NYISO Congestion Reduction Proposal

Prepared for

NYISO Market Structures

Working Group

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LECG
ECONOMICS
FINANCE

CONGESTION REDUCTION Overview

The NYISO proposal is an integrated approach to address congestion shortfall arising from changes in the transmission facilities modeled in TCC auctions, monthly reconfiguration auctions and the DAM. It consists of five related elements:

- "Make Whole Approach" to determine charges to TOs for costs attributable to facility outages.
- Application of Make Whole Approach to determine revenues to TOs for facilities placed back in service.
- New flow-based method to allocate residual auction revenues to TOs.
- Modified method to allocate residual congestion rents from DAM settlements to TOs.
- Commitment to work with MPs to identify ways of reducing overall level of congestion rent shortfalls.

- Under the Make Whole Approach, a shortfall cost is calculated for each facility outage modeled in the DAM or in a TCC auction, and charged to the TO that owns the facility.
- Conversely, for facilities that were modeled as out of service in monthly auctions and subsequently returned to service in the DAM, a share of the DAM congestion rent revenue attributable to that facility is calculated and paid to the TO that owns the facility.

- The same approach will be used to attribute a share of the monthly reconfiguration auction residual revenue to facilities that are modeled as out of service in the capability period auction, but subsequently returned to service in the monthly reconfiguration auction.
- A flow-based method will allocate residual auction revenue accruing in the capability period auctions and monthly reconfiguration auctions.
  - This differs from the IMWM method in that revenue is allocated to all facilities on a flow basis, not just to facilities that contribute to the NYISO's closed transmission interfaces.

- The flow-based method also allocates to the TOs, in a separate step, the congestion rent shortfalls and revenues that have been directly assigned using the Make Whole Approach in the TCC reconfiguration and capability period auctions.
  - If a facility is out in the auction, the shortfall cost that the TO pays is allocated to all TOs using the flow-based method.
  - Conversely, if a facility is returned to service in the reconfiguration auction, the allocation of revenue the TO receives will be charged to the TOs using the flow-based method.

- The monthly residual congestion rent shortfalls/surpluses for the DAM will be allocated using a modification of the current methodology.
  - Revised calculation of the allocation factors to include the imputed value of all outstanding TCCs and Grandfathered ETAs for the month.

The advantages of the NYISO proposal include:

- Improves allocation of congestion rent shortfalls from facility outages.
- Maintains full funding of TCCs.
- Uses consistent methodology (Make Whole Approach) to attribute shortfalls to facilities out of service, and revenues to facilities returning to service, in the DAM and reconfiguration auctions.
- Improves the allocation of revenues from TCC auctions under flow-based method, relative to the IMWM currently used.

The advantages of the NYISO proposal include:

- Addresses MP concerns that intra-zonal facilities are not treated consistently in the Feb. ’03 Management Committee proposal.
- Can be implemented on approximately the same timetable as the National Grid proposal.

Make Whole Approach

The Make Whole Approach is a reworking and simplification of the concepts introduced in January 2003 by LECG. It is used to assign congestion rent costs to facilities that are out of service in the:

- DAM
- Reconfiguration auction
- Capability period auction

Shortfall in DAM

These steps describe the methodology to calculate the shortfall costs arising from facility outages in an hour of the DAM:

1. Identify binding constraints in an hour of the DAM (i.e., positive shadow price).
2. Calculate flows on each binding constraint for DAM schedules for that hour based on actual grid model.
3. Calculate flows on each binding constraint using the final set of outstanding TCCs (and grandfathered rights).
4. Subtract (3) from (2) to determine if scheduled flow is less than that for outstanding TCCs. If so, there is a congestion rent shortfall for that constraint.
5. Calculate shortfall cost by multiplying the MW amount of overload by the shadow price of the constraint.

Shortfall in DAM

Once the congestion rent shortfall has been calculated for each binding constraint, it will be allocated to the TO with facilities out of service. NYISO staff will construct a table showing binding constraints that will appear when each outage occurs.

- If none of the constraints associated with a particular outage are binding in the DAM, no shortfall cost will be charged to the TO.
- A TO will be charged the shortfall costs for each constraint for which it is the sole owner with one or more facilities out of service affecting that constraint.
- If one or more TOs have multiple outages that correspond to the same constraint, they will be allocated the costs in proportion to the overloads that each outage causes individually.

