Trans :TC (MWh)	Daily Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the amount of energy the given transaction customer wheeled-through NYISO during the day.	Y
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MWh)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N

	Day Total NYISO RT WT Trans (MWh)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.3.10.3.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT TC Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.3.10.3.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day ELR DAM MargAsrc Stlmnt :TC ($)	Daily Energy Limited Resource Day Ahead Market Margin Assurance Settlement - Transaction Customer ($) is a number representing the settlement for Energy Limited Resource Day Ahead Market Margin Assurance for the given TC for the given day; allocation of payments+W1085 to ELRs to guarantee their DAM margins when a unit is committed below their economic basepoints by NYISO for reliability reasons.	Y

1.3.10.3.4.3 Eligibility

Transaction Customers will receive a charge for ELR DAM Margin Assurance ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Day RT Export Trans :TC (MWh) > 0 or Day RT Wheel-Thru Trans :TC (MWh) > 0).
- There were ELR DAM Margin Assurance payments made to Power Suppliers during the day (Day Total NYISO ELR DAM Mrgn Assrnc ($) > 0).

1.3.10.3.4.4 Settlement Algorithm

Day ELR DAM MargAsrc Stlmnt :TC ($) is calculated as:

Day ELR DAM MargAsrc Stlmnt :TC ($) =

Day Total NYISO ELR DAM Mrgn Assrnc ($) * Day RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT TC Ld Ratio Sh :LSE, Exp, WT =

{Day RT Export Trans :TC (MWh) + Day RT Wheel-Thru Trans :TC (MWh)} ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MWh) + Day Total NYISO RT WT Trans (MWh)}

1.3.10.3.4.5 Additional Information

None

1.3.10.3.4.6 References

1.3.10.3.5 Transaction Customer - Transaction DAM BPCG Allocation

1.3.10.3.5.1 Description

The Transaction Customer (TC) Transaction Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to TCs intended to recover NYISO's costs of the Transaction DAM BPCG payment to Transaction Customers (NYCA-external generators).

NYISO offers a DAM BPCG uplift payment to Transaction Customers (external generators) selling energy into the NYISO DAM via Market Energy Import Transactions when their DAM schedule is below their DAM Transaction Bid (MW) due to constraints at the external control area transmission ties. This uplift payment is designed to ensure that external generators recover at least their bid production costs defined by their DAM Transaction Bid (decremental bid price), when they are scheduled below their DAM Bid (MW).

All payments made to Transaction Customers through the Transaction DAM BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a TC will be charged a portion of the total NYISO Transaction DAM BPCG costs based on the TC's load ratio share (Total Export/Wheel-Through Scheduled Transactions (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each TC that scheduled transaction (export and/or wheel-through) energy in the NYISO markets.

1.3.10.3.5.2 Required Data Elements

1.3.10.3.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value

	Day Total NYISO Trans DAM BPCG ($)	Day Total NYISO Transaction Day Ahead Market (DAM) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total Transaction DAM Bid Production Cost Guarantee payments made to Transaction Customers for the day, for external generators selling energy into the NYISO DAM via Market Energy Import Transactions.	N
801	Day RT Export Trans :TC (MWh)	Daily Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total amount of real time point-to-point and LBMP export transactions for the given transaction customer, for the given day.	Y
802	Day RT Wheel-Thru Trans :TC (MWh)	Daily Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the amount of energy the given transaction customer wheeled-through NYISO during the day.	Y
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.3.10.3.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT TC Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.3.10.3.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day DAM Trans BPCG Stlmnt :TC ($)	Daily Day Ahead Market Transaction Bid Production Cost Guarantee Settlement - Transaction Customer ($) is a number representing	Y

Bill Code	Title	Business Description	DSS Value
		the given TC's Day Ahead Market Transaction Bid Production Cost Guarantee settlement for the day; allocation of payments made to transaction customers (external generators) selling power into the NYISO DAM.	

1.3.10.3.5.3 Eligibility

Transaction Customers will receive a charge for Transaction DAM BPCG ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Day RT Export Trans :TC (MWh) > 0 or Day RT Wheel-Thru Trans :TC (MWh) > 0).
- There were Transaction DAM BPCG payments made to Transaction Customers during the day (Day Total NYISO Trans DAM BPCG ($) > 0).

1.3.10.3.5.4 Settlement Algorithm

Day DAM Trans BPCG Stlmnt :TC ($) is calculated as:

Day DAM Trans BPCG Stlmnt :TC ($) =

Day Total NYISO Trans DAM BPCG ($) * Day RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT TC Ld Ratio Sh :LSE, Exp, WT =

{Day RT Export Trans :TC (MWh) + Day RT Wheel-Thru Trans :TC (MWh)} ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.3.10.3.5.5 Additional Information

None

1.3.10.3.5.6 References

1.3.10.3.6 Transaction Customer - Transaction RT BPCG Allocation

1.3.10.3.6.1 Description

The Transaction Customer (TC) Transaction Real-Time (RT) Bid Production Cost Guarantee (BPCG) Allocation settlement ($) is a charge to TCs intended to recover NYISO's costs of the Transaction RT BPCG payment to Transaction Customers (NYCA-external generators).

NYISO offers a RT BPCG uplift payment to Transaction Customers (external generators) selling energy into the NYISO RT market via Market Energy Import Transactions when their RT schedule is below their HAM Transaction Bid (MW) due to constraints at the external control area transmission ties. This uplift payment is designed to ensure that external generators recover at least their bid production costs, net of DAM Transaction scheduled energy, defined by their HAM Transaction Bid (decremental bid price), when they are scheduled below their HAM Bid (MW).

All payments made to Transaction Customers through the Transaction RT BPCG settlement are totaled, and the costs of these payments are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given day.

Market Participants acting as a TC will be charged a portion of the total NYISO Transaction RT BPCG costs based on the TC's load ratio share (Total Export/Wheel-Through Scheduled Transactions (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the daily-level for each TC that scheduled transaction (export and/or wheel-through) energy in the NYISO markets.

1.3.10.3.6.2 Required Data Elements

1.3.10.3.6.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO Trans RT BPCG ($)	Day Total NYISO Transaction Real-Time (RT) Bid Production Cost Guarantee (BPCG) ($) is a number representing the total Transaction RT Bid Production Cost Guarantee payments made to Transaction Customers for the day, for external generators selling energy into the NYISO RT market via Market Energy Import Transactions.	N
801	Day RT Export Trans :TC (MWh)	Daily Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total amount of real time point-to-point and LBMP export transactions for the given transaction customer, for the given day.	Y
802	Day RT Wheel-Thru Trans :TC (MWh)	Daily Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the amount of energy the given transaction customer wheeled-through NYISO during the day.	Y
	Day Total NYISO RT LSE Load (MWh)	Daily Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load for all LSEs across the NYISO for the given day.	N
	Day Total NYISO RT Export Trans (MW)	Daily Total NYISO Real-Time Export Transactions (MW) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given day.	N
	Day Total NYISO RT WT Trans (MW)	Daily Total NYISO Real-Time wheel-thru Transactions (MW) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given day.	N

1.3.10.3.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day RT TC Ld Ratio Sh :LSE, Exp, WT	Daily Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given day.	N

1.3.10.3.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Day RT Trans BPCG Stlmnt :TC ($)	Daily Real Time Transaction Bid Production Cost Guarantee Settlement - Transaction Customer ($) is a number representing the given TC's Real Time Transaction Bid Production Cost Guarantee settlement for the day; allocation of payments made to transaction customers (external generators) selling power into the NYISO RT market.	Y

1.3.10.3.6.3 Eligibility

Transaction Customers will receive a charge for Transaction RT BPCG ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Day RT Export Trans :TC (MWh) > 0 or Day RT Wheel-Thru Trans :TC (MWh) > 0).
- There were Transaction RT BPCG payments made to Transaction Customers during the day (Day Total NYISO Trans RT BPCG ($) > 0).

1.3.10.3.6.4 Settlement Algorithm

Day RT Trans BPCG Stlmnt :TC ($) is calculated as:

Day RT Trans BPCG Stlmnt :TC ($) =

Day Total NYISO Trans RT BPCG ($) * Day RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Day RT TC Ld Ratio Sh :LSE, Exp, WT =

{Day RT Export Trans :TC (MWh) + Day RT Wheel-Thru Trans :TC (MWh)} ÷ {Day Total NYISO RT LSE Load (MWh) + Day Total NYISO RT Export Trans (MW) + Day Total NYISO RT WT Trans (MW)}

1.3.10.3.6.5 Additional Information

None

1.3.10.3.6.6 References

1.3.10.3.7 Transaction Customer - Transaction Import ECA Supplier Guarantee Allocation

1.3.10.3.7.1 Description

The Transaction Customer (TC) Transaction Import Extraordinary Corrective Action (ECA) Supplier Guarantee Allocation settlement ($) is a charge to TCs intended to recover NYISO's costs of the Import ECA Supplier Guarantee payment to Transaction Customers.

NYISO offers an Import Extraordinary Corrective Action (ECA) Supplier Guarantee uplift payment to Transaction Customers importing energy from external control areas into the New Your Control Area (NYCA) when their real-time transaction schedule is curtailed by NYISO (not for Market Participant reasons). This uplift payment is designed to ensure the Transaction Customers importing power into the NYCA are not financially harmed by NYISO transaction curtailments, when necessary.

The Transaction Contracts are either Market Energy Import Transactions (sales to the NYISO markets) or Bilateral Import Transactions (direct sales to load buses within the NYCA). Uplift payments made to Transaction Customers are totaled and allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given hour.

Market Participants acting as a TC will be charged a portion of the total NYISO Import ECA Supplier Guarantee costs based on the TC's load ratio share (Total Export/Wheel-Through Scheduled Transactions (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the hourly-level for each TC that scheduled transaction (export and/or wheel-through) energy in the NYISO markets.

1.3.10.3.7.2 Required Data Elements

1.3.10.3.7.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr Ttl NYISO ImECASupGnt :LBMP ($)	Hourly Total NYISO Import Extraordinary Corrective Action Supplier Guarantee - LBMP ($) is a number representing the total NYISO amount credited to LBMP import transaction customers for real time Import ECA Supplier Guarantee payments for the given hour.	Y
	Hr Ttl NYISO ImECASupGnt :PTP ($)	Hourly Total NYISO Import Extraordinary Corrective Action Supplier Guarantee - Point-to-Point ($) is a number representing the total NYISO amount credited to point-to-point import transaction customers for real time Import ECA Supplier Guarantee payments for the given hour.	Y

	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total amount of real time point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the amount of energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.3.10.3.7.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO Imp ECA Sup Gnt ($)	Hourly Total NYISO Import Extraordinary Corrective Action Supplier Guarantee ($) is a number representing the total amount credited to point-to-point and LBMP import transaction customers for real time Import ECA Supplier Guarantee payments for the given hour.	N
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.3.10.3.7.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Imp ECA Sup Gnt Stlmnt :TC ($)	Hourly Import Extraordinary Corrective Action Supplier Guarantee Settlement - Transaction Customer ($) is a number representing the Import ECA Supplier Guarantee settlement for a TC for	Y

Bill Code	Title	Business Description	DSS Value
		the given hour. It is the TC's pro-rated share of Import ECA Supplier Guarantee charges based upon load ratio share.	

1.3.10.3.7.3 Eligibility

Transaction Customers will receive a charge for Transaction Import ECA Supplier Guarantee ($) if all of the following conditions exist:

- The Transaction Customer transacted energy via exports and/or wheel-throughs (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).
- There were Import ECA Supplier Guarantee payments made to Transaction Customers during the hour (Hr Total NYISO Imp ECA Sup Gnt ($) > 0).

1.3.10.3.7.4 Settlement Algorithm

Hr Imp ECA Sup Gnt Stlmnt :TC ($) is calculated as:

Hr Imp ECA Sup Gnt Stlmnt :TC ($) =

Hr Total NYISO Imp ECA Sup Gnt ($) * Hr RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Hr Total NYISO Imp ECA Sup Gnt ($) =

Hr Ttl NYISO ImECASupGnt :LBMP ($) + Hr Ttl NYISO ImECASupGnt :PTP ($)

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

1.3.10.3.7.5 Additional Information

None

1.3.10.3.7.6 References

1.3.10.4 Other Settlement Allocations

1.3.10.4.1 Transaction Customer - Emergency Purchases

1.3.10.4.1.1 Description

The Transaction Customer (TC) Emergency Purchases settlement ($) is a charge to TCs intended to recover NYISO's costs to procure emergency energy (MWh) from external control areas.

In cases where NYISO demand (load) exceeds available supply resources, the NYISO will purchase emergency supply from external control area resources on behalf of the NYCA under existing emergency energy contracts. In general, the NYISO will attempt to obtain enough supply to meet its demand through its common markets/channels. If demand still exceeds supply, emergency purchases will be made. These emergency purchases can be made from NYISO's 4 external control areas: Hydro Quebec, ISO-New England, PJM, and Ontario Hydro.

The costs of the emergency energy purchases typically are recovered through allocations to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Market Participants acting as a TC will be charged a portion of the total NYISO Emergency Purchases costs based on the TC's load ratio share (Total Export & Wheel-Through Transaction Schedules (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled Transactions (MWh)). It is determined at the hourly-level for each TC that purchased energy in the NYISO energy markets.

1.3.10.4.1.2 Required Data Elements

1.3.10.4.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr NYISO Emergency Purch :ISO-NE ($)	Hourly Emergency Purchases - ISO-New England ($) is a number representing the cost of Emergency Energy Purchases made from ISO New England, for the given hour.	N
	Hr NYISO Emergency Purch :PJM ($)	Hourly Emergency Purchases - PJM ($) is a number representing the cost of Emergency Energy Purchases made from PJM for the given hour.	N
	Hr NYISO Emergency Purch :OH ($)	Hourly Emergency Purchases - Ontario Hydro Quebec ($) is a number representing the cost of Emergency Energy Purchases made from Ontario Hydro for the given hour.	N
	Hr NYISO Emergency Purch :HQ ($)	Hourly Emergency Purchases - Hydro Quebec ($) is a number representing the cost of Emergency Energy Purchases made from Hydro Quebec for the given hour.	N
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y

	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.3.10.4.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO Emergency Purch ($)	Hourly Emergency Purchases ($) is a number representing the cost of Emergency Energy Purchases made from PJM, Ontario Hydro, ISO New England, and Hydro Quebec for the given hour.	Y
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.3.10.4.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Emergency Purch Stlmnt :TC ($)	Hourly Emergency Purchases Settlement - Transaction Customer ($) is a number representing the Emergency Purchases settlement for a TC for the given hour. It is the TC's pro-rated share of Emergency Purchases charges based upon load ratio share.	Y

1.3.10.4.1.3 Eligibility

Transaction Customers will receive a charge for Emergency Purchases ($) if all of the following conditions exist:

- The Transaction Customer scheduled energy transactions in the NYISO energy markets (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).

- There was an Emergency Purchase(s) made from one of the external control areas (PJM, Ontario Hydro, ISO-NE, Hydro Quebec) during the hour (Hr Total NYISO Emergency Purch ($) > 0).

1.3.10.4.1.4 Settlement Algorithm

Hr Emergency Purch Stlmnt :TC ($) is calculated as:

Hr Emergency Purch Stlmnt :TC ($) =

Hr Total NYISO Emergency Purch ($) * Hr RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Emergency Purch ($) =

Hr NYISO Emergency Purch :ISO-NE ($) + Hr NYISO Emergency Purch :PJM ($) + Hr NYISO Emergency Purch :OH ($) + Hr NYISO Emergency Purch :HQ ($)

1.3.10.4.1.5 Additional Information

None

1.3.10.4.1.6 References

1.3.10.4.2 Transaction Customer - Emergency Sales

1.3.10.4.2.1 Description

The Transaction Customer (TC) Emergency Sales settlement ($) is a payment to TCs intended to allocate NYISO's revenue from external control areas when they purchase emergency energy (MWh) from NYISO.

In cases where an external control area's demand (load) exceeds its available supply resources, the external control area will purchase emergency supply from NYISO under existing emergency energy contracts. These emergency sales can be made to NYISO's 4 external control areas: Hydro Quebec, ISO-New England, PJM, and Ontario Hydro.

The revenue from the emergency energy sales typically are allocated to Load Serving Entities (LSE) and Transaction Customers (TC) based on their load ratio shares during the given period.

Market Participants acting as a TC will be paid a portion of the total NYISO Emergency Sales revenue based on the TC's load ratio share (Total Export & Wheel-Through Transaction Schedules (MWh) ÷ NYISO Total LSE Load (MWh) + NYISO Total Export/Wheel-Through Scheduled

Transactions (MWh)). It is determined at the hourly-level for each TC that purchased energy in the NYISO energy markets.

1.3.10.4.2.2 Required Data Elements

1.3.10.4.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr NYISO Emergency Sales :HQ ($)	Hourly NYISO Emergency Sales - Hydro Quebec ($) is a number representing the revenue generated from Emergency Energy Sales made to Hydro Quebec for the given hour.	N
	Hr NYISO Emergency Sales :PJM ($)	Hourly NYISO Emergency Sales - PJM ($) is a number representing the revenue generated from Emergency Energy Sales made to PJM for the given hour.	N
	Hr NYISO Emergency Sales :OH ($)	Hourly NYISO Emergency Sales - Ontario Hydro ($) is a number representing the revenue generated from Emergency Energy Sales made to Ontario Hydro for the given hour.	N
	Hr NYISO Emergency Sales :ISO-NE ($)	Hourly NYISO Emergency Sales - ISO- New England ($) is a number representing the revenue generated from Emergency Energy Sales made to ISO-New England for the given hour.	N
601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y
	Hr Total NYISO RT LSE Load (MWh)	Hourly Total NYISO Real-Time Load Serving Entity Load (MWh) is a number representing the total real time load (plus import and internal bilateral transaction energy) for all LSEs across the NYISO for the given hour.	Y
	Hr Total NYISO RT Export Trans (MWh)	Hourly Total NYISO Real-Time Export Transactions (MWh) is a number representing the total amount of real time export transactions for all NYISO transaction customers for the given hour.	Y
	Hr Total NYISO RT WT Trans (MWh)	Hourly Total NYISO Real-Time wheel-thru Transactions (MWh) is a number representing the total amount of real-time wheel-thru scheduled transactions for all NYISO transaction customers for the given hour.	Y

1.3.10.4.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total NYISO Emergency Sales ($)	Hourly Total NYISO Emergency Sales ($) is a number representing the revenue generated from Emergency Energy Sales made to PJM, Ontario Hydro, ISO New England, and Hydro Quebec for the given hour.	Y
	Hr RT TC Ld Ratio Sh :LSE, Exp, WT	Hourly Real-Time Transaction Customer Load Ratio Share - Load Serving Entity-Exports-Wheel-thrus is a number representing the ratio of the given Transaction Customer's export and wheel-thru transactions to the sum of the total LSE load, total export transactions, and total wheel-thru transactions for all of NYISO, for the given hour.	Y

1.3.10.4.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Hr Emrgency Sales Stlmnt :TC ($)	Hourly Emergency Sales Settlement - Transaction Customer ($) is a number representing the Emergency Sales settlement for a TC for the given hour. It is the TC's pro-rated share of Emergency Sales credits based upon load ratio share.	Y

1.3.10.4.2.3 Eligibility

Transaction Customers will receive a payment for Emergency Sales ($) if all of the following conditions exist:

- The Transaction Customer scheduled energy transactions in the NYISO energy markets (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).
- There was an Emergency Sale(s) made to one of the external control areas (PJM, Ontario Hydro, ISO-NE, Hydro Quebec) during the hour (Hr Total NYISO Emergency Sales ($) > 0).

1.3.10.4.2.4 Settlement Algorithm

Hr Emergency Sales Stlmnt :TC ($) is calculated as:

Hr Emergency Sales Stlmnt :TC ($) =

Hr Total NYISO Emergency Sales ($) * Hr RT TC Ld Ratio Sh :LSE, Exp, WT

Where:

Hr RT TC Ld Ratio Sh :LSE, Exp, WT =

{Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)} ÷ {Hr Total NYISO RT LSE Load (MWh) + Hr Total NYISO RT Export Trans (MWh) + Hr Total NYISO RT WT Trans (MWh)}

Hr Total NYISO Emergency Sales ($) =

Hr NYISO Emergency Sales :ISO-NE ($) + Hr NYISO Emergency Sales :PJM ($) + Hr NYISO Emergency Sales :OH ($) + Hr NYISO Emergency Sales :HQ ($)

1.3.10.4.2.5 Additional Information

None

1.3.10.4.2.6 References

1.3.10.4.3 Transaction Customer - NTAC

1.3.10.4.3.1 Description

The Transaction Customer (TC) New York Power Authority (NYPA) Transmission Access Charge (NTAC) settlement ($) is a charge to TCs intended to cover NYPA’s transmission revenue requirements.

All NTAC charges made by NYISO are collected and paid to NYPA. Load Serving Entities and Transaction Customers (exports and wheel-throughs) receive this charge based on their real-time actual load or transaction schedule.

Market Participants acting as a TC will be charged a portion of the total estimated NYPA transmission revenue requirements based on their actual real-time transaction schedules. It is determined at the hourly-level for each TC that scheduled energy transactions in the NYISO energy markets.

1.3.10.4.3.2 Required Data Elements

1.3.10.4.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
603	Hr NTAC Rate ($/MW)	Hourly New York Power Authority Transmission Access Charge Rate ($/MW) is a number representing the NTAC rate based on NYPA's annual transmission revenue requirement (not recovered through NYPA's TSC and other revenues) for the given hour.	Y

601	Hr RT Export Trans :TC (MWh)	Hourly Real-Time Export Transactions - Transaction Customer (MWh) is a number representing the total absolute amount of real time scheduled point-to-point and LBMP export transactions for the given transaction customer, for the given hour.	Y
602	Hr RT Wheel-Thru Trans :TC (MWh)	Hourly Real-Time wheel-thru Transactions - Transaction Customer (MWh) is a number representing the absolute amount of real time scheduled energy the given transaction customer wheeled-through NYISO during the hour.	Y

1.3.10.4.3.2.2 Intermediates

None

1.3.10.4.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
604	Hr NTAC Stlmnt :TC ($)	Hourly New York Power Authority Transmission Access Charge Settlement - Transaction Customer ($) is a number representing the amount of NTAC charges determined by NYISO for the given TC's export and wheel-through transactions for the given hour.	Y

1.3.10.4.3.3 Eligibility

Transaction Customers will receive a charge for NYPA Transmission Access Charge ($) if all of the following conditions exist:

- The Transaction Customer scheduled energy transactions in the NYISO energy markets (Hr RT Export Trans :TC (MW) > 0 or Hr RT Wheel-Thru Trans :TC (MW) > 0).

1.3.10.4.3.4 Settlement Algorithm

Hr NTAC Stlmnt :TC ($) is calculated as:

Hr NTAC Stlmnt :TC ($) =

Hr NTAC Rate ($/MW) * {Hr RT Export Trans :TC (MWh) + Hr RT Wheel-Thru Trans :TC (MWh)}

1.3.10.4.3.5 Additional Information

As of December 01, 2004, export and wheel-through transactions at the New England proxy bus are no longer subject to the New York Power Authority Transmission Access Charge.~~None~~

1.3.10.4.3.6 References

1.4 Virtual Market Customers

1.4.1 Day Ahead Market Virtual Supply

1.4.1.1 Description

The Day Ahead Market (DAM) Virtual Supply settlement ($) is intended to credit Virtual Market Customers for DAM virtual energy sales to the NYISO Virtual Supply Market.

Virtual Supply Customers are Market Participants who sell energy in the Day Ahead Market at virtual supply buses, and buy it back in the Real-Time Market. Since the same amount of energy is sold/bought in both markets, the virtual market is entirely a financial market, with the main settlement impact being the difference between the Day Ahead Market and Real-Time Market prices at the defined virtual supply buses. To sell energy in the DAM Virtual Supply Market, Market Participants submit Virtual Supply Bids to the NYISO for the desired virtual supply buses.

The DAM Virtual Supply settlement is based on the Virtual Supplier's DAM scheduled virtual energy (MWh) at a given virtual supply bus, multiplied times the three corresponding virtual bus DAM price ($/MW) components (energy, loss, and congestion). The settlement is determined at the hourly-level for each Virtual Bid Entity - Virtual Supply Bus.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Virtual Supplier Settlement for the amount of virtual energy sold (at the virtual supply bus) to the NYISO Virtual Supply Market at day ahead market prices.
- *Loss Settlement* - Virtual Supplier Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by virtual energy sold to the NYISO Virtual Supply Market at day ahead market prices.
- *Congestion Settlement* - Virtual Supplier Settlement for congestion created/eliminated on the NYCA system by virtual energy sold to the NYISO Virtual Supply Market at day ahead market prices.

1.4.1.2 Required Data Elements

1.4.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM VSupply Energy (MWh)	Hourly Day Ahead Market Virtual Supply Energy (MWh) is a number representing the amount of virtual supply energy available for the day ahead and balancing market virtual supply settlements for the given hour.	Y
	Hr DAM Energy Price :VS ($/MW)	Day Ahead Market Energy Price - Virtual Supply ($/MW) is a number representing the price of energy at a virtual supply bus (LBMP energy component)	Y
	Hr DAM Loss Price :VS ($/MW)	Day Ahead Market Loss Price - Virtual Supply ($/MW) is a number representing the price of losses at a virtual supply bus (LBMP loss	Y

Bill Code	Title	Business Description	DSS Value
		component)	
	Hr DAM Cong Price :VS ($/MW)	Day Ahead Market Congestion Price - Virtual Supply ($/MW) is a number representing the price of congestion at a virtual supply bus (LBMP congestion component)	Y

1.4.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM VSupply Engy Stlmnt ($)	Hourly Day Ahead Market Virtual Supply Energy Settlement ($) is a number representing the energy component of the DAM virtual supply settlement for the given hour.	Y
	Hr DAM VSupply Loss Stlmnt ($)	Hourly Day Ahead Market Virtual Supply Loss Settlement ($) is a number representing the loss component of the DAM virtual supply settlement for the given hour.	Y
	Hr DAM VSupply Cong Stlmnt ($)	Hourly Day Ahead Market Virtual Supply Congestion Settlement ($) is a number representing the congestion component of the DAM virtual supply settlement for the given hour.	Y

1.4.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
415	Hr Total DAM VSupply Stlmnt ($)	Hourly Total Day Ahead Market Virtual Supply Settlement ($) is a number representing the total DAM virtual supply settlement for the given hour.	Y

1.4.1.3 Eligibility

Virtual Suppliers will be credited for Day Ahead Market (DAM) Virtual Supply Energy ($) if:

- The Virtual Supplier's given Virtual Supply Bus is scheduled to sell virtual energy (MWh) in the NYISO Day Ahead Virtual Supply Market (Hr DAM VSupply Energy (MWh) > 0).

1.4.1.4 Settlement Algorithm

Hr Total DAM VSupply Stlmnt ($) is calculated as:

Hr Total DAM VSupply Stlmnt ($) =

Hr DAM VSupply Engy Stlmnt ($) + Hr DAM VSupply Loss Stlmnt ($) - Hr DAM VSupply Cong Stlmnt ($)

Where:

Hr DAM VSupply Engy Stlmnt ($) =

Hr DAM VSupply Energy (MWh) * Hr DAM Energy Price :VS ($/MW)

Hr DAM VSupply Loss Stlmnt ($) =

Hr DAM VSupply Energy (MWh) * Hr DAM Loss Price :VS ($/MW)

Hr DAM VSupply Cong Stlmnt ($) =

Hr DAM VSupply Energy (MWh) * Hr DAM Cong Price :VS ($/MW)

1.4.1.5 Additional Information

Hr DAM Total Price :VS ($/MW) can be calculated as:

Hr DAM Total Price :VS ($/MW) =

Hr DAM Energy Price :VS ($/MW) + Hr DAM Loss Price :VS ($/MW) - Hr DAM Cong Price :VS ($/MW)

1.4.1.6 References

The applicability of Day Ahead Market Virtual Supply Energy Payments is described within Article 4 (Section 4.6, and 4.16) of the MST (Market Administration and Control Area Services Tariff).

1.4.2 Day Ahead Market Virtual Load

1.4.2.1 Description

The Day Ahead Market (DAM) Virtual Load settlement ($) is intended to charge Virtual Market Customers for DAM virtual load energy bought from the NYISO Virtual Load Market.

Virtual Load Customers are Market Participants who buy energy in the Day Ahead Market at virtual load buses, and sell it back in the Real-Time Market. Since the same amount of energy is bought/sold in both markets, the virtual market is entirely a financial market, with the main settlement impact being the difference between the Day Ahead Market and Real-Time Market prices at the defined virtual load buses. To buy energy in the DAM Virtual Load Market, Market Participants submit Virtual Load Bids to the NYISO for the desired virtual load buses.

The DAM Virtual Load settlement is based on the Virtual Load Customers DAM scheduled virtual energy (MWh) at a given virtual bus, multiplied times the three corresponding virtual bus DAM price ($/MW) components (energy, loss, and congestion). The settlement is determined at the hourly-level for each Virtual Bid Entity - Virtual Load Bus.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Virtual Load Settlement for the amount of virtual energy bought (at the virtual load bus) from the NYISO Virtual Load Market at day ahead market prices.

- *Loss Settlement* - Virtual Load Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by virtual energy bought from the NYISO Virtual Load Market at day ahead market prices.
- *Congestion Settlement* - Virtual Load Settlement for congestion created/eliminated on the NYCA system by virtual energy bought from the NYISO Virtual Load Market at day ahead market prices.

1.4.2.2 Required Data Elements

1.4.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM VLoad Energy (MWh)	Hourly Day Ahead Market Virtual Load Energy (MWh) is a number representing the amount of virtual load energy available for the day ahead and balancing market virtual load settlements for the given hour.	Y
	Hr DAM Energy Price :VL ($/MW)	Day Ahead Market Energy Price - Virtual Load ($/MW) is a number representing the price of energy at a virtual load bus (LBMP energy component)	Y
	Hr DAM Loss Price :VL ($/MW)	Day Ahead Market Loss Price - Virtual Load ($/MW) is a number representing the price of losses at a virtual load bus (LBMP loss component)	Y
	Hr DAM Cong Price :VL ($/MW)	Day Ahead Market Congestion Price - Virtual Load ($/MW) is a number representing the price of congestion at a virtual load bus (LBMP congestion component)	Y

1.4.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM VLoad Engy Stlmnt ($)	Hourly Day Ahead Market Virtual Load Energy Settlement ($) is a number representing the energy component of the DAM virtual load settlement for the given hour.	Y
	Hr DAM VLoad Loss Stlmnt ($)	Hourly Day Ahead Market Virtual Load Loss Settlement ($) is a number representing the loss component of the DAM virtual load settlement for the given hour.	Y
	Hr DAM VLoad Cong Stlmnt ($)	Hourly Day Ahead Market Virtual Load Congestion Settlement ($) is a number representing the congestion component of the DAM virtual load settlement for the given hour.	Y

1.4.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
413	Hr Total DAM VLoad Stlmnt ($)	Hourly Total Day Ahead Market Virtual Load Settlement ($) is a number representing the total DAM virtual load settlement for the given hour.	Y

1.4.2.3 Eligibility

Virtual Load Customers will be charged for Day Ahead Market (DAM) Virtual Load Energy ($) if:

- The Virtual Load Customers desired virtual load bus is scheduled to buy virtual energy (MWh) in the NYISO Day Ahead Virtual Load Market (Hr DAM VLoad Energy (MWh) > 0).

1.4.2.4 Settlement Algorithm

Hr Total DAM VLoad Stlmnt ($) is calculated as:

Hr Total DAM VLoad Stlmnt ($) =

Hr DAM VLoad Engy Stlmnt ($) + Hr DAM VLoad Loss Stlmnt ($) - Hr DAM VLoad Cong Stlmnt ($)

Where:

Hr DAM VLoad Engy Stlmnt ($) =

Hr DAM VLoad Energy (MWh) * Hr DAM Energy Price :VL ($/MW)

Hr DAM VLoad Loss Stlmnt ($) =

Hr DAM VLoad Energy (MWh) * Hr DAM Loss Price :VL ($/MW)

Hr DAM VLoad Cong Stlmnt ($) =

Hr DAM VLoad Energy (MWh) * Hr DAM Cong Price :VL ($/MW)

1.4.2.5 Additional Information

Hr DAM Total Price :VL ($/MW) can be calculated as:

Hr DAM Total Price :VL ($/MW) =

Hr DAM Energy Price :VL ($/MW) + Hr DAM Loss Price :VL ($/MW) - Hr DAM Cong Price :VL ($/MW)

1.4.2.6 References

The applicability of Day Ahead Market Virtual Load Energy Charges is described within Article 4 (Section 4.6, and 4.16) of the MST (Market Administration and Control Area Services Tariff).

1.4.3 Balancing Market Virtual Supply

1.4.3.1 Description

The Balancing Market Virtual Supply settlement ($) is intended to charge Virtual Supplier Customers for Real-Time Market virtual supply energy bought from the NYISO Virtual Supply Market.

Virtual Supplier Customers are Market Participants who sell energy in the Day Ahead Market at virtual supply buses, and buy it back in the Real-Time Market. Since the same amount of energy is sold/bought in both markets, the virtual market is entirely a financial market, with the main settlement impact being the difference between the Day Ahead Market and Real-Time Market prices at the defined virtual supply buses. To sell energy into the DAM Virtual Supply Market, Market Participants submit Virtual Supply Bids to the NYISO for the desired virtual buses.

The Balancing Market Virtual Supply settlement is based on the Virtual Supplier's DAM scheduled virtual energy (MWh) at a given virtual bus, multiplied times the three corresponding virtual bus Real-Time price ($/MW) components (energy, loss, and congestion). The settlement is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Virtual Bid Entity - Virtual Supply Bus.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Virtual Supplier Settlement for the amount of virtual energy bought (at the virtual supply bus) from the NYISO Virtual Supply Market at real-time market prices.
- *Loss Settlement* - Virtual Supplier Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by virtual energy bought from the NYISO Virtual Supply Market at real-time market prices.
- *Congestion Settlement* - Virtual Supplier Settlement for congestion created/eliminated on the NYCA system by virtual energy bought from the NYISO Virtual Supply Market at real-time market prices.