CONGESTION REDUCTION Shortfall in DAM

Summary of Method for Attributing Costs of Transmission Outages	
Time Period	Make Whole Approach
Day-Ahead Market	
Transmission Out of Service that was not out in Reconfiguration Auction	Calculate DA flows on DA binding constraints from: 1. DA schedules (includes grandfathered schedules), 2. All TCCs valid after prior monthly reconfiguration auction, plus grandfathered schedules. Calculate MW overload from TCCs on each binding constraint; if there is an overload, estimate cost by multiplying by DA shadow price. Map transmission outages modeled DA, but not in the monthly auction, to overloaded constraints.

CONGESTION REDUCTION Shortfall in Reconfig. Auction

Summary of Method for Attributing Costs of Transmission Outages	
Time Period	Make Whole Approach
Day-Ahead Market	
Transmission Out of Service that was not out in Reconfiguration Auction	Calculate DA flows on DA binding constraints from: 1. DA schedules (includes grandfathered schedules), 2. All TCCs valid after prior monthly reconfiguration auction, plus grandfathered schedules. Calculate MW overload from TCCs on each binding constraint; if there is an overload, estimate cost by multiplying by DA shadow price. Map transmission outages modeled DA, but not in the monthly auction, to overloaded constraints.
Reconfiguration Auction	
Transmission Out of Service that was not out in Capability Period Auction	Calculate flows on constraints binding in monthly auction, using shift factors for monthly grid configuration, from: 1. All TCCs valid following monthly auction, 2. All TCCs valid after prior capability period auction. Calculate MW overload from capability period TCCs on each binding constraint; if there is an overload, estimate cost by multiplying by monthly auction shadow price. Map transmission outages modeled in the monthly auction, but not in the capability period auction, to the overloaded constraints.

CONGESTION REDUCTION Shortfall in Capability Auction

Summary of Method for Attributing Costs of Transmission Outages	
Time Period	Make Whole Approach
Day-Ahead Market	
Transmission Out of Service that was not out in Reconfiguration Auction	Calculate DA flows on DA binding constraints from: 1. DA schedules (includes grandfathered schedules), 2. All TCCs valid after prior monthly reconfiguration auction, plus grandfathered schedules. Calculate MW overload from TCCs on each binding constraint; if there is an overload, estimate cost by multiplying by DA shadow price. Map transmission outages modeled DA, but not in the monthly auction, to overloaded constraints.
Reconfiguration Auction	
Transmission Out of Service that was not out in Capability Period Auction	Calculate flows on constraints binding in monthly auction, using shift factors for monthly grid configuration, from: 1. All TCCs valid following monthly auction, 2. All TCCs valid after prior capability period auction. Calculate MW overload from capability period TCCs on each binding constraint; if there is an overload, estimate cost by multiplying by monthly auction shadow price. Map transmission outages modeled in the monthly auction, but not in the capability period auction, to the overloaded constraints.
Capability Period Auction	
Transmission Out of Service	Run a “but for” capability period auction with all facilities in service. Calculate flows on constraints binding in actual capability period auction, using shift factors for actual capability period auction, from: 1. All TCCs valid following actual capability period auction 2. All TCCs valid after “but for” capability period auction. Calculate MW overload from “but for” TCCs on each binding constraint; if there is an overload, estimate cost by multiplying by capability period auction shadow price. Map transmission outages modeled in the capability period auction to overloaded constraints.

CONGESTION REDUCTION — Surplus in DAM

The Make Whole Approach is also used to determine the revenue that will be assigned to a TO whose facility is placed back in service in the DAM, in a manner similar to that of calculating the shortfall:

1. Identify constraints binding in an hour of the DAM.
2. Calculate flows on each constraint for the DAM schedules based on actual grid model.
3. Calculate flows on each binding constraint using the final set of outstanding TCCs (and grandfathered rights).
4. Subtract (3) from (2) to determine if scheduled flow is greater than that for outstanding TCCs. If so, there are excess congestion rents for that constraint.
5. Calculate revenue surplus by multiplying the MW amount of additional flows by the shadow price of the constraint.

Surplus in DAM

Once the surplus has been calculated for each binding constraint, it will be allocated to the TO with facilities placed back in service. NYISO staff will construct a table showing binding constraints that will appear in the DAM when each outage occurs, and are therefore relieved when the facility comes back in service.

- A TO will be allocated the surplus for each constraint for which it is the sole owner with one or more facilities back in service affecting that constraint.
- If one or more TOs have multiple facilities back in service that correspond to the same constraint, they will be allocated the surplus in proportion to the effect on flows that each facility coming back in service has individually.

CONGESTION REDUCTION Surplus in DAM

Summary of Method for Attributing Revenue to Transmission Returned to Service	
Time Period	Make Whole Approach
Day-Ahead Market	
Transmission Returned to Service that was Out of Service in Reconfiguration Auction	Calculate DA flows on DA binding constraints from: 1. DA schedules (includes grandfathered schedules), 2. All TCCs valid after prior monthly reconfiguration auction, plus grandfathered schedules. Calculate extra DA MWs flowing on each binding constraint; if there is excess, estimate congestion rent surplus by multiplying by DA shadow price. Map transmission returned to service in the DA market, but out-of-service in the monthly auction, to constraints accruing a DA congestion rent surplus.

CONGESTION REDUCTION Surplus in DAM

Example:

Monthly TCC Auction	DAM
Y-49 O/S	Y-49 I/S
TCCs sold such that Y-50 binds pre-contingency	Y-49 flow is 600 MW
	Y-50 flow binds pre-contingency at 650 MW

Calculation of DAM Surplus

Impose TCCs on DAM network (Y-49 I/S)

Y-49 flow is 600 MW

Y-50 flow is 100 MW

Overload on binding constraint Y-50 pre-contingency = 650 MW – 100 MW = 550 MW

The 550 MW increase on Y-50 represents the increased congestion paid in the DAM due to the I/S of Y-49

Surplus assigned to Y-49 = SP * (550 MW), where SP is the shadow price of Y-50 binding pre-contingency in the DAM

CONGESTION REDUCTION Surplus in Reconfig. Auction

Summary of Method for Attributing Revenue to Transmission Returned to Service	
Time Period	Make Whole Approach
Day-Ahead Market	
Transmission Returned to Service that was Out of Service in Reconfiguration Auction	Calculate DA flows on DA binding constraints from: 1. DA schedules (includes grandfathered schedules), 2. All TCCs valid after prior monthly reconfiguration auction, plus grandfathered schedules. Calculate extra DA MWs flowing on each binding constraint; if there is excess, estimate congestion rent surplus by multiplying by DA shadow price. Map transmission returned to service in the DA market, but out-of-service in the monthly auction, to constraints accruing a DA congestion rent surplus.
Reconfiguration Auction	
Transmission Returned to Service that was Out of Service in Capability Period Auction	Calculate flows on constraints binding in monthly auction, using shift factors for monthly grid configuration, from: 1. All TCCs valid following monthly auction, 2. All TCCs valid after prior capability period auction. Calculate extra monthly TCC MWs flowing on each binding constraint; if there is excess, estimate extra auction revenue by multiplying by actual auction shadow price. Map transmission returned to service in the monthly auction, but out-of-service in the capability period auction, to the constraints earning extra monthly auction revenue.

Residual Revenues

The NYISO has developed a method to assign each facility within the NYCA a flow-based value derived from the market-clearing prices and MW flows associated with the TCCs sold in an auction.

- Summing these flow-based values over all facilities owned by a TO provides a total flow-based value for that TO.
  - The difference between the MW flows over a facility after the auction and the MW flows prior to the auction (the "Initial Condition") will be calculated.
  - This difference, multiplied by the difference in nodal prices from the auction, will be the value assigned to that facility.
- The flow-based values will be used to develop allocation factors to distribute the residual revenue from an auction.

This is analogous to the process used to unbundle TCC awards at the end of an auction.

CONGESTION REDUCTION Allocation from Make Whole

The Make Whole Approach assigns a cost to each TO whose facility, when placed out of service in a reconfiguration auction, causes a revenue shortfall. When the revenue from this Make Whole charge is included, the TCC residual revenue from the auction should be positive.

- The proposed allocation of the revenue from these directly assigned costs is based on the difference in the flow-based value from the actual monthly auction and from a "but for" monthly auction.
- The difference in the flow-based value for each TO determines a set of weights to distribute the directly assigned costs of transmission outages.

CONGESTION REDUCTION Allocation from Make Whole

Similarly, the Make Whole Approach assigns a cost to each TO whose facility, when placed out of service in a capability period auction, causes a revenue shortfall. When the revenue from this Make Whole charge is included, the TCC residual revenue from the auction should be positive.

- Again, the proposed allocation of the revenue from these directly assigned costs is based on the difference in the flow-based value from the actual capability period auction and from a "but for" capability period auction.
- The difference in the flow-based value for each TO determines a set of weights to distribute the directly assigned costs of transmission outages.

CONGESTION REDUCTION Allocation from Make Whole

The Make Whole Approach also pays for facilities returned to service in a monthly reconfiguration auction that were modeled as out of service in the prior capability period auction.