1.4.3.2 Required Data Elements

1.4.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM VSupply Energy (MWh)	Hourly Day Ahead Market Virtual Supply Energy (MWh) is a number representing the amount of virtual supply energy available for the day ahead and balancing market virtual supply settlements for the given hour.	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y
	SCD RT Energy Price :VS ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a virtual supply bus (LBMP energy component).	Y

Bill Code	Title	Business Description	DSS Value
	SCD RT Loss Price :VS ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a virtual supply bus (LBMP loss component).	Y
	SCD RT Cong Price :VS ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a virtual supply bus (LBMP congestion component).	Y

1.4.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt VSupply Engy Stlmnt ($)	SCD Balancing Market Virtual Supply Energy Settlement ($) is a number representing the energy component of the balancing market virtual supply settlement for the given SCD-interval.	Y
	SCD BalMkt VSupply Loss Stlmnt ($)	SCD Balancing Market Virtual Supply Loss Settlement ($) is a number representing the loss component of the balancing market virtual supply settlement for the given SCD-interval.	Y
	SCD BalMkt VSupply Cong Stlmnt ($)	SCD Balancing Market Virtual Supply Congestion Settlement ($) is a number representing the congestion component of the balancing market virtual supply settlement for the given SCD-interval.	Y

1.4.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt VSupply Stlmnt ($)	SCD Total Balancing Market Virtual Supply Settlement ($) is a number representing the total balancing market virtual supply settlement for the given SCD-interval.	Y

1.4.3.3 Eligibility

Virtual Suppliers will be charged for Real-Time Market Virtual Supply Energy ($) if:

- The Virtual Supplier's desired virtual supply bus is scheduled to sell virtual supply energy (MWh) in the NYISO Day Ahead Virtual Supply Market (Hr DAM VSupply Energy (MWh) > 0).

1.4.3.4 Settlement Algorithm

SCD Total BalMkt VSupply Stlmnt ($) is calculated as:

SCD Total BalMkt VSupply Stlmnt ($) =

SCD BalMkt VSupply Engy Stlmnt ($) + SCD BalMkt VSupply Loss Stlmnt ($) - SCD BalMkt VSupply Cong Stlmnt ($)

Where:

SCD BalMkt VSupply Engy Stlmnt ($) =

Hr DAM VSupply Energy (MWh) * SCD RT Energy Price :VS ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

SCD BalMkt VSupply Loss Stlmnt ($) =

Hr DAM VSupply Energy (MWh) * SCD RT Loss Price :VS ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

SCD BalMkt VSupply Cong Stlmnt ($) =

Hr DAM VSupply Energy (MWh) * SCD RT Cong Price :VS ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

1.4.3.5 Additional Information

SCD RT Total Price :VS ($/MW) can be calculated as:

SCD RT Total Price :VS ($/MW) =

SCD RT Energy Price :VS ($/MW) + SCD RT Loss Price :VS ($/MW) - SCD RT Cong Price :VS ($/MW)

1.4.3.6 References

The applicability of Balancing Market Virtual Supply Energy Charges is described within Article 4 (Section 4.6, and 4.18) of the MST (Market Administration and Control Area Services Tariff).

1.4.4 Balancing Market Virtual Load

1.4.4.1 Description

The Balancing Market Virtual Load settlement ($) is intended to credit Virtual Load Customers for Real-Time Market virtual load energy sales to the NYISO Virtual Load Market.

Virtual Load Customers are Market Participants who buy energy in the Day Ahead Market at virtual buses, and sell it back in the Real-Time Market. Since the same amount of energy is bought/sold in both markets, the virtual market is entirely a financial market, with the main settlement impact being the difference between the Day Ahead Market and Real-Time Market prices at the defined virtual load buses. To buy energy in the DAM Virtual Load Market, Market Participants submit Virtual Load Bids to the NYISO for the desired virtual load buses.

The Balancing Market Virtual Load settlement is based on the Virtual Load Customers DAM scheduled virtual energy (MWh) at a given virtual bus, multiplied times the three corresponding virtual bus Real-

Time price ($/MW) components (energy, loss, and congestion). The settlement is determined at the Security Constrained Dispatch (SCD) dispatch interval (~5-minute) for each Virtual Load - Virtual Bus.

The total settlement is the sum of 3 components as follows:

- *Energy Settlement* - Virtual Load Settlement for the amount of virtual energy sold (at the virtual load bus) to the NYISO Virtual Load Market at real-time market prices.
- *Loss Settlement* - Virtual Load Settlement to compensate for naturally occurring energy losses due to resistance in transmission lines created by virtual energy sold to the NYISO Virtual Load Market at real-time market prices.
- *Congestion Settlement* - Virtual Load Settlement for congestion created/eliminated on the NYCA system by virtual energy sold to the NYISO Virtual Load Market at real-time market prices.

1.4.4.2 Required Data Elements

1.4.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM VLoad Energy (MWh)	Hourly Day Ahead Market Virtual Load Energy (MWh) is a number representing the amount of virtual load energy available for the day ahead and balancing market virtual load settlements for the given hour.	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y
	SCD RT Energy Price :VL ($/MW)	Real-Time Energy Price ($/MW) is a number representing the price of energy at a virtual load bus (LBMP energy component).	Y
	SCD RT Loss Price :VL ($/MW)	Real-Time Loss Price ($/MW) is a number representing the price of loss at a virtual load bus (LBMP loss component).	Y
	SCD RT Cong Price :VL ($/MW)	Real-Time Congestion Price ($/MW) is a number representing the price of congestion at a virtual load bus (LBMP congestion component).	Y

1.4.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	SCD BalMkt VLoad Engy Stlmnt ($)	SCD Balancing Market Virtual Load Energy Settlement ($) is a number representing the energy component of the balancing market virtual load settlement for the given SCD-interval.	Y
	SCD BalMkt VLoad Loss Stlmnt ($)	SCD Balancing Market Virtual Load Loss Settlement ($) is a number representing the loss	Y

Bill Code	Title	Business Description	DSS Value
		component of the balancing market virtual load settlement for the given SCD-interval.	
	SCD BalMkt VLoad Cong Stlmnt ($)	SCD Balancing Market Virtual Load Congestion Settlement ($) is a number representing the congestion component of the balancing market virtual load settlement for the given SCD-interval.	Y

1.4.4.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Total BalMkt VLoad Stlmnt ($)	SCD Total Balancing Market Virtual Load Settlement ($) is a number representing the total balancing market virtual load settlement for the given SCD-interval.	Y

1.4.4.3 Eligibility

Virtual Load Customers will be credited for Real-Time Market Virtual Energy ($) if:

- The Virtual Load Customers desired virtual load bus is scheduled to buy virtual load energy (MWh) in the NYISO Day Ahead Virtual Load Market (Hr DAM VLoad Energy (MWh) > 0).

1.4.4.4 Settlement Algorithm

SCD Total BalMkt VLoad Stlmnt ($) is calculated as:

SCD Total BalMkt VLoad Stlmnt ($) =

SCD BalMkt VLoad Engy Stlmnt ($) + SCD BalMkt VLoad Loss Stlmnt ($) - SCD BalMkt VLoad Cong Stlmnt ($)

Where:

SCD BalMkt VLoad Engy Stlmnt ($) =

Hr DAM VLoad Energy (MWh) * SCD RT Energy Price :VL ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

SCD BalMkt VLoad Loss Stlmnt ($) =

Hr DAM VLoad Energy (MWh) * SCD RT Loss Price :VL ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

SCD BalMkt VLoad Cong Stlmnt ($) =

Hr DAM VLoad Energy (MWh) * SCD RT Cong Price :VL ($/MW) * {SCD Interval Seconds ÷ 3,600 seconds}

1.4.4.5 Additional Information

SCD RT Total Price :VL ($/MW) can be calculated as:

SCD RT Total Price :VL ($/MW) =

SCD RT Energy Price :VL ($/MW) + SCD RT Loss Price :VL ($/MW) - SCD RT Cong Price :VL ($/MW)

1.4.4.6 References

The applicability of Balancing Market Virtual Load Energy Payments is described within Article 4 (Section 4.6, and 4.18) of the MST (Market Administration and Control Area Services Tariff).

1.5 Transmission Congestion Contract Customers

1.5.1 TCC Rent

1.5.1.1 Description

The Transmission Congestion Contract Settlement (TCC Rent) ($) is intended to credit or charge holders of Transmission Congestion Contract Capacity in the NYISO Day Ahead Market.

Transmission Congestion Contract Customers are Market Participants who obtain transmission congestion contract capacity (through either regular auctions or via grand-fathered transmission rights) that can be used to hedge against Day Ahead Market transmission congestion costs. TCCs can also be used purely as an investment subject to the occurrence of transmission congestion over a specified contract path.

Transmission Congestion Contract (TCC) holders are paid a settlement (TCC Rent) which is based on the difference between DAM congestion prices at the contract's point of withdrawal (POW) and point of injection (POI), multiplied times the amount of TCC capacity (MW) held. The settlement is determined at the hourly-level for each Transmission Congestion Contract.

1.5.1.2 Required Data Elements

1.5.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Cong Price :Sink ($/MW)	Hourly Day Ahead Market Congestion Price - Sink ($/MW) is a number representing the day ahead market price of congestion component at a transmission congestion contract's point of withdrawal.	Y
	Hr DAM Cong Price :Src ($/MW)	Hourly Day Ahead Market Congestion Price - Source ($/MW) is a number representing the day ahead market price of congestion component at a transmission congestion contract's point of	Y

Bill Code	Title	Business Description	DSS Value
		injection.	
	Capability Period	Capability Period represents the capability period that the day falls in (either Winter or Summer)	Y
	Hr TCC Capacity :Winter (MW)	Hourly Transmission Congestion Contract Capacity -Winter (MW) is a number representing the amount of capacity during the winter capability period for the given transmission congestion contract for the given hour.	N
	Hr TCC Capacity :Summer (MW)	Hourly Transmission Congestion Contract Capacity -Summer (MW) is a number representing the amount of capacity during the summer capability period for the given transmission congestion contract for the given hour.	N
	TCC GTR Ind	Transmission Congestion Contract (TCC) Grand-Fathered Transmission Rights (GTR) Indicator is a character representing whether or not the given TCC has been converted to Grand-Fathered Transmission Rights.	N
	TCC Contract Type	Transmission Congestion Contract (TCC) Contract Type represents the type of TCC modeled, either the primary TCC, or the sale/purchase TCCs made via 3rd party transactions.	N

1.5.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr TCC Capacity (MW)	Hourly Transmission Congestion Contract Capacity (MW) is a number representing the amount of capacity for the given transmission congestion contract for the given hour.	Y

1.5.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
901	Hr TCC Rent Stlmnt ($)	Hourly Transmission Congestion Contract Rent Settlement ($) is a number representing the amount of transmission congestion contract (TCC) rent being paid to the TCC holder for the given hour.	Y

1.5.1.3 Eligibility

Transmission Congestion Contract Customers will be credited or charged for TCC Rent ($) if:

- The Transmission Congestion Contract Customer is the holder of Transmission Congestion Contract Capacity (MW) in the NYISO DAM (Hr TCC Capacity (MW) > 0).
- The Transmission Congestion Contract is one of the following types:
    - "Primary", "Recon-Purchase" or "Recon-Release".

1.5.1.4 Settlement Algorithm

Hr TCC Rent Stlmnt ($) is calculated as:

Hr TCC Rent Stlmnt ($) =

Hr TCC Capacity (MW) * {Hr DAM Cong Price :Sink ($/MW) - Hr DAM Cong Price :Src ($/MW)}

Where Hr TCC Capacity (MW) is:

If Capability Period = "SUMMER"

Hr TCC Capacity (MW) = Hr TCC Capacity :Summer (MW)

Else (Capability Period = "WINTER")

Hr TCC Capacity (MW) = Hr TCC Capacity :Winter (MW)

1.5.1.5 Additional Information

Ownership Transfer of TCC Capacity via 3rd Party Transactions:

TCCs have the ability to be reconfigured in the monthly TCC auctions. Meaning, the holder of a TCC can transfer (sell) the TCC capacity to another Market Participant during any particular month. For example, if a TCC contract is purchased during a 6-month auction, a Market Participant has the ability to sell a portion of or all the rights to that particular TCC during the monthly reconfiguration auction while still retaining the rights for the full 6-month period.

If the monthly auction clears and my TCCs are sold, NYISO models the original ownership right as a Contract Type of "PRIMARY", the sale of the TCC capacity from the original holder as a Contract Type of "RECON-RELEASE", and the corresponding purchase as "RECON-PURCHASE". These contracts are now all inputs to the TCC Rent ($) calculation assigned to the correct Market Participant.

In order to have the sale transaction offset the original primary TCC capacity ownership, the Hr TCC Capacity (MW) for the TCC modeling the sale transaction (TCC Contract Type = "RECON-RELEASE") is calculated as negative capacity, as follows:

If TCC Contract Type = "RECON-RELEASE"

Hr TCC Capacity (MW) = Hr TCC Capacity (MW) * (-1)

For TCCs converted into Grandfathered Transmission Rights (GTR):

Similar to how pre-existing transmission contracts are converted into NYISO TCCs, Transmission Congestion Contracts can also be converted into GTRs.

If TCC GTR Ind = “Y”, Hr TCC Capacity (MW) = 0

The DAM Congestion Prices ($/MW) for the Source and Sink locations of the TCC are:

The TCC Rent settlement is determined using the difference in DAM Congestion Prices ($/MW) at the TCC’s Point Of Withdrawal (POW/sink) and Point Of Injection (POI/source). The actual prices used in this settlement will vary based on the definition of the TCC’s POW and POI, as follows:

- POW/Sink DAM Congestion Prices (Hr DAM Cong Price :Sink ($/MW))
  - If the TCC POW is the NYISO Reference Bus, the settlement will be made using the NYISO Reference Bus’ DAM Congestion Price ($/MW).
  - Else the settlement will be made using the Zonal DAM Congestion Price ($/MW) corresponding to the TCC’s POW.
- POI/Source DAM Congestion Prices (Hr DAM Cong Price :Src ($/MW))
  - The settlement will be made using either the POI (generator) DAM Congestion Price ($/MW), or the Zonal DAM Congestion Price ($/MW), depending on the definition of the TCC’s POI.

1.5.1.6 References

The applicability of Transmission Congestion Contract Rent is described within Article 2 (Section 2.182) of the MST (Market Administration and Control Area Services Tariff).

1.5.2 TCC Auction

1.6 Demand Response Customers

1.6.1 DADRP

1.6.1.1 Incentive

1.6.1.1.1 Description

The Day Ahead Demand Response Program (DADRP) Incentive settlement ($) is designed to offer an incentive to Market Participants with curtailable loads to participate in the NYISO DADRP.

The DADRP is designed as an incentive to Market Participants with curtailable loads to reduce consumption when DAM prices rise above desired levels. The DADRP can reduce DAM demand volumes and prices, when curtailable load is scheduled in the Day Ahead Market (DAM).

Curtailable loads are modeled in the NYISO MIS as pseudo-generators, with DAM bids, schedules, and prices similar to that of typical generators. Market Participants bid into the NYISO DADRP market via the generation bid templates/processes, and NYISO schedules the demand reduction via generation schedules. The curtailable load buses are shown in this document and the NYISO DSS as Demand Response Buses.

The settlement is initially made using the scheduled amount of demand reduction, but when the actual amount of reduction becomes available from metered sources (via meter authorities) the settlement is re-calculated to reflect the actual reduction. The settlement is determined by multiplying the actual reduction amount times the DAM price at the Demand Response Bus. This settlement is determined at the hourly-level for each Demand Response Provider - Demand Response Bus.

NOTE: During the spring of 2003, NYISO updated the DADRP to allow for separate 3rd parties to consolidate demand for the purposes of bidding into the DADRP market. Prior to this date, the Demand Response Provider and the supporting Load Serving Entity were the same organizations (Market Participant). After this date, the Demand Response Provider may be a separate market organization from that of the Load Serving Entity. This settlement applies to the Demand Response Provider after the effective date of the change.

1.6.1.1.2 Required Data Elements

1.6.1.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Price :DADRP ($/MW)	Hourly Day Ahead Market Energy Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of energy at a demand response bus (LBMP energy component)	Y
	Hr DAM Loss Price :DADRP ($/MW)	Hourly Day Ahead Market Loss Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of losses at a demand response bus (LBMP loss component)	Y
	Hr DAM Cong Price :DADRP ($/MW)	Hourly Day Ahead Market Congestion Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of congestion at a demand response bus (LBMP congestion component)	Y
2002	Hr DADRP Sched Reduction (MWh)	Hourly Day Ahead Demand Response Program Scheduled Reduction (MWh) is a number representing the amount of energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y
2003	Hr DADRP Actual Reduction (MWh)	Hourly Day Ahead Demand Response Program Actual Reduction (MWh) is a number representing the amount of energy reduced at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y

1.6.1.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM Total Price :DADRP ($/MW)	Hourly Day Ahead Market Total Price - Day Ahead Demand Response Program ($/MW) is a number that represents the total DAM LBMP price	Y

Bill Code	Title	Business Description	DSS Value
		at a demand response bus.	

1.6.1.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
2005	Hr DADRP Incentive ($)	Hourly Day Ahead Demand Response Program Incentive ($) is a number representing the settlement paid to a demand response provider for participation in NYISO's day ahead demand response program, for the given hour.	Y

1.6.1.1.3 Eligibility

Demand Response Providers will be credited for DADRP Incentive ($) if all of the following conditions exist:

- The Demand Response Provider actually reduces its real-time load after being scheduled in the NYISO DAM (Hr DADRP Actual Reduction (MWh) > 0).

1.6.1.1.4 Settlement Algorithm

Hr DADRP Incentive ($) is calculated as:

Hr DADRP Incentive ($) =

Hr DADRP Actual Reduction (MWh) * Hr DAM Total Price :DADRP ($/MW)

Where Hr DAM Total Price :DADRP ($/MW) is calculated as:

Hr DAM Total Price :DADRP ($/MW) =

Hr DAM Energy Price :DADRP ($/MW) + Hr DAM Loss Price :DADRP ($/MW) - Hr DAM Cong Price :DADRP ($/MW)

1.6.1.1.5 Additional Information

Prior to NYISO's receipt of the Actual Reduction (MWh) data:

NYISO does not receive the Actual Reduction (MWh) data until after the initial invoice is processed. Therefore, NYISO will substitute the DAM Scheduled Reduction (MWh) for the Actual Reduction (MWh) in the initial settlement process, until the time NYISO receives the Actual Reduction (MWh) data. So, in this case:

Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh)

Meter Value Restriction:

The Actual Reduction (MWh) value is restricted between zero and the DAM Scheduled Reduction (MWh) value in the above algorithm. Therefore,

- If Hr DADRP Actual Reduction (MWh) < 0, then Hr DADRP Actual Reduction (MWh) = 0.
- If Hr DADRP Actual Reduction (MWh) > Hr DADRP Sched Reduction (MWh), then Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh).

Termination of Incetive Payments:

Article 4 Section 4.16 of the Market Administration and Control Area Service Tariff (MST) states that this incentive payment will cease on October 31, 2004.

1.6.1.1.6 References

The applicability of DADRP Incentive payments is described within Article 4 (Section 4.16) of the MST (Market Administration and Control Area Services Tariff).

1.6.1.2 Reduction

1.6.1.2.1 Description

The Day Ahead Demand Response Program (DADRP) Reduction settlement ($) is a payment to a Load Serving Entity (LSE) designed to offset the amount of Day Ahead Market (DAM) load purchase costs when a curtailable load is scheduled to reduce consumption.

The DADRP is designed as an incentive to Market Participants with curtailable loads to reduce consumption when DAM prices rise above desired levels. The DADRP can reduce DAM demand volumes and prices, when curtailable load is scheduled in the Day Ahead Market (DAM).

Curtailable loads are modeled as pseudo-generators, with DAM bids, schedules, and prices similar to that of typical generators. Market Participants bid into the NYISO DADRP market via the generation bid templates/processes, and NYISO schedules the demand reduction via generation schedules. The curtailable load buses are shown in this document and the NYISO DSS as Demand Response Buses.

The settlement is determined by multiplying the scheduled reduction amount times the DAM price at the Demand Response Bus. This settlement is determined at the hourly-level for each Load Serving Entity.

NOTE: During the spring of 2003, NYISO updated the DADRP to allow for separate 3rd parties to consolidate demand for the purposes of bidding into the DADRP market. Prior to this date, the Demand Response Provider and the supporting Load Serving Entity were the same organizations (Market Participant). After this date, the Demand Response Provider may be a separate market organization from that of the Load Serving Entity. This settlement applies to the Load Serving Entity after the effective date of the change.

1.6.1.2.2 Required Data Elements

1.6.1.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Price :DADRP ($/MW)	Hourly Day Ahead Market Energy Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of energy at a demand response bus (LBMP energy component)	Y
	Hr DAM Loss Price :DADRP ($/MW)	Hourly Day Ahead Market Loss Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of losses at a demand response bus (LBMP loss component)	Y
	Hr DAM Cong Price :DADRP ($/MW)	Hourly Day Ahead Market Congestion Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of congestion at a demand response bus (LBMP congestion component)	Y
2002	Hr DADRP Sched Reduction (MWh)	Hourly Day Ahead Demand Response Program Scheduled Reduction (MWh) is a number representing the amount of energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y

1.6.1.2.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM Total Price :DADRP ($/MW)	Hourly Day Ahead Market Total Price - Day Ahead Demand Response Program ($/MW) is a number that represents the total DAM LBMP price at a demand response bus.	Y

1.6.1.2.2.3 Results

Bill Code	Title	Business Description	DSS Value
2006	Hr DADRP Reduction ($)	Hourly Day Ahead Demand Response Program Reduction ($) is a number representing the demand reduction settlement for a load serving entity whose load participated in NYISO's day ahead demand response program, for the given hour.	Y

1.6.1.2.3 Eligibility

Load Serving Entities will be credited for DADRP Reduction ($) if all of the following conditions exist:

- The Demand Response Provider is scheduled to provide load reduction in the NYISO DAM (Hr DADRP Sched Reduction (MWh) > 0).

1.6.1.2.4 Settlement Algorithm

Hr DADRP Reduction ($) is calculated as:

Hr DADRP Reduction ($) =

Hr DADRP Sched Reduction (MWh) * Hr DAM Total Price :DADRP ($/MW)

Where Hr DAM Total Price :DADRP ($/MW) is calculated as:

Hr DAM Total Price :DADRP ($/MW) =

Hr DAM Energy Price :DADRP ($/MW) + Hr DAM Loss Price :DADRP ($/MW) - Hr DAM Cong Price :DADRP ($/MW)

1.6.1.2.5 Additional Information

None

1.6.1.2.6 References

1.6.1.3 Load Balance

1.6.1.3.1 Description

The Day Ahead Demand Response Program (DADRP) Load Balance settlement ($) is a payment to a Load Serving Entity designed to offset the amount of balancing market load purchased due to the demand reduction that was scheduled in the DADRP. The Load Serving Entity is paid the load balance payment when NYISO schedules curtailable load in the DAM.

The DADRP is designed as an incentive to Market Participants with curtailable loads to reduce consumption when DAM prices rise above desired levels. The DADRP can reduce DAM demand volumes and prices, when curtailable load is scheduled in the Day Ahead Market (DAM).

Curtailable loads are modeled as pseudo-generators, with DAM bids, schedules, and prices similar to that of typical generators. Market Participants bid into the NYISO DADRP market via the generation bid templates/processes, and NYISO schedules the demand reduction via generation schedules. The curtailable load buses are shown in this document and the NYISO DSS as Demand Response Buses.

The settlement is initially made using the scheduled amount of demand reduction, but when the actual amount of reduction becomes available from metered sources (via meter authorities) the settlement is re-calculated to reflect the actual reduction. The settlement is determined by multiplying the actual reduction amount times the time-weighted real-time zonal-average prices at the Demand Response Bus. This settlement is determined at the hourly-level (SCD-level price data is time-weighted to perform this settlement at the hour) for each Load Serving Entity.

NOTE: During the spring of 2003, NYISO updated the DADRP to allow for separate 3rd parties to consolidate demand for the purposes of bidding into the DADRP market. Prior to this date, the Demand Response Provider and the supporting Load Serving Entity were the same organizations (Market Participant). After this date, the Demand Response Provider may be a separate market organization from that of the Load Serving Entity. This settlement applies to the Load Serving Entity after the effective date of the change.

1.6.1.3.2 Required Data Elements

1.6.1.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr RT Zonal Energy Price :DADRP ($/MW)	Real-Time Zonal Energy Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of energy for the zone in which the given demand response bus is located (LBMP energy component)	Y
	Hr RT Zonal Loss Price :DADRP ($/MW)	Real-Time Zonal Loss Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of losses for the zone in which the given demand response bus is located (LBMP loss component)	Y
	Hr RT Zonal Cong Price :DADRP ($/MW)	Real-Time Zonal Congestion Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of congestion for the zone in which the given demand response bus is located (LBMP congestion component)	Y
2002	Hr DADRP Sched Reduction (MWh)	Hourly Day Ahead Demand Response Program Scheduled Reduction (MWh) is a number representing the amount of energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y
2003	Hr DADRP Actual Reduction (MWh)	Hourly Day Ahead Demand Response Program Actual Reduction (MWh) is a number representing the amount of energy reduced at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y

1.6.1.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
408	Hr Total Zonal RT Price :DADRP ($/MW)	Total Real-Time Zonal Price - Day Ahead Demand Response Program ($/MW) is a number representing the total LBMP price of the zone in which the given demand response bus is located.	Y

1.6.1.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
2008	Hr DADRP Load Balance ($)	Hourly Day Ahead Demand Response Program Load Balance ($) is a number representing the load balancing settlement for a load serving entity whose load participated in NYISO's day ahead demand response program, for the given hour.	Y

1.6.1.3.3 Eligibility

Load Serving Entities will be credited for DADRP Load Balance ($) if all of the following conditions exist:

- The Demand Response Provider actually reduces its real-time load after being scheduled in the NYISO DAM (Hr DADRP Actual Reduction (MWh) > 0).

1.6.1.3.4 Settlement Algorithm

Hr DADRP Load Balance ($) is calculated as:

Hr DADRP Load Balance ($) =

Hr DADRP Actual Reduction (MWh) * Hr Total Zonal RT Price :DADRP ($/MW)

Where Hr Total Zonal RT Price :DADRP ($/MW) is calculated as:

Hr Total Zonal RT Price :DADRP ($/MW) =

Hr RT Zonal Energy Price :DADRP ($/MW) + Hr RT Zonal Loss Price :DADRP ($/MW) - Hr RT Zonal Cong Price :DADRP ($/MW)

1.6.1.3.5 Additional Information

Prior to NYISO's receipt of the Actual Reduction (MWh) data:

NYISO does not receive the Actual Reduction (MWh) data until after the initial invoice is processed. Therefore, NYISO will substitute the DAM Scheduled Reduction (MWh) for the Actual Reduction (MWh) in the initial settlement process, until the time NYISO receives the Actual Reduction (MWh) data. So, in this case:

Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh)

Meter Value Restriction:

The Actual Reduction (MWh) value is restricted between zero and the DAM Scheduled Reduction (MWh) value in the above algorithm. Therefore,

- If Hr DADRP Actual Reduction (MWh) < 0, then Hr DADRP Actual Reduction (MWh) = 0.
- If Hr DADRP Actual Reduction (MWh) > Hr DADRP Sched Reduction (MWh), then Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh).

1.6.1.3.6 References

1.6.1.4 Penalty for Demand Response Providers

1.6.1.4.1 Description

The Day Ahead Demand Response Program (DADRP) Penalty for Demand Response Providers settlement ($) is a charge to a Demand Response Provider when NYISO schedules curtailable load in the DAM but the scheduled load reduction doesn't actually physically occur.

The DADRP is designed as an incentive to Market Participants with curtailable loads to reduce consumption when DAM prices rise above desired levels. The DADRP can reduce DAM demand volumes and prices, when curtailable load is scheduled in the Day Ahead Market (DAM).

Curtailable loads are modeled as pseudo-generators, with DAM bids, schedules, and prices similar to that of typical generators. Market Participants bid into the NYISO DADRP market via the generation bid templates/processes, and NYISO schedules the demand reduction via generation schedules. The curtailable load buses are shown in this document and the NYISO DSS as Demand Response Buses.

The settlement is initially made using the scheduled amount of demand reduction, but when the actual amount of reduction becomes available from metered sources (via meter authorities) the settlement is re-calculated to reflect the actual reduction. The settlement is based on the difference between the DAM Scheduled Reduction (MWh) and the Actual Reduction (MWh), times either the DAM or RT market price depending on a variety of scenarios (see below). This settlement is determined at the hourly-level for each Demand Response Provider.

NOTE: During the spring of 2003, NYISO updated the DADRP to allow for separate 3rd parties to consolidate demand for the purposes of bidding into the DADRP market. Prior to this date, the Demand Response Provider and the supporting Load Serving Entity were the same organizations (Market Participant). After this date, the Demand Response Provider may be a separate market organization from that of the Load Serving Entity. This settlement applies to the Demand Response Provider after the effective date of the change.

1.6.1.4.2 Required Data Elements

1.6.1.4.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Price :DADRP ($/MW)	Hourly Day Ahead Market Energy Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of energy at a demand response bus (LBMP energy component)	Y
	Hr DAM Loss Price :DADRP ($/MW)	Hourly Day Ahead Market Loss Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of losses at a demand response bus (LBMP loss component)	Y
	Hr DAM Cong Price :DADRP ($/MW)	Hourly Day Ahead Market Congestion Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of congestion at a demand response bus (LBMP congestion component)	Y

Bill Code	Title	Business Description	DSS Value
	Hr RT Energy Price :DADRP ($/MW)	Hourly Real-Time Energy Price - Day Ahead Demand Response Program ($/MW) is a number representing the time-weighted hourly price of energy at the given demand response bus (LBMP energy component).	Y
	Hr RT Loss Price :DADRP ($/MW)	Hourly Real-Time Loss Price - Day Ahead Demand Response Program ($/MW) is a number representing the time-weighted hourly price of losses at the given demand response bus (LBMP loss component).	Y
	Hr RT Cong Price :DADRP ($/MW)	Hourly Real-Time Congestion Price - Day Ahead Demand Response Program ($/MW) is a number representing the time-weighted hourly price of congestion at the given demand response bus (LBMP congestion component).	Y
2002	Hr DADRP Sched Reduction (MWh)	Hourly Day Ahead Demand Response Program Scheduled Reduction (MWh) is a number representing the amount of energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y
2003	Hr DADRP Actual Reduction (MWh)	Hourly Day Ahead Demand Response Program Actual Reduction (MWh) is a number representing the amount of energy reduced at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y

1.6.1.4.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM Total Price :DADRP ($/MW)	Hourly Day Ahead Market Total Price - Day Ahead Demand Response Program ($/MW) is a number that represents the total DAM LBMP price at a demand response bus.	Y
2004	Hr RT Total Price :DADRP ($/MW)	Hourly Real-Time Total Price - Day Ahead Demand Response Program ($/MW) is a number representing the time-weighted hourly total LBMP price at the given demand response bus.	Y

1.6.1.4.2.3 Results

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
2007	Hr DADRP Penalty :DRP ($)	Hourly Day Ahead Demand Response Program Penalty - Demand Response Provider ($) is a number representing the penalty charged to a demand response provider who participated in NYISO's day ahead demand response program, for the given hour.	Y

1.6.1.4.3 Eligibility

Demand Response Providers will be charged for Penalty for Demand Response Providers ($) if all of the following conditions exist:

- The Demand Response Provider is scheduled to provide load reduction in the NYISO DAM (Hr DADRP Sched Reduction (MWh) > 0).
- The Demand Response Provider does not actually fully reduce its real-time load after being scheduled in the NYISO DAM (Hr DADRP Actual Reduction (MWh) < Hr DADRP Sched Reduction (MWh)).

1.6.1.4.4 Settlement Algorithm

Hr DADRP Penalty :DRP ($) is calculated as:

Prior to the 07/01/2003 DADRP changes to the penalty determination:

Hr DADRP Penalty :DRP ($) =

{Hr DADRP Actual Reduction (MWh) - Hr DADRP Sched Reduction (MWh)} * 1.1 * Max{Hr DAM Total Price :DADRP ($/MW), Hr RT Total Price :DADRP ($/MW)}

On or After the 07/01/2003 DADRP changes to the penalty determination:

If the Demand Response Provider and Load Serving Entity are the same organization, then:

Hr DADRP Penalty :DRP ($) =

{Hr DADRP Actual Reduction (MWh) - Hr DADRP Sched Reduction (MWh)} * Max {Hr DAM Total Price :DADRP ($/MW), Hr RT Total Price :DADRP ($/MW)}

Otherwise:

Hr DADRP Penalty :DRP ($) =

[{Hr DADRP Actual Reduction (MWh) - Hr DADRP Sched Reduction (MWh)} * Max {Hr DAM Total Price :DADRP ($/MW), Hr RT Total Price :DADRP ($/MW)}] -

[{Hr DADRP Actual Reduction (MWh) - Hr DADRP Sched Reduction (MWh)} * Hr DAM Total Price :DADRP ($/MW)]

Where Hr DAM Total Price :DADRP ($/MW) is calculated as:

Hr DAM Total Price :DADRP ($/MW) =

Hr DAM Energy Price :DADRP ($/MW) + Hr DAM Loss Price :DADRP ($/MW) - Hr DAM Cong Price :DADRP ($/MW)

And Hr RT Total Price :DADRP ($/MW) is calculated as:

Hr RT Total Price :DADRP ($/MW) =

Hr RT Energy Price :DADRP ($/MW) + Hr RT Loss Price :DADRP ($/MW) - Hr RT Cong Price :DADRP ($/MW)

1.6.1.4.5 Additional Information

Prior to NYISO's receipt of the Actual Reduction (MWh) data:

NYISO does not receive the Actual Reduction (MWh) data until after the initial invoice is processed. Therefore, NYISO will substitute the DAM Scheduled Reduction (MWh) for the Actual Reduction (MWh) in the initial settlement process, until the time NYISO receives the Actual Reduction (MWh) data. So, in this case:

Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh)

Meter Value Restriction:

The Actual Reduction (MWh) value is restricted between zero and the DAM Scheduled Reduction (MWh) value in the above algorithm. Therefore,

- If Hr DADRP Actual Reduction (MWh) < 0, then Hr DADRP Actual Reduction (MWh) = 0.
- If Hr DADRP Actual Reduction (MWh) > Hr DADRP Sched Reduction (MWh), then Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh).

1.6.1.4.6 References

The applicability of DADRP Penalty for Demand Response Providers is described within Article 4 (Section 4.16 C) of the MST (Market Administration and Control Area Services Tariff).

1.6.1.5 Penalty for Load Serving Entities

1.6.1.5.1 Description

The Day Ahead Demand Response Program (DADRP) Penalty for Load Serving Entities settlement ($) is a charge to a Load Serving Entity when NYISO schedules curtailable load in the DAM but the scheduled load reduction doesn't actually physically occur.

The DADRP is designed as an incentive to Market Participants with curtailable loads to reduce consumption when DAM prices rise above desired levels. The DADRP can reduce DAM demand volumes and prices, when curtailable load is scheduled in the Day Ahead Market (DAM).