- TOs will receive less revenue from the monthly auction because some of the auction revenue will be paid to the TO that returns a facility to service.
- The proposed allocation is based on the difference in the flow-based value from the actual monthly auction and from a "but for" monthly auction.
- The difference in the flow-based value for each TO determines a set of weights to distribute the directly assigned costs of transmission outages.

CONGESTION REDUCTION Allocation of Residual DAM

The fourth element of the NYISO proposal is to modify the method for allocating the DAM residual congestion rent shortfall/surplus to the TOs. This will replace the current IMWM percentage allocation factors.

- DAM residual congestion rents will also include adjustments for the direct allocation of shortfalls and revenues to specific facilities.
  - Revenue received by NYISO for charging a shortfall cost will be added to DAM residual congestion rents.
  - Revenue the NYISO pays to a TO for a facility returning to service will reduce DAM residual congestion rents.

CONGESTION REDUCTION Allocation of Residual DAM

The allocation factors for the monthly shortfalls/surpluses will be calculated from the imputed revenue that each TO receives for TCCs and Grandfathered ETAs for that month. Imputed revenue is based on:

- Revenues received from TCC auctions for which the TCCs remain valid in the present month.
- Revenues received for ETCNL and Residual TCCs.
- Imputed value of Grandfathered TCCs and ETAs for which the agreements remain valid in the present month.

This approach resembles a flat "full funding tax."

The NYSIO, in consultation with MPs, will work to develop a methodology to apply an availability adjustment to the TCCs sold in auctions to reduce the level of residual shortfall in the DAM and reconfiguration auctions.

- The goal is for the availability adjustment method to be brought to BIC for approval in time for Fall 2003 implementation.

ANALYSIS OF CR SHORTFALL ON 1/3/03

On January 3, 2003, the NYISO billing and accounting system reported a congestion rent shortfall of $4,293,007 for the DAM.

The following slides illustrate, for discussion purposes, how this congestion rent shortfall would be allocated to transmission that was out of service on this day using:

- Make Whole Approach.
- National Grid Approach.

MAKE WHOLE APPROACH — Shortfall by Constraint

Under the Make Whole Approach, a congestion rent shortfall is calculated for each constraint that was binding in the DAM.

- Calculate flows on DA grid for TCC set valid after last monthly auction (A).
- Calculate flows for DAM schedules associated with grandfathered rights (B).
- Calculate flows from SCUC schedules (includes grandfathered schedules) (C).
- Hourly congestion rent shortfall for each constraint is equal to:

$$(A + B - C) * \text{hourly shadow price.}$$

MAKE WHOLE APPROACH — Shortfall by Constraint

The following table shows the calculation of the congestion rent shortfall for the W49th St to Sprainbrook constraint on 1/3/03.

Hour	Constraint	Shadow Price	TCC Flow	Grandfathered Schedule Flow	SCUC Flow	Difference in Flow	Congestion Payment (Shortfall)
		($)	(MW)	(MW)	(MW)	(MW)	($)
1	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(22.47)	3,750.77	(11.71)	2,104.37	1,634.68	(36,732.06)
2	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(32.05)	3,750.77	(11.65)	2,111.72	1,627.40	(52,160.84)
3	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(20.83)	3,750.77	(11.65)	2,112.58	1,626.54	(33,884.28)
4	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(19.87)	3,750.77	(11.65)	2,108.73	1,630.39	(32,392.82)
5	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(49.41)	3,906.00	(12.15)	1,786.66	2,107.19	(104,122.35)
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(62.04)	3,906.00	(12.20)	1,746.40	2,147.40	(133,220.22)
7	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(58.76)	3,906.00	(12.20)	1,737.29	2,156.51	(126,706.76)
8	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(70.54)	3,906.00	(12.20)	1,775.97	2,117.83	(149,385.75)
9	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(81.20)	3,906.00	(12.20)	1,749.40	2,144.40	(174,118.90)
10	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(111.84)	3,906.00	(12.20)	1,808.05	2,085.75	(233,264.42)
11	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(98.06)	3,906.00	(12.20)	1,816.84	2,076.97	(203,662.30)
12	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(93.80)	3,906.00	(12.20)	1,827.38	2,066.42	(193,820.48)
13	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(100.10)	3,906.00	(12.20)	1,838.21	2,055.59	(205,762.68)
14	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(98.93)	3,906.00	(12.23)	1,838.81	2,054.96	(203,297.34)
15	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(99.20)	3,906.00	(12.23)	1,845.91	2,047.87	(203,157.00)
16	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(93.48)	3,906.00	(12.23)	1,833.91	2,059.87	(192,556.65)
17	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(108.49)	3,906.00	(12.26)	1,789.55	2,104.19	(228,276.21)
18	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(131.56)	3,906.00	(12.32)	1,818.03	2,075.65	(273,079.06)
19	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(85.38)	3,906.00	(12.32)	1,801.05	2,092.63	(178,659.57)
20	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(83.46)	3,906.00	(12.32)	1,788.52	2,105.16	(175,689.44)
21	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(85.33)	3,906.00	(12.29)	1,732.84	2,160.87	(184,383.09)
22	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(80.67)	3,906.00	(12.26)	1,724.06	2,169.69	(175,022.79)
23	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(71.37)	3,906.00	(12.18)	1,763.55	2,130.27	(152,031.32)
24	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(76.36)	3,906.00	(12.15)	1,754.90	2,138.95	(163,331.88)
				Total Calculated Congestion Payment (Shortfall)			(3,653,548.21)

MAKE WHOLE APPROACH — All Constraints

On 1/3/03, congestion rent shortfalls occur for 11 constraints. The sum of the shortfalls calculated by constraint is very close to the total shortfall for the day reported by the BAS.

Observation	Constraint	Congestion Payment (Shortfall)
1	RAINEY__ 138 VERNON__ 138 1 1 X B	(19,395.15)
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	(369,601.89)
3	HELLGATE 138 E179THST 138 1 2 N B	(34,807.51)
4	HELLGATE 138 E179THST 138 1 2 N B	(122,081.00)
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	(2,579.81)
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(3,808,718.21)
7	HELLGATE 138 E179THST 138 1 2 N B	135,717.79
8	VERNON__ 138 KENTAVE_ 138 1 2 X B	(5,280.24)
9	VERNON__ 138 KENTAVE_ 138 1 2 X B	(24,338.40)
10	PJ - NY 0 X B	4.74
11	DNI CONSTRAINT	(1,049.64)
	Total Calculated Congestion Payment (Shortfall)	(4,252,129.31)
	NYISO Billing and Accounting Reported Congestion Payment (Shortfall)	(4,293,007.67)
	Difference	40,878.36

MAKE WHOLE APPROACH

All Outages

Outage ID	Outage Element	Outage Start Date	Outage Start Time	Outage End Date	Outage End Time	Outage Type
25094	ANDOVER_115_PALMITER115_157(93LN	2002-DEC-09	16:12	2003-JAN-09	23:00	LN
25560	ASTORIAE138_ASTORIA4138_34124LLN	2003-JAN-03	0:00	2003-JAN-03	23:59	LN
25876	ASTORIAE138_ASTORIA3138_34123_LN	2003-JAN-03	0:00	2003-JAN-03	23:59	LN
25559	ASTORIAE138_ASTORIA4138_34124MLN	2003-JAN-03	0:00	2003-JAN-03	23:59	LN
25566	ASTORIAW138_ASTORIA5138_24125MLN	2003-JAN-03	0:00	2003-JAN-03	23:59	LN
25565	ASTORIAW138_ASTORIA5138_24125LLN	2003-JAN-03	0:00	2003-JAN-03	23:59	LN
26002	GOWANUSN345_GOWANN41345_R41_BYLN	2002-APR-22	14:41	2003-JAN-09	23:00	LN
25215	GOWANUSS138AGREENWD_138_42232_LN	2003-JAN-02	3:13	2003-JAN-02	23:59	LN
25215	GOWANUSS138AGREENWD_138_42232_LN	2003-JAN-03	4:00	2003-JAN-03	23:59	LN
26004	GOWANUSS345_GOWANS42345_R42_BYLN	2002-APR-22	14:41	2003-JAN-09	23:00	LN
26478	GR.GORGE115_VINGR_TP115_916_N.LN	2001-NOV-02	0:01	2003-JAN-09	23:00	LN
26187	HANCOCK_115_HAZEL___115_955-1_LN	2002-AUG-27	20:55	2003-JAN-09	23:00	LN
25243	INGHAM_C115_INGHAM_E115_R81___LN	2002-SEP-06	9:25	2003-JAN-09	23:00	LN
26477	MULTP-3_115_MULBRYNM115_985_N.LN	1999-APR-26	3:26	2003-JAN-09	23:00	LN
26244	NEVRSNK_69__NVRSK_TP69__WH1-2_LN	2002-NOV-25	13:07	2003-JAN-09	23:00	LN
25035	NOR_HBR_138_NRTHPORT138N1385__LN	2002-NOV-16	15:30	2003-JUN-01	23:59	LN
25152	RAINEY__345_FARRAGUT345A61____LN	2002-NOV-10	16:00	2003-JAN-15	23:59	LN
25725	S.OWEGO_115_GOUDEY__115_961___LN	2003-JAN-01	23:24	2003-JAN-02	23:00	LN