Curtailable loads are modeled as pseudo-generators, with DAM bids, schedules, and prices similar to that of typical generators. Market Participants bid into the NYISO DADRP market via the generation bid templates/processes, and NYISO schedules the demand reduction via generation schedules. The curtailable load buses are shown in this document and the NYISO DSS as Demand Response Buses.

The settlement is initially made using the scheduled amount of demand reduction, but when the actual amount of reduction becomes available from metered sources (via meter authorities) the settlement is re-calculated to reflect the actual reduction. The settlement is based on the difference between the DAM Scheduled Reduction (MWh) and the Actual Reduction (MWh), times either the DAM market price at the given Demand Response Bus. This settlement is determined at the hourly-level for each Load Serving Entity - Demand Response Bus.

NOTE: During the spring of 2003, NYISO updated the DADRP to allow for separate 3rd parties to consolidate demand for the purposes of bidding into the DADRP market. Prior to this date, the Demand Response Provider and the supporting Load Serving Entity were the same organizations (Market Participant). After this date, the Demand Response Provider may be a separate market organization from that of the Load Serving Entity. This settlement applies to the Load Serving Entity ***only*** after the effective date of the change.

1.6.1.5.2 Required Data Elements

1.6.1.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Energy Price :DADRP ($/MW)	Hourly Day Ahead Market Energy Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of energy at a demand response bus (LBMP energy component)	Y
	Hr DAM Loss Price :DADRP ($/MW)	Hourly Day Ahead Market Loss Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of losses at a demand response bus (LBMP loss component)	Y
	Hr DAM Cong Price :DADRP ($/MW)	Hourly Day Ahead Market Congestion Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of congestion at a demand response bus (LBMP congestion component)	Y
2002	Hr DADRP Sched Reduction (MWh)	Hourly Day Ahead Demand Response Program Scheduled Reduction (MWh) is a number representing the amount of energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y
2003	Hr DADRP Actual Reduction (MWh)	Hourly Day Ahead Demand Response Program Actual Reduction (MWh) is a number representing the amount of energy reduced at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y

1.6.1.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
	Hr DAM Total Price :DADRP ($/MW)	Hourly Day Ahead Market Total Price - Day Ahead Demand Response Program ($/MW) is a number that represents the total DAM LBMP price at a demand response bus.	Y

1.6.1.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
2007	Hr DADRP Penalty :LSE ($)	Hourly Day Ahead Demand Response Program Penalty - Load Serving Entity ($) is a number representing the penalty charged to a load serving entity whose load participated in NYISO's day ahead demand response program, for the given hour.	Y

1.6.1.5.3 Eligibility

Load Serving Entities will be charged for Penalty for Load Serving Entity ($) if all of the following conditions exist:

- The Demand Response Provider is scheduled to provide load reduction in the NYISO DAM (Hr DADRP Sched Reduction (MWh) > 0).
- The Demand Response Provider does not actually fully reduce its real-time load after being scheduled in the NYISO DAM (Hr DADRP Actual Reduction (MWh) < Hr DADRP Sched Reduction (MWh)).

1.6.1.5.4 Settlement Algorithm

Hr DADRP Penalty :LSE ($) is calculated as:

Prior to the 07/01/2003 DADRP changes to the penalty determination:

Hr DADRP Penalty :LSE ($) = 0.

On or After the 07/01/2003 DADRP changes to the penalty determination:

Hr DADRP Penalty :LSE ($) =

{Hr DADRP Actual Reduction (MWh) - Hr DADRP Sched Reduction (MWh)} * Hr DAM Total Price :DADRP ($/MW)

Where Hr DAM Total Price :DADRP ($/MW) is calculated as:

Hr DAM Total Price :DADRP ($/MW) =

Hr DAM Energy Price :DADRP ($/MW) + Hr DAM Loss Price :DADRP ($/MW) - Hr DAM Cong Price :DADRP ($/MW)

1.6.1.5.5 Additional Information

Prior to NYISO's receipt of the Actual Reduction (MWh) data:

NYISO does not receive the Actual Reduction (MWh) data until after the initial invoice is processed. Therefore, NYISO will substitute the DAM Scheduled Reduction (MWh) for the Actual Reduction (MWh) in the initial settlement process, until the time NYISO receives the Actual Reduction (MWh) data. So, in this case:

Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh)

Meter Value Restriction:

The Actual Reduction (MWh) value is restricted between zero and the DAM Scheduled Reduction (MWh) value in the above algorithm. Therefore,

- If Hr DADRP Actual Reduction (MWh) < 0, then Hr DADRP Actual Reduction (MWh) = 0.
- If Hr DADRP Actual Reduction (MWh) > Hr DADRP Sched Reduction (MWh), then Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh).

1.6.1.5.6 References

The applicability of DADRP Penalty for Load Serving Entities is described within Article 4 (Section 4.16 C) of the MST (Market Administration and Control Area Services Tariff).

1.6.1.6 Bid Cost Guarantee

1.6.1.6.1 Description

The Day Ahead Demand Response Program (DADRP) Bid Cost Guarantee is a payment to a Demand Response Provider when NYISO schedules curtailable load in the DAM but the revenue earned does not out-weight the bid costs determined from the DAM Demand Response Bid. This settlement guarantees the Demand Response Provider will at a minimum break-even when scheduled in the DADRP.

The DADRP is designed as an incentive to Market Participants with curtailable loads to reduce consumption when DAM prices rise above desired levels. The DADRP can reduce DAM demand volumes and prices, when curtailable load is scheduled in the Day Ahead Market (DAM).

Curtailable loads are modeled as pseudo-generators, with DAM bids, schedules, and prices similar to that of typical generators. Market Participants bid into the NYISO DADRP market via the generation bid templates/processes, and NYISO schedules the demand reduction via generation schedules. The curtailable load buses are shown in this document and the NYISO DSS as Demand Response Buses.

The settlement is initially made using the scheduled amount of demand reduction, but when the actual amount of reduction becomes available from metered sources (via meter authorities) the settlement is re-calculated to reflect the actual reduction. The settlement is based on the difference between the corresponding revenue earned and the associated bid costs (reduction initiation, minimum reduction, and incremental reduction costs) as determined from the Demand Response Bus' DAM Demand Response Bid. This settlement is determined at the daily-level for each Demand Response Provider - Demand Response Bus.

NOTE: During the spring of 2003, NYISO updated the DADRP to allow for separate 3rd parties to consolidate demand for the purposes of bidding into the DADRP market. Prior to this date, the Demand Response Provider and the supporting Load Serving Entity were the same organizations (Market Participant). After this date, the Demand Response Provider may be a separate market organization from that of the Load Serving Entity. This settlement applies to the Demand Response Provider after the effective date of the change.

1.6.1.6.2 Required Data Elements

1.6.1.6.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DADRP Bid Type Ind	Day Ahead Demand Response Bid Type Indicator is a character representing the type of DAM demand response bid submitted by the Demand Response Provider (block or curve).	N
	Hr DADRP Bid Dispatch Seg :Block	Hourly Day Ahead Demand Response Bid Dispatch Segments - Block is a number representing the number of segments in the given DAM demand response bid (block generation bid type).	N
	Hr DADRP Bid Dispatch Seg :Curve	Hourly Day Ahead Demand Response Bid Dispatch Segments - Curve is a number representing the number of segments in the given DAM demand response bid (curve generation bid type).	N
	Hr DADRP Bid :Min Reduction Cost ($)	Hourly Day Ahead Demand Response Bid Minimum Reduction Cost ($) is a number representing the cost of the minimum reduction level ($) for the demand response bus during the hour, submitted by the Demand Response Provider in a demand response bid.	Y
	Hr DADRP Bid :Min Reduction (MWh)	Hourly Day Ahead Demand Response Bid Minimum Reduction (MWh) is a number representing the minimum reduction level (MWh) for the demand response bus during the hour, submitted by the Demand Response Provider in a demand response bid.	Y
	Hr DADRP Bid :Price 1 ($/MW)	Hourly Day Ahead Demand Response Bid Price #1 is a number representing the bid price of reduction energy ($/MW) bid in the first block during the hour, submitted by the Demand Response Provider in a demand response bid.	Y
	Hr DADRP Bid :Price 2 ($/MW)	Hourly Day Ahead Demand Response Bid Price #2 is a number representing the bid price of reduction energy ($/MW) bid in the second block during the hour, submitted by the Demand Response Provider	Y

Bill Code	Title	Business Description	DSS Value
		in a demand response bid.	
	Hr DADRP Bid :Price 3 ($/MW)	Hourly Day Ahead Demand Response Bid Price #3 is a number representing the bid price of reduction energy ($/MW) bid in the third block during the hour, submitted by the Demand Response Provider in a demand response bid.	Y
	Hr DADRP Bid :Price 4 ($/MW)	Hourly Day Ahead Demand Response Bid Price #4 is a number representing the bid price of reduction energy ($/MW) bid in the fourth block during the hour, submitted by the Demand Response Provider in a demand response bid.	Y
	Hr DADRP Bid :Price 5 ($/MW)	Hourly Day Ahead Demand Response Bid Price #5 is a number representing the bid price of reduction energy ($/MW) bid in the fifth block during the hour, submitted by the Demand Response Provider in a demand response bid.	Y
	Hr DADRP Bid :Price 6 ($/MW)	Hourly Day Ahead Demand Response Bid Price #6 is a number representing the bid price of reduction energy ($/MW) bid in the sixth block during the hour, submitted by the Demand Response Provider in a demand response bid.	Y
	Hr DADRP Bid :Reduction 1 (MWh)	Hourly Day Ahead Demand Response Bid Reduction #1 is a number representing the amount of reduction energy (MWh) bid in the first block during the hour, submitted by the Demand Response Provide in a demand response bid.	Y
	Hr DADRP Bid :Reduction 2 (MWh)	Hourly Day Ahead Demand Response Bid Reduction #2 is a number representing the amount of reduction energy (MWh) bid in the second block during the hour, submitted by the Demand Response Provide in a demand response bid.	Y
	Hr DADRP Bid :Reduction 3 (MWh)	Hourly Day Ahead Demand Response Bid Reduction #3 is a number representing the amount of reduction energy (MWh) bid in the third block during the hour, submitted by the Demand Response Provide in a demand response bid.	Y
	Hr DADRP Bid :Reduction 4 (MWh)	Hourly Day Ahead Demand Response Bid Reduction #4 is a number representing the amount of reduction energy (MWh) bid in the fourth block during the hour, submitted by the Demand Response Provide in a demand response bid.	Y
	Hr DADRP Bid :Reduction 5 (MWh)	Hourly Day Ahead Demand Response Bid Reduction #5 is a number representing the amount of reduction energy (MWh) bid in the fifth block	Y

Bill Code	Title	Business Description	DSS Value
		during the hour, submitted by the Demand Response Provide in a demand response bid.	
	Hr DADRP Bid :Reduction 6 (MWh)	Hourly Day Ahead Demand Response Bid Reduction #6 is a number representing the amount of reduction energy (MWh) bid in the sixth block during the hour, submitted by the Demand Response Provide in a demand response bid.	Y
	Hr DADRP Bid :Reduct Init Cost ($)	Hourly Day Ahead Market Day Ahead Demand Response Program Bid - Reduction Initiation Cost ($) is a number representing the amount of reduction initiation cost provided by the Market Participant on a Day Ahead Demand Response Program Bid, for the given hour.	Y
	Hr DADRP Sched Reduct :PriorHr (MWh)	Hourly Day Ahead Demand Response Program Scheduled Reduction - Prior Hour (MWh) is a number representing the amount energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the hour prior to the given hour.	Y
	Hr DAM Energy Price :DADRP ($/MW)	Hourly Day Ahead Market Energy Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of energy at a demand response bus (LBMP energy component), for the given hour.	Y
	Hr DAM Loss Price :DADRP ($/MW)	Hourly Day Ahead Market Loss Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of losses at a demand response bus (LBMP loss component), for the given hour.	Y
	Hr DAM Cong Price :DADRP ($/MW)	Hourly Day Ahead Market Congestion Price - Day Ahead Demand Response Program ($/MW) is a number representing the price of congestion at a demand response bus (LBMP congestion component), for the given hour.	Y
2002	Hr DADRP Sched Reduction (MWh)	Hourly Day Ahead Demand Response Program Scheduled Reduction (MWh) is a number representing the amount of energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y
2003	Hr DADRP Actual Reduction (MWh)	Hourly Day Ahead Demand Response Program Actual Reduction (MWh) is a number representing the amount of energy reduced at the given demand response bus as part of the day ahead demand response program, for the given hour.	Y

1.6.1.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr DAM Total Price :DADRP ($/MW)	Hourly Day Ahead Market Total Price - Day Ahead Demand Response Program ($/MW) is a number that represents the total DAM LBMP price at a demand response bus, for the given hour.	Y
	Hr DADRP Alloc Min Reduct Cost ($)	Hourly Day Ahead Demand Response Program Allocated Minimum Reduction Cost ($) is a number representing the amount of a demand response provider's minimum reduction cost (from a Demand Response Bid) that was allocated to the given hour for the given demand response bus.	Y
	Hr DADRP Alloc Reduct Init Cost ($)	Hourly Day Ahead Demand Response Program Allocated Reduction Initiation Cost ($) is a number representing the amount of a demand response provider's reduction initiation cost (from a Demand Response Bid) that was allocated to the given hour for the given demand response bus.	Y
	Hr DADRP Incrmntl Reduct Cost ($)	Hourly Day Ahead Demand Response Program Incremental Reduction Cost ($) is a number representing the amount of a demand response provider's incremental reduction cost (integration of the Demand Response Bid curve from minimum reduction (MWh) to actual reduction energy (MWh)) that was determined for the given hour for the given demand response bus.	Y
2009	Hr Total DADRP Cost ($)	Hourly Total Day Ahead Demand Response Program Cost ($) is a number representing the determined total amount of bid cost for the given demand response bus for the given hour; sum of allocated start up, allocated minimum reduction, and incremental costs.	Y
	Hr Total DADRP Revenue ($)	Hourly Total Day Ahead Demand Response Program Revenue ($) is a number representing the total demand response program revenue for the given demand response bus for the given hour used to net against the determined total DADRP costs.	Y
	Hr Total DADRP Net Cost ($)	Hourly Total Day Ahead Demand Response Program Net Cost ($) is a number representing the determined total net demand response bid costs for the given demand response bus for the given hour; determined as the net of total DADRP costs and total DADRP revenue.	Y
	Day DADRP Sched Reduction	Daily Day Ahead Demand Response Program Scheduled Reduction (MWh) is a number	Y

Bill Code	Title	Business Description	DSS Value
	(MWh)	representing the amount of energy scheduled for reduction at the given demand response bus as part of the day ahead demand response program, for the given day.	
	Day DADRP Bid :Reduct Init Cost ($)	Daily Day Ahead Market Day Ahead Demand Response Program Bid - Reduction Initiation Cost ($) is a number representing the amount of reduction initiation cost provided by the Market Participant on a Day Ahead Demand Response Program Bid, for the given day.	N

1.6.1.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
2015	Day DADRP BCG Stlmnt ($)	Daily Day Ahead Demand Response Program Bid Cost Guarantee ($) is a number representing the bid cost guarantee settlement to a demand response provider who participated in NYISO's day ahead demand response program, for the given day.	Y

1.6.1.6.3 Eligibility

Demand Response Providers will be credited for DADRP Bid Cost Guarantee ($) if all of the following conditions exist:

- The Demand Response Provider is scheduled to provide load reduction in the NYISO DAM (Hr DADRP Sched Reduction (MWh) > 0).
- The Demand Response Provider actually reduces its real-time load after being scheduled in the NYISO DAM (Hr DADRP Actual Reduction (MWh) > 0).
- The Demand Response Provider’s bid costs exceed revenue for the day (Sum of Hr Total DADRP Net Cost ($) > 0 for all hours in a day).

1.6.1.6.4 Settlement Algorithm

Day DADRP BCG Stlmnt ($) is calculated as:

Day DADRP BCG Stlmnt ($) =

Max{∑ Hr Total DADRP Net Cost ($) for all hours in a day, 0}

Hr Total DADRP Net Cost ($) is calculated as:

Hr Total DADRP Net Cost ($) =

Hr Total DADRP Cost ($) - Hr Total DADRP Revenue ($)

Where:

Hr Total DADRP Revenue ($) =

Hr DADRP Actual Reduction (MWh) * Hr DAM Total Price :DADRP ($/MW)

Hr Total DADRP Cost ($) =

Hr DADRP Alloc Min Reduct Cost ($) + Hr DADRP Alloc Reduct Init Cost ($) + Hr DADRP Incrmntl Reduct Cost ($)

Where:

Hr DADRP Alloc Min Reduct Cost ($) =

Hr DADRP Bid :Min Reduction Cost ($) * {Hr DADRP Actual Reduction (MWh) ÷ Hr DADRP Bid :Min Reduction (MWh)}

Hr DADRP Alloc Reduct Init Cost ($) =

Day DADRP Bid :Reduct Init Cost ($) * {Hr DADRP Actual Reduction (MWh) ÷ Day DADRP Sched Reduction (MWh)}

Day DADRP Sched Reduction (MWh) = ∑ Hr DADRP Sched Reduction (MWh) for all hours in a day.

Day DADRP Bid :Reduct Init Cost ($) = ∑ Hr DADRP Bid :Reduct Init Cost ($) for all hours in a day.

NOTE: Hr DADRP Bid :Reduct Init Cost ($) = 0 for each hour in which Hr DADRP Sched Reduct :PriorHr (MWh) > 0.