25045	S.RIPLEY230_DUNKIRK_230_68____LN	2003-JAN-03	7:30	2003-JAN-03	15:30	LN
25105	SPRNBRK_345_EGRDNCTY345CY49___LN	2003-JAN-03	4:00	2003-JAN-06	18:00	LN
26455	VINGR_TP115_VINEGAR_115_917_TALN	2003-JAN-01	22:44	2003-JAN-09	23:00	LN
26234	WWDBURNE69__HONK_FLS69__WH2___LN	2002-NOV-17	0:42	2003-JAN-09	23:00	LN
XXXXX	RNS3	2003-JAN-03	0:00	2003-JAN-03	23:59	LN
26058	PACKARD__115__R452_TIE_____SD	1998-FEB-18	14:25	2003-JAN-09	23:00	SD
26264	PLATSBRG_115A_IPC_TIE_____SD	2002-NOV-01	8:50	2003-MAY-01	10:00	SD
25569	RAMAPO___345__35-45_TIE_____SD	1996-DEC-20	8:47	2003-JAN-09	23:00	SD
25483	CHATGUAY_765__120__BK_12_____XF	2002-MAR-16	13:33	2003-JAN-09	23:00	X2
25679	EGRDNCTY_345C_345B_PAR2_____PS	2003-JAN-03	4:00	2003-JAN-06	18:00	X2
25551	EGRDNCTY_345A_138__BK_1_____XF	2003-JAN-03	4:00	2003-JAN-06	18:00	X2
25678	EGRDNCTY_345C_345A_PAR1_____PS	2003-JAN-03	4:00	2003-JAN-06	18:00	X2
25552	EGRDNCTY_345B_138__BK_2_____XF	2003-JAN-03	4:00	2003-JAN-06	18:00	X2
25794	GOWANUSS_138A_138B_PAR_R14____PS	2003-JAN-03	4:00	2003-JAN-03	23:59	X2
25794	GOWANUSS_138A_138B_PAR_R14____PS	2003-JAN-02	3:14	2003-JAN-02	23:59	X2
25475	GOWANUSS_345__138B_BK_T14_____XF	2003-JAN-02	3:13	2003-JAN-02	23:59	X2
25475	GOWANUSS_345__138B_BK_T14_____XF	2003-JAN-03	4:00	2003-JAN-03	23:59	X2
25598	NRTHPORT_138N_138E_PAR_1_____PS	2002-NOV-16	15:48	2003-JUN-01	23:59	X2
26324	ROTTRDAM_115__69___BK_2_____XF	2000-JUL-05	5:57	2003-JAN-09	23:00	X2

Relevant Outages

There is a long list of posted outages on 1/3/03, but only a small number of these could be responsible for the congestion rent shortfalls observed on binding constraints.

Outages removed from consideration include:

- Those included in the reconfiguration auction for January '03.
- Outages remote to the location of the observed shortfalls.
- Duplicates: when a facility is out of service, the outage of related breakers, transformers, etc. also appears on the list.
- Configuration changes.

	Relevant Outage	Outage Hours
Outage 1	NOR_HBR_138_NRTHPORT138N1385__LN	0 - 23
Outage 2	SPRNBRK_345_EGRDNCTY345CY49___LN	4 - 23
Outage 3	GOWANUSS138AGREENWD_138_42232_LN	4 - 23
Outage 4	RNS3	0 - 23

MAKE WHOLE APPROACH — Mapping to Constraints

NYISO OPS Staff is preparing a table that shows, for each facility outage, a list of constraints that will potentially bind in the DAM. For 1/3/03, the following table shows the outages that impact each of the constraints for which there is a congestion rent shortfall.

Observation	Constraint	Congestion Payment (Shortfall)	Hours	Outage 1 0 - 23	Outage 2 4 - 23	Outage 3 4 - 23	Outage 4 0 - 23
1	RAINEY__ 138 VERNON__ 138 1 1 X B	(4,717.11)	0 - 3	-	-	-	-
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	-	0 - 3	X	-	-	-
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	(2,579.81)	0 - 3	X	-	-	-
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(155,170.00)	0 - 3	X	-	-	X
8	VERNON__ 138 KENTAVE_ 138 1 2 X B	-	0 - 3	-	-	-	-
9	VERNON__ 138 KENTAVE_ 138 1 2 X B	-	0 - 3	-	-	-	-
1	RAINEY__ 138 VERNON__ 138 1 1 X B	(14,678.04)	4 - 23	-	-	X	-
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	(369,601.89)	4 - 23	X	X	-	-
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	-	4 - 23	X	X	-	-
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(3,653,548.21)	4 - 23	X	X	-	X
8	VERNON__ 138 KENTAVE_ 138 1 2 X B	(5,280.24)	4 - 23	-	-	X	-
9	VERNON__ 138 KENTAVE_ 138 1 2 X B	(24,338.40)	4 - 23	-	-	X	-
3	HELLGATE 138 E179THST 138 1 2 N B	(34,807.51)	0 - 23	-	-	-	-
4	HELLGATE 138 E179THST 138 1 2 N B	(122,081.00)	0 - 23	-	-	-	-
7	HELLGATE 138 E179THST 138 1 2 N B	135,717.79	0 - 23	-	-	-	-
10	PJ - NY 0 X B	4.74	0 - 23	-	-	-	-
11	DNI CONSTRAINT	(1,049.64)	0 - 23	-	-	-	-

MAKE WHOLE APPROACH Mapping to Constraints

Several of the constraints for which there is a shortfall cost on 1/3/03 do not map to an outage. The total shortfall costs associated with these constraints are relatively small.

- PJ-NY constraint has small positive value.
- DNI constraint is not imposed in TCC auction model because it is a constraint on change in schedules between hours.
- Shortfalls on Hellgate constraints are due to changes in the grid configuration at Astoria.
- Question about Rainey-Vernon in hours 0-3.

MAKE WHOLE APPROACH — Multiple Impacts

The NYISO performed power flow analyses to allocate responsibility for shortfall costs for constraints potentially impacted by more than one outage during an hour of 1/3/03. For each outage having a joint impact on some constraint, the NYISO ran a stand alone power flow case to determine the MW overloads that the TCCs would cause with just that line out of service.

Observation	Constraint	Congestion Payment (Shortfall)	Hours	Outage 1 0 - 23	Outage 2 4 - 23	Outage 3 4 - 23	Outage 4 0 - 23	Total
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(155,170.00)	0 - 3	30	-	-	500	530
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	(369,601.89)	4 - 23	80	600	-	-	680
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	-	4 - 23	80	600	-	-	680
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(3,653,548.21)	4 - 23	30	480	-	500	1,010

MAKE WHOLE APPROACH — Allocation Factors

The power flow analyses are used to complete the calculation of factors for allocating the shortfall costs for each constraint to the transmission outages that occurred during the relevant hours.

Observation	Constraint	Congestion Payment (Shortfall)	Hours	Outage 1 0 - 23	Outage 2 4 - 23	Outage 3 4 - 23	Outage 4 0 - 23	Total
1	RAINEY__ 138 VERNON__ 138 1 1 X B	(4,717.11)	0 - 3	-	-	-	-	-
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	-	0 - 3	100.00%	-	-	-	100%
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	(2,579.81)	0 - 3	100.00%	-	-	-	100%
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(155,170.00)	0 - 3	5.66%	-	-	94.34%	100%
8	VERNON__ 138 KENTAVE_ 138 1 2 X B	-	0 - 3	-	-	-	-	-
9	VERNON__ 138 KENTAVE_ 138 1 2 X B	-	0 - 3	-	-	-	-	-
1	RAINEY__ 138 VERNON__ 138 1 1 X B	(14,678.04)	4 - 23	-	-	100.00%	-	100%
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	(369,601.89)	4 - 23	11.76%	88.24%	-	-	100%
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	-	4 - 23	11.76%	88.24%	-	-	100%
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(3,653,548.21)	4 - 23	2.97%	47.52%	-	49.50%	100%
8	VERNON__ 138 KENTAVE_ 138 1 2 X B	(5,280.24)	4 - 23	-	-	100.00%	-	100%
9	VERNON__ 138 KENTAVE_ 138 1 2 X B	(24,338.40)	4 - 23	-	-	100.00%	-	100%
3	HELLGATE 138 E179THST 138 1 2 N B	(34,807.51)	0 - 23	-	-	-	-	-
4	HELLGATE 138 E179THST 138 1 2 N B	(122,081.00)	0 - 23	-	-	-	-	-
7	HELLGATE 138 E179THST 138 1 2 N B	135,717.79	0 - 23	-	-	-	-	-
10	PJ - NY 0 X B	4.74	0 - 23	-	-	-	-	-
11	DNI CONSTRAINT	(1,049.64)	0 - 23	-	-	-	-	-

MAKE WHOLE APPROACH — Allocation to Outages

The Make Whole Approach allocates 98% of the shortfall costs incurred on 1/3/03 to transmission outages.