Hr DADRP Incrmntl Reduct Cost ($) is the cost determined from integrating the DAM Demand Response Bid from Minimum Reduction (MWh) to Actual Reduction (MWh).

Please see Appendix A, Figure 1.3 for more information on how to determine the incremental cost ($) on a given Demand Response Bid corresponding to a specific upper and lower generation output level (MWh).

Where Hr DAM Total Price :DADRP ($/MW) is calculated as:

Hr DAM Total Price :DADRP ($/MW) =

Hr DAM Energy Price :DADRP ($/MW) + Hr DAM Loss Price :DADRP ($/MW) - Hr DAM Cong Price :DADRP ($/MW)

1.6.1.6.5 Additional Information

Prior to NYISO's receipt of the Actual Reduction (MWh) data:

NYISO does not receive the Actual Reduction (MWh) data until after the initial invoice is processed. Therefore, NYISO will substitute the DAM Scheduled Reduction (MWh) for the Actual Reduction (MWh) in the initial settlement process, until the time NYISO receives the Actual Reduction (MWh) data. So, in this case:

Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh)

Meter Value Restriction:

The Actual Reduction (MWh) value is restricted between zero and the DAM Scheduled Reduction (MWh) value in the above algorithm. Therefore,

- If Hr DADRP Actual Reduction (MWh) < 0, then Hr DADRP Actual Reduction (MWh) = 0.
- If Hr DADRP Actual Reduction (MWh) > Hr DADRP Sched Reduction (MWh), then Hr DADRP Actual Reduction (MWh) = Hr DADRP Sched Reduction (MWh).

Minimum Generation Cost Allocation exceptions:

- If Hr DADRP Bid :Min Reduction (MWh) = 0, and Hr DADRP Actual Reduction (MWh) > 0, then {Hr DADRP Actual Reduction (MWh) ÷ Hr DADRP Bid :Min Reduction (MWh)} = 1.
- If Hr DADRP Bid :Min Reduction (MWh) = 0, and Hr DADRP Actual Reduction (MWh) <= 0, then {Hr DADRP Actual Reduction (MWh) ÷ Hr DADRP Bid :Min Reduction (MWh)} = 0.
- If {Hr DADRP Actual Reduction (MWh) ÷ Hr DADRP Bid :Min Reduction (MWh)} > 1, then {Hr DADRP Actual Reduction (MWh) ÷ Hr DADRP Bid :Min Reduction (MWh)} =1.

Reduction Initiation Cost Allocation Exceptions:

- If Day DADRP Sched Reduction (MWh) = 0, Hr DADRP Alloc Reduct Init Cost ($) = 0

1.6.1.6.6 References

The applicability of DADRP Bid Cost Guarantee is described within Article 4 (Section 4.23) of the MST (Market Administration and Control Area Services Tariff).

1.6.2 EDRP

1.6.3 SCR

1.7 Transmission Owners

1.7.1 DAM Congestion Residual

1.7.1.1 Description

The Transmission Owner (TO) Day Ahead Market (DAM) Congestion Residual settlement ($) is designed to allocate (charge or payment) any cash imbalance in NYISO's DAM Congestion settlements to the NYCA Transmission Owners.

The NYISO was created as a non-profit organization; therefore it should be revenue neutral (income from charges should equal payments for credits). So, the NYISO customer settlements rules need to identify and address any scenarios where they are not revenue neutral.

Any identified amounts where NYISO is not revenue neutral are called residuals. Residuals are the net difference between related total credits and charges, and are created from settlements where NYISO has customer settlements both to pay suppliers and to charge load/transaction customers.

The TO DAM Congestion Residual settlement is based upon the NYISO Total DAM Congestion Residual ($) times the Transmission Owner's MW-Mile Coefficient. It is determined at the daily-level for each TO that is responsible for transmission capacity of transmission line within the New York Control Area (NYCA).

1.7.1.2 Required Data Elements

1.7.1.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Day Ttl NYISO DAM Cng Cr to PS ($)	Daily Total NYISO Day Ahead Market Congestion Credits to Power Suppliers ($) is a number representing the total NYISO amount credited to Power Suppliers for DAM Congestion for the given day.	Y
	Day Ttl NYISO DAM TCC Cong Cr ($)	Daily Total NYISO Day Ahead Market Transmission Congestion Contract Congestion Credits ($) is a number representing the total NYISO amount credited to Transmission Congestion Contract (TCC) Customers for DAM TCC Congestion for the given day.	Y
	Day Ttl NYISO DAM Cng Ch to LSE ($)	Daily Total NYISO Day Ahead Market LBMP Congestion Charges to Load Serving Entity ($) is a number representing the total NYISO amount charged to LSEs for DAM Congestion for the given day.	Y
	Day Ttl NYISO DAMLBMP CngCh :TC ($)	Daily Total NYISO Day Ahead Market LBMP Congestion Charge to Transaction Customers ($) is a number representing the total NYISO amount charged to Transaction Customers for DAM LBMP Congestion for the given day.	Y
	Day Ttl NYISO DAMTUC CngCh :TC ($)	Daily Total NYISO Day Ahead Market Transmission Usage Charges - Congestion Charges to Transaction Customers ($) is a number representing the total NYISO amount charged to Transaction Customers for DAM TUC Congestion for the given day.	Y
1013	Interface MW/Mile Coefficient	Interface MW-Mile Coefficient is a number representing a transmission owner's amount of transmission capacity per mile of transmission line.	Y

1.7.1.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Day Total NYISO DAM Resid Cong ($)	Daily Total NYISO Day Ahead Market Residual Congestion ($) is a number representing the total NYISO net DAM Residual Congestion amount for the day. This amount is allocated to TOs based upon their Interface MW-Mile Coefficient.	N

1.7.1.2.3 Results

Bill Code	Title	Business Description	DSS Value
1014	Day DAM Resid Cong Stlmnt :TO ($)	Daily Day Ahead Market Residual Congestion Settlement - Transmission Owner ($) is a number representing the DAM Residual Congestion settlement for a Transmission Owner (TO) for the given day. It is the TO's pro-rated share of DAM Residual Congestion charges based upon their Interface MW-Mile Coefficient.	Y

1.7.1.3 Eligibility

Transmission Owners will receive a charge or payment for DAM Congestion Residuals ($) if all of the following conditions exist:

- The Transmission Owner is responsible for transmission capacity of transmission line within the NYCA (Interface MW/Mile Coefficient > 0).
- There is a NYISO DAM Congestion Residual ($) for the given day (Day Total NYISO DAM Resid Cong ($) <> 0).

1.7.1.4 Settlement Algorithm

Day DAM Resid Cong Stlmnt :TO ($) is calculated as:

Day DAM Resid Cong Stlmnt :TO ($) =

Interface MW/Mile Coefficient * Day Total NYISO DAM Resid Cong ($)

Where:

Day Total NYISO DAM Resid Cong ($) =

Day Ttl NYISO DAM Cng Cr to PS ($) + Day Ttl NYISO DAM TCC Cong Cr ($) -

{Day Ttl NYISO DAM Cng Ch to LSE ($) + Day Ttl NYISO DAMLBMP CngCh :TC ($) + Day Ttl NYISO DAMTUC CngCh :TC ($)}

1.7.1.5 Additional Information

None

1.7.1.6 References

1.7.2 Transmission Owner - NTAC

1.7.2.1 Description

The Transmission Owner (TO) New York Power Authority (NYPA) Transmission Access Charge (NTAC) settlement ($) is a payment to NYPA intended to cover NYPA's transmission revenue requirements.

All NTAC charges made by NYISO are collected and paid to NYPA. Load Serving Entities and Transaction Customers (exports and wheel-throughs) receive this charge based on their real-time actual load or transaction schedule.

This settlement is the sum of all NTAC charges ($) collected from Load Serving Entities and Transaction Customers by NYISO. It is determined at the hourly-level and is applicable to the New York Power Authority (NYPA) only.

1.7.2.2 Required Data Elements

1.7.2.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr NTAC (NYPA) :LSE ($)	Hourly New York Power Authority (NYPA) Transmission Access Charges (NTAC) Load Serving Entities ($) is a number representing the total amount of NTAC charges assessed to load serving entities that will be paid to NYPA for the given hour. This data element only applies to NYPA.	N
	Hr NTAC (NYPA) :TC ($)	Hourly New York Power Authority (NYPA) Transmission Access Charges (NTAC) Transaction Customers ($) is a number representing the total amount of NTAC charges assessed to transaction customers that will be paid to NYPA for the given hour. This data element only applies to NYPA.	N

1.7.2.2.2 Intermediates

None

1.7.2.2.3 Results

Bill Code	Title	Business Description	DSS Value

Bill Code	Title	Business Description	DSS Value
1003	Hr NTAC (NYPA) ($)	Hourly New York Power Authority (NYPA) Transmission Access Charges (NTAC) ($) is a number representing the total amount of NTAC charges assessed to load serving entities and transaction customers that will be paid to NYPA for the given hour. This data element only applies to NYPA.	Y

1.7.2.3 Eligibility

The New York Power Authority will receive a payment for NYPA Transmission Access Charge ($) if any of the following conditions exist:

- NTAC charges were collected from Load Serving Entities during the hour (Hr NTAC (NYPA) :LSE ($) > 0).
- NTAC charges were collected from Transaction Customers during the hour (Hr NTAC (NYPA) :TC ($) > 0).

1.7.2.4 Settlement Algorithm

Hr NTAC (NYPA) ($) is calculated as:

Hr NTAC (NYPA) ($) =

Hr NTAC (NYPA) :LSE ($) + Hr NTAC (NYPA) :TC ($)

1.7.2.5 Additional Information

As of December 01, 2004, export and wheel-through transactions at the New England proxy bus are no longer subject to the New York Power Authority Transmission Access Charge.~~None~~

1.7.2.6 References

2 Miscellaneous

2.1 Appendix

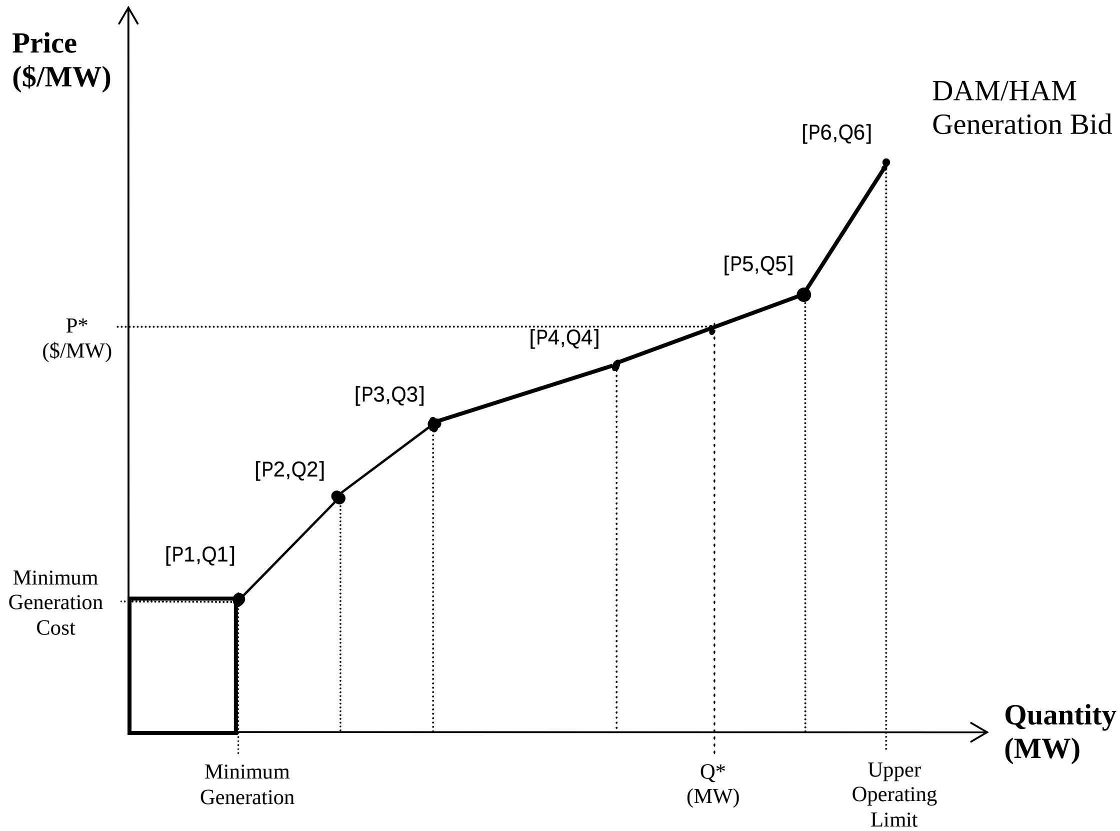
2.1.1 Appendix A

2.1.1.1 Figure 1.1 (Determine Price ($/MW) given Output (MW))

P* ($/MW) is determined by identifying the two DAM/HAM Generation Bid points that it's Q* (MW) falls between, and then using a linear model (slope of the line) to interpolate the corresponding generation bid price ($/MW) between the two nearest DAM/HAM Generation Bid points.

For example: In the below graphical example:

P* ($/MW) = (P5 ($/MW) - P4 ($/MW) ÷ Q5 (MW) - Q4 (MW)) * (Q* (MW) - Q4 (MW)) + P4 ($/MW)



Please note the following exceptions:

- If the generator does not have a corresponding DAM/HAM Generation Bid, then:

  P* ($/MW) = 0.

- If Q* (MW) is above the highest DAM/HAM Generation Bid quantity (i.e. Q6 (MW)), then:

  P* ($/MW) = Max{DAM/HAM Generation Bid price} (i.e. P6 ($/MW)).

- If Q* (MW) is below the lowest DAM/HAM Generation Bid quantity (i.e. Q1 (MW)), then:

  P* ($/MW) = Min{DAM/HAM Generation Bid price} (i.e. P1 ($/MW)).

- If Q* (MW) is above the lowest DAM/HAM Generation Bid quantity (i.e. Q1 (MW)), and is below the highest DAM/HAM Generation Bid quantity (i.e. Q6 (MW)), but the two nearest DAM/HAM Generation Bid quantities are equal (i.e. Q5 (MW) = Q4 (MW)), then:

  P* ($/MW) = higher DAM/HAM Generation Bid price ($/MW) of the two corresponding DAM/HAM Generation Bid points (i.e. P5 ($/MW)).

- If P* ($/MW) < 0, then:

  P* ($/MW) = 0.

NOTES:

- The above is true regardless of whether DAM/HAM Gen Bid Type Ind is “Curve” (C) or “Block” (B).

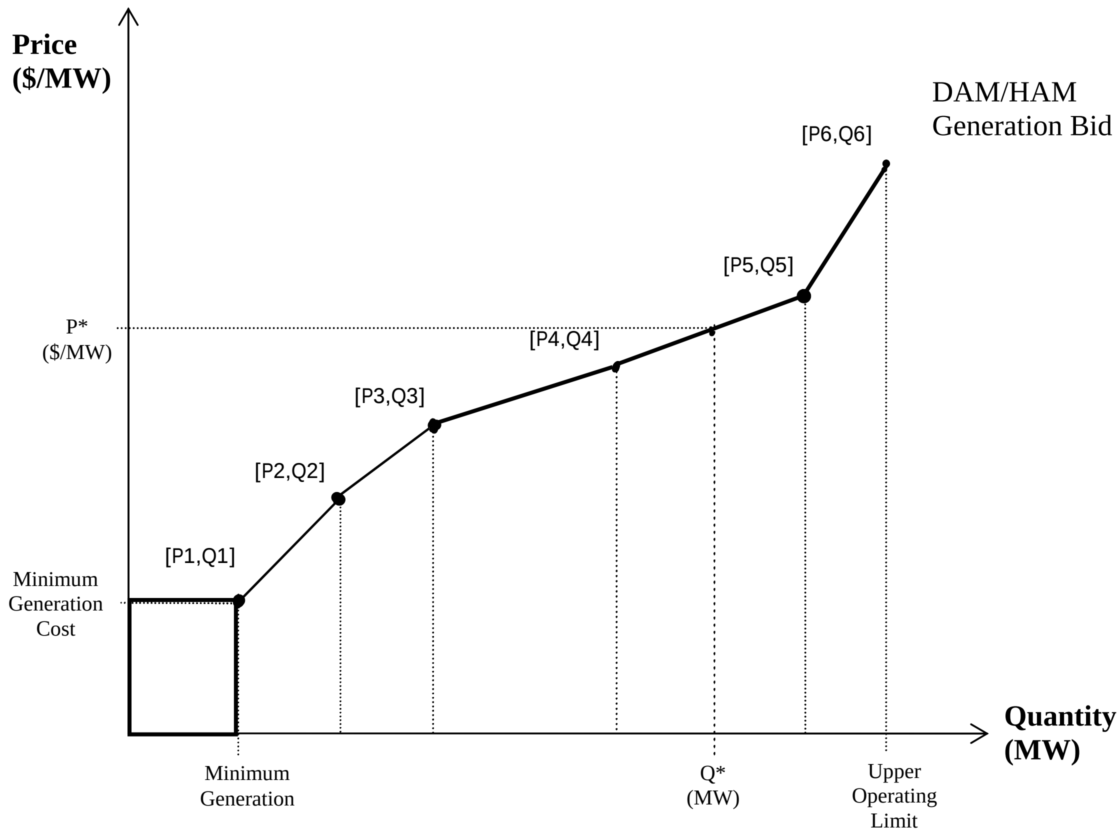
- The number of Price/Quantity dispatch segments is represented in the data elements Hr DAM/HAM Gen Bid Dispatch Seg :Curve or Hr DAM/HAM Gen Bid Dispatch Seg :Block, for each generator, for the given interval.

2.1.1.2 Figure 1.2 (Determine Output (MW) given Price ($/MW))

Q* (MW) is determined by identifying the two DAM/HAM Generation Bid points that it's P* ($/MW) falls between, and then using a linear model (slope of the line) to interpolate the output level (MW) between the two nearest DAM/HAM Generation Bid points.

For example: In the below graphical example:

Q* (MW) = (Q5 (MW) - Q4 (MW) ÷ P5 ($/MW) - P4 ($/MW)) * (P* ($/MW) - P4 ($/MW)) + Q4 (MW)



Please note the following exceptions:

- If the generator does not have a corresponding DAM/HAM Generation Bid, then:

  Q* (MW) = 0.

- If P* ($/MW) is above the highest DAM/HAM Generation Bid price (i.e. P6 ($/MW)), then:

  Q* (MW) = Max{DAM/HAM Generation Bid quantity (MW)} (i.e. Q6 (MW)).

- If P* ($/MW) is below the lowest DAM/HAM Generation Bid price (i.e. P1 ($/MW)), then:

Q* (MW) = Min{DAM/HAM Generation Bid quantity (MW)} (i.e. Q1 (MW)).

- If P* ($/MW) is above the lowest DAM/HAM Generation Bid price (i.e. P1 ($/MW)), and is below the highest DAM/HAM Generation Bid price (i.e. P6 ($/MW)), but the two nearest DAM/HAM Generation Bid prices are equal (i.e. P5 ($/MW) = P4 ($/MW)), then:

  Q* (MW) = higher DAM/HAM Generation Bid (MW) of the two corresponding DAM/HAM Generation Bid points (i.e. Q5 (MW)).

- If Q* (MW) < 0, then:

  Q* (MW) = 0.

- If Q* (MW) > SCD Gen Upper Op Limit (MW), then:

  Q* (MW) = SCD Gen Upper Op Limit (MW).

NOTES:

- The above is true regardless of whether DAM/HAM Gen Bid Type Ind is “Curve” (C) or “Block” (B).
- The number of Price/Quantity dispatch segments is represented in the data elements Hr DAM/HAM Gen Bid Dispatch Seg :Curve or Hr DAM/HAM Gen Bid Dispatch Seg :Block, for each generator, for the given interval.

2.1.1.3 Figure 1.3 (Determine Cost ($) between Outputs (MW))

2.1.1.3.1 Description

The Incremental Cost ($) under a Power Suppliers Generation Bid, is the sum of the incremental cost under either the DAM/HAM Generation Bid for each dispatch segment from the Lower Output Gen Level (MW) to the Upper Output Gen Level (MW). In this example, Q*_Lower (MW) and Q*_Upper (MW) respectively.

The area is calculated by summing each individual dispatch segment’s incremental cost ($) under the DAM/HAM Generation Bid between the two Megawatt output generation levels, where the incremental cost under the DAM/HAM Generation Bid for a given dispatch segment can be calculated as discussed within the algorithm section below.

2.1.1.3.2 Required Data Elements

2.1.1.3.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Hr DAM Gen Bid Type Ind	Day Ahead Market Generation Bid Type Indicator is a character representing the type of DAM generation bid submitted by the generator (block or curve).	Y
	Hr DAM Gen Bid Dispatch Seg :Block	Hourly Day Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given DAM generation bid (block generation bid type).	Y
	Hr DAM Gen Bid Dispatch Seg :Curve	Hourly Day Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given	Y

Bill Code	Title	Business Description	DSS Value
		DAM generation bid (curve generation bid type).	
	Hr DAM Gen Bid :Gen 1 (MW)	Day Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 2 (MW)	Day Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 3 (MW)	Day Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 4 (MW)	Day Ahead Market Generator Bid Generation #4 is a number representing the amount of generation (MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 5 (MW)	Day Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Gen 6 (MW)	Day Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 1 ($/MW)	Day Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 2 ($/MW)	Day Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 3 ($/MW)	Day Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 4 ($/MW)	Day Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr DAM Gen Bid :Price 5 ($/MW)	Day Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y

Bill Code	Title	Business Description	DSS Value
	Hr DAM Gen Bid :Price 6 ($/MW)	Day Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid Type Ind	Hour Ahead Market Generation Bid Type Indicator is a character representing the type of HAM generation bid submitted by the generator (block or curve).	Y
	Hr HAM Gen Bid Dispatch Seg :Block	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Block is a number representing the number of segments in the given HAM generation bid (block generation bid type).	Y
	Hr HAM Gen Bid Dispatch Seg :Curve	Hourly Hour Ahead Market Generation Bid Dispatch Segments - Curve is a number representing the number of segments in the given HAM generation bid (curve generation bid type).	Y
	Hr HAM Gen Bid :Gen 1 (MW)	Hour Ahead Market Generator Bid Generation #1 is a number representing the amount of generation (MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 2 (MW)	Hour Ahead Market Generator Bid Generation #2 is a number representing the amount of generation (MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 3 (MW)	Hour Ahead Market Generator Bid Generation #3 is a number representing the amount of generation (MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 4 (MW)	Hour Ahead Market Generator Bid Generation #4 is a number representing the amount of generation (MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 5 (MW)	Hour Ahead Market Generator Bid Generation #5 is a number representing the amount of generation (MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Gen 6 (MW)	Hour Ahead Market Generator Bid Generation #6 is a number representing the amount of generation (MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 1 ($/MW)	Hour Ahead Market Generator Bid Price #1 is a number representing the bid price of generation ($/MW) bid in the first block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 2 ($/MW)	Hour Ahead Market Generator Bid Price #2 is a number representing the bid price of generation ($/MW) bid in the second block during the interval, submitted by the Generator in a generation bid.	Y

Bill Code	Title	Business Description	DSS Value
	Hr HAM Gen Bid :Price 3 ($/MW)	Hour Ahead Market Generator Bid Price #3 is a number representing the bid price of generation ($/MW) bid in the third block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 4 ($/MW)	Hour Ahead Market Generator Bid Price #4 is a number representing the bid price of generation ($/MW) bid in the fourth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 5 ($/MW)	Hour Ahead Market Generator Bid Price #5 is a number representing the bid price of generation ($/MW) bid in the fifth block during the interval, submitted by the Generator in a generation bid.	Y
	Hr HAM Gen Bid :Price 6 ($/MW)	Hour Ahead Market Generator Bid Price #6 is a number representing the bid price of generation ($/MW) bid in the sixth block during the interval, submitted by the Generator in a generation bid.	Y
	Q*_Lower (MW)	Q*_Lower (MW) is a number that represents the lower output generation level (Lower Output Gen Level (MW)) on the DAM/HAM Generation Bid.	N
	Q*_Upper (MW)	Q*_Upper (MW) is a number that represents the upper output generation level (Upper Output Gen Level (MW)) on the DAM/HAM Generation Bid.	N

2.1.1.3.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	P*_Lower ($/MW)	P*_Lower ($/MW) is a number that represents the price associated to the lower output generation level (Lower Output Gen Level (MW)) on the DAM/HAM Generation Bid.	N
	P*_Upper ($/MW)	P*_Upper ($/MW) is a number that represents the price associated to the upper output generation level (Upper Output Gen Level (MW)) on the DAM/HAM Generation Bid.	N

2.1.1.3.2.3 Results

Bill Code	Title	Business Description	DSS Value
	Incremental Cost ($)	Incremental Cost ($) is a number that represents the sum of the cost under either the DAM/HAM Generation Bid for each dispatch segment from the Lower Output Gen Level (MW) to the Upper Output Gen Level (MW).	N

2.1.1.3.3 Eligibility

Power Supplier Generation Bid Incremental Cost ($) is eligible via the following Settlements:

- Day Ahead Market Bid Production Cost Guarantee, or
- Real-Time Bid Production Cost Guarantee, or
- Day Ahead Market Margin Assurance, or
- Voltage Support Service Lost Opportunity Cost, or
- DADRP Bid Cost Guarantee

2.1.1.3.4 Settlement Algorithm

Power Supplier Generation Bid Incremental Cost ($) is calculated as:

The Incremental Cost ($) under a Power Suppliers Generation Bid, is a number that represents the sum of the incremental cost under either the DAM/HAM Generation Bid for each dispatch segment from the Lower Output Gen Level (MW) to the Upper Output Gen Level (MW). The following example illustrates the calculation by summing each individual dispatch segment's incremental cost ($) under the DAM/HAM Generation Bid between the two Megawatt output generation levels. Note that the output levels can occur at any point along the Generation Bid between the highest and lowest bid points.

- *For a single segment, the Incremental Cost ($) is calculated as:*
  - Incremental Cost ($) = {Q4 (MW) - Q*_Lower (MW)} * {(P4 ($/MW) + P*_Lower ($/MW)) ÷ 2}

- *For multiple segments (as in the below graphical example), the Incremental Cost is calculated as:*
  - Incremental Cost ($) = Cost between segments 3&4 + Cost between segments 4&5
    - Cost between segments 3&4 = {Q4 (MW) - Q*_Lower (MW)} * {(P4 ($/MW) + P*_Lower ($/MW)) ÷ 2}
    - Cost between segments 4&5 = {Q*_Upper (MW) - Q4 (MW)} * {(P*_Upper ($/MW) + P4 ($/MW)) ÷ 2}

Where:

Q*_Lower (MW) = Lower Output Gen Level (MW)

Q*_Upper (MW) = Upper Output Gen Level (MW)

Q4 (MW) = Hr DAM/HAM Gen Bid :Gen 4 (MW)

P4 ($/MW) = Hr DAM/HAM Gen Bid :Price 4 ($/MW)

*And the corresponding Bid Prices (P*_Lower & P*_Upper) ($/MW) are calculated as:*

P*_Lower ($/MW) is the price on the generator's DAM/HAM Generation Bid corresponding to their Lower Output Gen Level (MW) for the given interval.

P*_Upper ($/MW) is the price on the generator's DAM/HAM Generation Bid corresponding to their Upper Output Gen Level (MW) for the given generator, for the given interval.

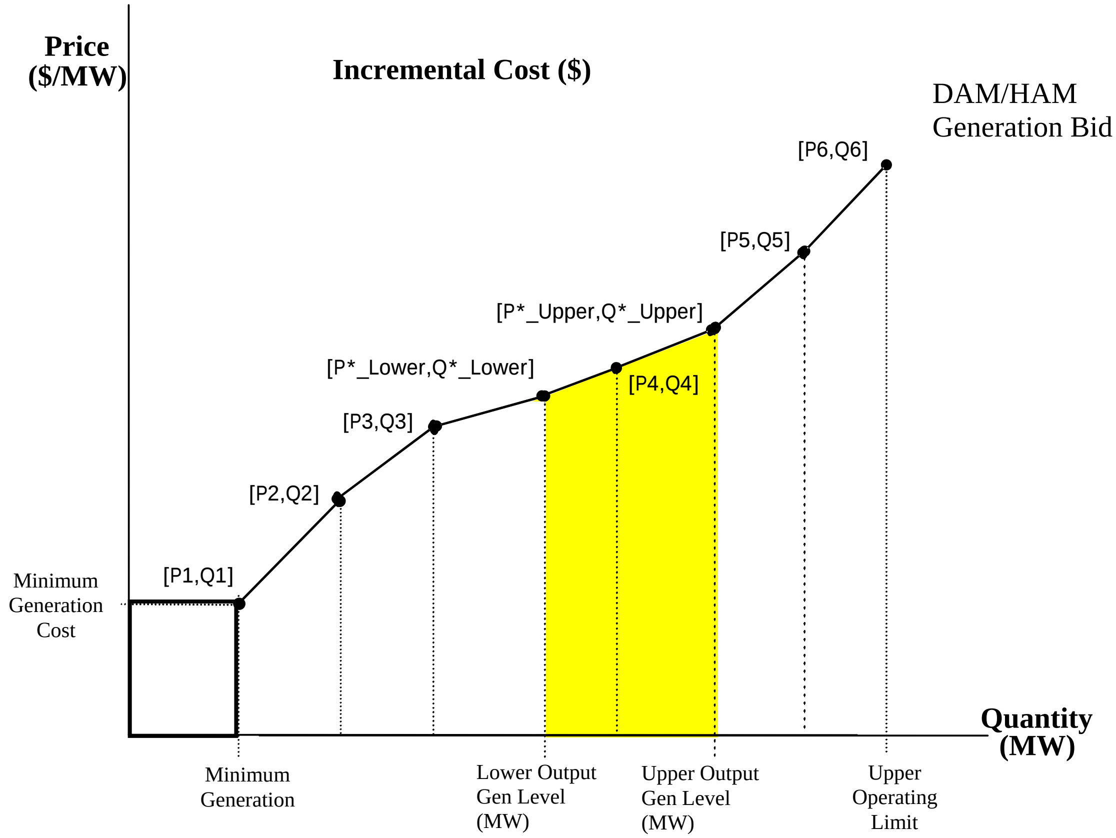
For example: In the below graphical example:

P*_Lower ($/MW) = {(P4 ($/MW) - P3 ($/MW)) ÷ (Q4 (MW) - Q3 (MW))} * (Q*_Lower (MW) - Q3 (MW)) + P3 ($/MW)

P*_Upper ($/MW) = {(P5 ($/MW) - P4 ($/MW)) ÷ (Q5 (MW) - Q4 (MW))}* (Q*_Upper (MW) - Q4 (MW)) + P4 ($/MW)

NOTE: P*_Lower ($/MW) and P*_Upper ($/MW) are determined by identifying the two DAM/HAM Generation Bid points that their Q*_Lower (MW) or Q*_Upper falls between, and then using a linear model (slope of the line) to interpolate the corresponding generation bid price ($/MW) between the two nearest DAM/HAM Generation Bid points.

- *Graphical Example:*



- The area in yellow (below the Power Suppliers DAM/HAM Generation Bid) within the above graphical example represents the amount of Incremental Cost ($) that a Market Participant would incur for having to produce the energy between the corresponding Lower and Upper Output Generation Level's (MW) for a given generator.

2.1.1.3.5 Additional Information

~~1.If Incremental Cost ($) < 0, then Incremental Cost ($) = 0.~~

~~2.~~1. The above is true regardless of whether Hr DAM/HAM Gen Bid Type Ind is "Curve" (C) or "Block" (B).

~~3.~~2. The number of Price/Quantity dispatch segments is represented in the data elements Hr DAM/HAM Gen Bid Dispatch Seg :Curve or Hr DAM/HAM Gen Bid Dispatch Seg :Block, for each generator, for the given interval.

~~4.~~3. Please note the following exceptions for calculating Bid Prices (P*_Lower & P*_Upper) ($/MW). Note that P* and Q* can apply to both lower and upper Price and Quantities.

- If the generator does not have a corresponding DAM/HAM Generation Bid, then:

  P* ($/MW) = 0.

- If Q* (MW) is above the highest DAM/HAM Generation Bid quantity (i.e. Q6 (MW)), then:

P* ($/MW) = Max{DAM/HAM Generation Bid price} (i.e. P6 ($/MW)).

NOTE: In the occurrence of this exception, the highest DAM/HAM Generation Bid price/quantity pair (i.e. P6 ($/MW), Q6 (MW)) is then replaced by P* ($/MW), Q* (MW).

- If Q* (MW) is below the lowest DAM/HAM Generation Bid quantity (i.e. Q1 (MW)), then:

  P* ($/MW) = Min{DAM/HAM Generation Bid price} (i.e. P1 ($/MW)).

- If Q* (MW) is above the lowest DAM/HAM Generation Bid quantity (i.e. Q1 (MW)), and is below the highest DAM/HAM Generation Bid quantity (i.e. Q6 (MW)), but the two nearest DAM/HAM Generation Bid quantities are equal (i.e. Q5 (MW) = Q4 (MW)), then:

  P* ($/MW) = higher DAM/HAM Generation Bid price ($/MW) of the two corresponding DAM/HAM Generation Bid points (i.e. P5 ($/MW)).

- If P* ($/MW) < 0, then:

  P* ($/MW) = 0.

2.1.1.3.6 References

2.1.1.4 Figure 1.4 (Determine Cost ($) between Minimum Generation (MW) and Output (MW))

Average Energy Bid ($) is the determination of the cost under the Generation Bid, including minimum generation costs and the incremental costs from minimum generation up to SCD 10NSync LOC (MW), divided by SCD 10NSync LOC (MW).

- *Where minimum generation costs are calculated as:*

  Average Energy Bid ($) =

  (Gen Bid :Min Gen (MW) * Gen Bid :Min Gen Price ($/MW)) ÷ SCD 10NSync LOC (MW)

  If Q1 >= Gen Bid :Min Gen (MW) and Q1 <= SCD 10NSync LOC (MW), then:

  If P1 < 0, then P1 = 0

- *And incremental costs are calculated as, up to and including SCD 10NSync LOC (MW):*

  Average Energy Bid ($) =

  Average Energy Bid ($) + {(Q1 - Gen Bid :Min Gen (MW)) * (P1 + Gen Bid :Min Gen Price ($/MW)} ÷ (2 * SCD 10NSync LOC (MW))

Incremental costs are calculated above by totaling the cost under the curve for each dispatch segment from Gen Bid :Min Gen (MW) up to SCD 10NSync LOC (MW).

NOTES:

- The above is true regardless of whether DAM/HAM Gen Bid Type Ind is “Curve” (C) or “Block” (B).
- The number of Price/Quantity dispatch segments is represented in the data elements Hr DAM/HAM Gen Bid Dispatch Seg :Curve or Hr DAM/HAM Gen Bid Dispatch Seg :Block, for each generator, for the given interval.

2.1.1.5 Figure 1.5 (Calculation of Real-Time Actual Load (MW))

2.1.1.5.1 Description

The NYISO does not meter energy withdrawals by LSE’s in real time (i.e. real-time actual load). The organizations responsible for maintaining billing quality metering for NYCA points of withdrawal are called Meter Authorities. The Meter Authorities maintain metering systems to measure energy flow and provide this data for most NYCA points of withdrawal. Since billing quality metering data is not readily available for all NYCA points of withdrawal for settlement immediately following a particular day’s transactions, the NYISO allocates instantaneous integrated sub-zonal load to all LSE’s within each sub-zone, based upon the ratio of the LSEs’ hourly bus forecasts to the total sub-zone hourly forecast. LSE’s may update their bus forecasts for the preceding day by noon the next day, providing a mechanism for entities to be settled using more accurate withdrawal data, if available.

LSE’s that have billing quality metering at their respective points of withdrawal may be modeled in the billing system so that their real time load is based upon their updated forecasts versus the ratio share of sub-zonal load methodology previous described. Those points designated as having billing quality metering systems that provide hourly billing quality withdrawal data the day after the day of operation are excluded from the sub-zonal load allocation process, such that only the non-metered load is allocated.

Settlements that use the sub-zonal load computed by the NYISO are subsequently adjusted to values based on revenue quality metering, when available/received from Meter Authorities. The NYISO has established a settlement adjustment process that provides for the adjustment of estimated/allocated withdrawals to billing quality metered values. Currently, the settlement adjustment process entails four opportunities to adjust withdrawal amounts. The Meter Authority responsible for providing billing quality metering submits hourly metered withdrawals at the LSE bus level. These hourly values are backcasted to the integrated instantaneous load profile of that LSE bus, adjusting the hourly withdrawal to the metered value supplied by the Meter Authority.

2.1.1.5.2 Required Data Elements

2.1.1.5.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Load Bus PTID	Load Bus PTID is a number representing the unique point identifier for a load bus.	Y
	Hr DAM Load Bid Frcst Load (MW)	Day Ahead Market Load Bid Forecast Load (MW) is a number representing the total forecasted load during the ~~interval~~hour, submitted by the LSE in a load bid	Y
	Hr Billing Meter Load (MWh)	Billing Meter Load (MWh) is a number representing the hourly metered load determined by the meter authority (transmission owner)	Y

Bill Code	Title	Business Description	DSS Value
	Hr DAM Subzone Frcst Load (MW)	Day Ahead Subzone Forecast Load (MW) is a number representing the total amount of forecasted load for a subzone. This is the sum of load bid forecast load for all load buses within the subzone; submitted by LSE's on a load bid	Y
	Hr Subzone Billing Meter Load (MWh)	Hourly Subzone Billing Meter Load (MWh) is a number representing the the total amount of hourly metered load determined by the meter authority (transmission owner) for a subzone. This is the sum of Billing Meter Load (MWh) for all load buses within the subzone.	N
	Hr DAM Subzone Frcst Fixed Load (MW)	Hourly Day Ahead Market Subzone Forecast Fixed Load (MW) is a number representing the total amount of forecasted load associated with load buses that are not required to participate in the allocation of NYISO unaccounted for energy for a subzone.	N
	Hr SZ Billing Meter Fixed Load (MWh)	Hourly Subzone Billing Meter Fixed Load (MWh) is a number representing the total amount of hourly metered load determined by the meter authority (transmission owner) associated with load buses that are not required to participate in the allocation of NYISO unaccounted for energy for a subzone.	N
	SCD Total Subzone Load (MW)	Total Sub-Zone Load (MW) is a number representing the total amount of load in a given sub-zone for the interval	Y
	Hr Use in Unaccntd for Energy Flag	Hourly Use in Unaccounted for Energy Flag is a character representing whether or not the given load bus is required to participate in the allocation of NYISO unaccounted for energy.	N

2.1.1.5.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Total Subzone Load (MWh)	Hourly Total SubZone Load (MWh) is a number representing the total amount of real-time actual load, time-weighted and summed up from the corresponding SCD-Intervals, in a given subzone for the hour.	N
	Hr Total Adj Input Load :Load Bus (MW)	Hourly Total Adjusted Input Load - Load Bus (MW) is a number representing the total amount of real-time actual load (MW) for the given load bus after an allocation of NYISO’s unaccounted for energy (for the appropriate load buses), for the given hour.	N
	Hr Total Input Load :Load Bus (MW)	Hourly Total Input Load - Load Bus (MW) is a number representing the total amount of load used	N

Bill Code	Title	Business Description	DSS Value
		to calculate a load bus' real time actual load (MW) for the given load bus. This data element will either contain the DAM Load Bid Forecasted Load (MW) or the actual Metered Load (MW) reported by the transmission owners.	
	Hr Total Subzone UAE Input Load (MW)	Hourly Total Subzone Unaccounted for Energy Input Load (MW) is a number representing the total amount of NYISO unaccounted for energy (MW) used to calculate a load bus' real time actual load (MW) for the given subzone. This data element will contain the amount of actual RT total subzone load net of either DAM SZ Load Bid Forecasted Load (MW) or the actual subzone Metered Load (MW) reported by the transmission owners.	N
	Hr Total SZ UAE Var Input Load (MW)	Hourly Total Subzone Unaccounted for Energy (UAE) Variable Input Load (MW) is a number representing the total amount of NYISO load associated with load buses that are required to participate in the allocation of NYISO unaccounted for energy, used to calculate a load bus' real time actual load (MW) for the given subzone This data element will either contain the DAM Load Bid Forecasted Load (MW) or the actual Metered Load (MW) reported by the transmission owners corresponding to the apporpriate load buses.	N
	Hr Total Subzone Input Load (MW)	Hourly Total Subzone Input Load (MW) is a number representing the total amount of NYISO load used to calculate a load bus' real time actual load (MW) for the given subzone. This data element will either contain the DAM Load Bid Forecasted Load (MW) or the actual Metered Load (MW) reported by the transmission owners for the given subzone.	N
	Hr Total SZ UAE Fixed Input Load (MW)	Hourly Total Subzone Unaccounted for Energy (UAE) Fixed Input Load (MW) is a number representing the total amount of NYISO load associated with load buses that are not required to participate in the allocation of NYISO unaccounted for energy, used to calculate a load bus' real time actual load (MW) for the given subzone This data element will either contain the DAM Load Bid Forecasted Load (MW) or the actual Metered Load (MW) reported by the transmission owners corresponding to the apporpriate load buses.	N

2.1.1.5.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD RT Actual Load (MW)	Real Time Actual Load (MW) is a number representing the total real-time actual load for a given load bus for a given SCD interval	Y

2.1.1.5.3 Eligibility

SCD RT Actual Load (MW) is calculated for each load bus located within the New York Control Area (NYCA) in which a Load Serving Entity serves load in the given SCD-Interval.

2.1.1.5.4 Settlement Algorithm

SCD RT Actual Load (MW) is calculated as:

SCD RT Actual Load (MW) =

SCD Total Subzone Load (MW) * (Hr Total Adj Input Load :Load Bus (MW) ÷ Hr Total Subzone Load (MWh))

Where:

If the LSE's Load Bus is required to participate in the allocation of NYISO's Unaccounted for Energy (MW) (Hr Use in Unaccntd for Energy Flag = "Y"):

Hr Total Adj Input Load :Load Bus (MW) =

Hr Total Input Load :Load Bus (MW)

+ {Hr Total Subzone UAE Input Load (MW) * (Hr Total Input Load – Load Bus (MW) ~~{Hr Total Input Load :Load Bus (MW) * (Hr Total Subzone UAE Input Load (MW)~~ ÷ Hr Total SZ UAE Var Input Load (MW))}

Else (NOT required to participate in the allocation of NYISO's Unaccounted for Energy (MW)):

Hr Total Adj Input Load :Load Bus (MW) =

Hr Total Input Load :Load Bus (MW)

Where:

Hr Total Subzone UAE Input Load (MW) =

Hr Total Subzone Load (MWh) - Hr Total Subzone Input Load (MW)

Hr Total SZ UAE Var Input Load (MW) =

Hr Total Subzone Input Load (MW) - Hr Total SZ UAE Fixed Input Load (MW)

PLEASE NOTE: The following data elements will either be based on the Load Bus' or Subzone's Hourly Total Forecasted Load (from DAM Load Bids) or its Total RT Metered Load (reported by the Metering Authority / Transmission Owner), based on data availability at the time of calculation (forecasted load is used when metered load data is not available):

- Hr Total Adj Input Load :Load Bus (MW)
- Hr Total SZ UAE Var Input Load (MW)
- Hr Total Input Load :Load Bus (MW), will either be:
    - Hr DAM Load Bid Frcst Load (MW) or
    - Hr Billing Meter Load (MWh)
- Hr Total Subzone Input Load (MW), will either be:
    - Hr DAM Subzone Frcst Load (MW) or
    - Hr Subzone Billing Meter Load (MWh)
- Hr Total SZ UAE Fixed Input Load (MW), will either be:
    - Hr DAM Subzone Frcst Fixed Load (MW) or
    - Hr SZ Billing Meter Fixed Load (MWh)

Where:

Hr Total Subzone Load (MWh) =

∑ SCD Total Subzone Load (MW) * {SCD Interval Seconds * 3,600} for all SCD-Intervals in the given hour.

2.1.1.5.5 Additional Information

Gilboa Pump Load Buses:

Gilboa pumps are settled at the generator, and therefore their corresponding load buses are excluded in the above calculation of Real-Time Actual Load. More specifically, Gilboa Load Bus PTID's are excluded from hourly sub-zone and billing meter load values.

2.1.1.5.6 References

2.1.1.6 Figure 1.6 (Calculation of Generation Adjusted Energy (MW))

2.1.1.6.1 Description

Generation Adjusted Energy (MW) is NYISO's calculated amount of generation output per SCD-Interval, which is used as the physical output of the generator for all Power Supplier related settlements.

The NYISO accepts metered generation readings (Hr Gen Meter Energy (MWh)) from individual Metering Authorities (Transmission Owners) at the hourly level, and calculates a SCD-Interval level average actual generation value (SCD Gen Avg Actual Energy (MW)) from the 6-second-level operational data coming from NYISO's SCADA system. These two values are then used to determine a generator's adjusted energy (MW) by adjusting its average actual energy (MW) so that the energy generated over the hour equals the generator's reported metered energy amount (MWh). This adjustment also has the affect of profiling the hourly metered energy over the SCD-Interval within the hour.

Therefore, a generator's adjusted energy (SCD Gen Adjusted Energy (MW)) is its SCD-Interval average actual energy (MW) multiplied by the ratio of its corresponding metered energy to its hourly average actual energy.

2.1.1.6.2 Required Data Elements

2.1.1.6.2.1 Determinants

Bill Code	Title	Business Description	DSS Value
	Gen PTID	Generator PTID is a number representing the unique point identifier for a generator.	Y
	Hr Gen Meter Energy (MWh)	Generator Metered Energy (MWh) is a number representing the amount of settlement-quality metered generation for the hour for the given generator. This value is provided by the individual transmission owners and is allocated to the SCD level by the NYISO using SCD Gen Avg Actual Energy (MW)	Y
	SCD Gen Avg Actual Energy (MW)	Generator Average Actual Energy (MW) is a number representing average actual output of a generator over the SCD interval. It is the average of the 6-second-level data coming from the NYISO SCADA system. The data element is used along with the Hourly Generator Meter Energy (MWh) as provided by the Transmission Owner to determine Generator Adjusted Energy (MW).	Y
	SCD Interval Seconds	SCD Interval Seconds is a number representing the number of seconds in the SCD interval	Y

2.1.1.6.2.2 Intermediates

Bill Code	Title	Business Description	DSS Value
	Hr Gen Avg Actual Energy (MWh)	Hourly Gen Average Actual Energy (MWh) is a number representing the total amount of actual generator output integrated over the SCD interval and summed up to the hourly level. Data used is from the NYISO SCADA systems (PTS).	Y

2.1.1.6.2.3 Results

Bill Code	Title	Business Description	DSS Value
	SCD Gen Adjusted Energy (MW)	Generator Adjusted Energy (MW) is a number representing the BAS-determined output of the generator for the interval. It is calculated by allocating Hourly Gen Meter Energy (MWh) (provided by the Transmission Owners) to the SCD level based upon Average Actual (MW) (captured for NYISO SCADA and integrated by PTS).	Y

2.1.1.6.3 Eligibility

SCD Gen Adjusted Energy (MW) is calculated for all Generators located within the New York Control Area (NYCA) that are assigned to an organization.

2.1.1.6.4 Settlement Algorithm

SCD Gen Adjusted Energy (MW) is calculated as follows:

SCD Gen Adjusted Energy (MW) =

SCD Gen Avg Actual Energy (MW) * {Hr Gen Meter Energy (MWh) ÷ Hr Gen Avg Actual Energy (MWh)}

Where:

Hr Gen Avg Actual Energy (MWh) =

∑ SCD Gen Avg Actual Energy (MW) * {SCD Interval Seconds ÷ 3,600 Seconds} for all SCD-Intervals in the given hour.

Please note the following exceptions:

1. If no hourly integrated generator average actual energy (MWh) is available or equals zero (Hr Gen Avg Actual Energy (MWh) is "NULL" or "0"):

   SCD Gen Adjusted Energy (MW) = Hr Gen Meter Energy (MWh)

2. The Generator has an hourly integrated generator average actual energy (MWh) that is negative (Hr Gen Avg Actual Energy (MWh) < 0), and the generator is NOT a Gilboa generator (Gen PTID <> 23599, 23756, 23757, 23758, or 23759):

   SCD Gen Adjusted Energy (MW) = Hr Gen Meter Energy (MWh) for all SCD-Intervals within a given hour.

3. If no hourly metered generator energy (MWh) is available for the Generator (Hr Gen Meter Energy (MWh) is "NULL"), the hourly adjustment ratio is set to one:

   Hr Gen Meter Energy (MWh) ÷ Hr Gen Avg Actual Energy (MWh) = 1

2.1.1.6.5 Additional Information

Please note the following algorithms for the Gilboa Generators (Gen PTID's = 23599, 23756, 23757, 23758, and 23759):

A. *If the Gilboa Generator is pumping during the Hour (Hr Gen Meter Energy (MWh) is negative):*

SCD Gen Adjusted Energy (MW) =

Min(SCD Gen Avg Actual Energy (MW), 0) * {Hr Gen Meter Energy (MWh) ÷ Hr Gen Avg Actual Energy (MWh)}

Where:

Hr Gen Avg Actual Energy (MWh) =

∑ Min(SCD Gen Avg Actual Energy (MW), 0) * {SCD Interval Seconds ÷ 3,600 Seconds} for all SCD-Intervals in the given hour.

B. *If the Gilboa Generator is generating during the Hour (Hr Gen Meter Energy (MWh) is positive):*

SCD Gen Adjusted Energy (MW) =

Max(SCD Gen Avg Actual Energy (MW), 0) * {Hr Gen Meter Energy (MWh) ÷ Hr Gen Avg Actual Energy (MWh)}

Where:

Hr Gen Avg Actual Energy (MWh) =

∑ Max(SCD Gen Avg Actual Energy (MW), 0) * {SCD Interval Seconds ÷ 3,600 Seconds} for all SCD-Intervals in the given hour.

NOTES:

- Exceptions #1 and #3 above apply in cases where Gilboa generation data is not available.
- For Gilboa Generators changing status in the middle of an hour, the status at the end of the hour (either generating or pumping) would be applied to all SCD-Intervals within the hour.

Grouped Generator Scenarios (Gen PTID's = 24038, 24034, 24033, 24032, and 24031):

Hr Gen Meter Energy (MWh) is calculated as:

∑ Hr Gen Meter Energy (MWh) for all generators that are part of the Grouped Generator scenario for the given hour.

SCD Gen Avg Actual Energy (MW) is calculated as (Prior to January 9, 2001):

∑ SCD Gen Avg Actual Energy (MW) for all generators that are part of the Grouped Generator scenario for the given SCD-Interval.

NOTE: After January 9, 2001 SCD Gen Avg Actual Energy (MW) is calculated and submitted to NYISO's Billing & Accounting System (BAS) for the Group Generator as opposed to the individual generators of the group.

2.1.1.6.6 References

2.2 Change Control Log

Date:	Initials:	Description of Change:
10/21/2003	TMR	Creation of B&A Manual_v1.0
01/26/2004	TMR	Completed B&A Manual_v1.19 (1st Complete Draft)
01/29/2004	TMR	Added Appendix A to B&A Manual_v1.20
02/09/2004	TMR	Commenced updating B&A Manual_v1.21 as a result of Subject Matter Expert review.
03/11/2004	TMR	Deleted ELR DAM Margin Assurance :LRR from Power Supplier and Load Serving Entity section. Hr Out of Merit Type Desc = "TO ENERGY LIMITED RES" (ID = 22) no longer valid.
03/11/2004	TMR	Combined DAM Margin Assurance :LRR with DAM Margin Assurance.
06/08/2004	TMR	Completed B&A Manual_v1.24
08/26/2004	TMR	Completed B&A Manual_v1.27
12/30/2004	TMR	Completed B&A Manual_v1.28