Observation	Constraint	Congestion Payment (Shortfall)	Hours	Outage 1 0 - 23	Outage 2 4 - 23	Outage 3 4 - 23	Outage 4 0 - 23	Total
1	RAINEY__ 138 VERNON__ 138 1 1 X B	(4,717.11)	0 - 3	-	-	-	-	-
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	-	0 - 3	-	-	-	-	-
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	(2,579.81)	0 - 3	(2,579.81)	-	-	-	(2,579.81)
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(155,170.00)	0 - 3	(8,783.21)	-	-	(146,386.79)	(155,170.00)
8	VERNON__ 138 KENTAVE_ 138 1 2 X B	-	0 - 3	-	-	-	-	-
9	VERNON__ 138 KENTAVE_ 138 1 2 X B	-	0 - 3	-	-	-	-	-
1	RAINEY__ 138 VERNON__ 138 1 1 X B	(14,678.04)	4 - 23	-	-	(14,678.04)	-	(14,678.04)
2	DUNWODIE 345 SHORE_RD 345 1 1 X B	(369,601.89)	4 - 23	(43,482.57)	(326,119.31)	-	-	(369,601.89)
5	DUNWODIE 345 SHORE_RD 345 1 1 X C	-	4 - 23	-	-	-	-	-
6	W49TH_ST 345 SPRNBRK_ 345 1 1 N C	(3,653,548.21)	4 - 23	(108,521.23)	(1,736,339.75)	-	(1,808,687.23)	(3,653,548.21)
8	VERNON__ 138 KENTAVE_ 138 1 2 X B	(5,280.24)	4 - 23	-	-	(5,280.24)	-	(5,280.24)
9	VERNON__ 138 KENTAVE_ 138 1 2 X B	(24,338.40)	4 - 23	-	-	(24,338.40)	-	(24,338.40)
3	HELLGATE 138 E179THST 138 1 2 N B	(34,807.51)	0 - 23	-	-	-	-	-
4	HELLGATE 138 E179THST 138 1 2 N B	(122,081.00)	0 - 23	-	-	-	-	-
7	HELLGATE 138 E179THST 138 1 2 N B	135,717.79	0 - 23	-	-	-	-	-
10	PJ - NY 0 X B	4.74	0 - 23	-	-	-	-	-
11	DNI CONSTRAINT	(1,049.64)	0 - 23	-	-	-	-	-
	Total	(4,252,129.31)	Total	(163,366.83)	(2,062,459.06)	(44,296.67)	(1,955,074.02)	(4,225,196.58)
			NYISO Billing and Accounting Reported Congestion Payment (Shortfall)					(4,293,007.67)
							Difference	67,811.09
						Allocated Share of Payment (Shortfall)		98%

MAKE WHOLE APPROACH Jan-March Analysis

LECG has done a preliminary calculation of the DAM shortfall costs that can be assigned to binding constraints for the period from January through March 2003.

- Only $952,686 (1.5%) out of the $61,530,838 total congestion rent shortfall for this period is not allocated to binding constraints.
- The total unallocated shortfall from the Make Whole Approach will be higher than this because shortfalls on some constraints will not map to outages, as shown previously.

MAKE WHOLE APPROACH January Analysis

Date	Calculated Congestion Payment (Shortfall)	Reported Congestion Payment (Shortfall)	Difference
1/1/2003	165,915.76	156,960.42	8,955.34
1/2/2003	(2,364,472.15)	(2,392,248.05)	27,775.90
1/3/2003	(4,252,129.31)	(4,293,007.67)	40,878.36
1/4/2003	(965,518.54)	(980,104.06)	14,585.52
1/5/2003	(1,312,237.35)	(1,329,918.90)	17,681.55
1/6/2003	(813,775.61)	(825,045.51)	11,269.90
1/7/2003	(1,935,588.04)	(1,956,731.96)	21,143.92
1/8/2003	(3,064,917.59)	(3,109,125.69)	44,208.10
1/9/2003	(1,416,438.21)	(1,445,812.88)	29,374.67
1/10/2003	(1,303,645.23)	(1,324,543.25)	20,898.02
1/11/2003	(303,892.92)	(305,564.51)	1,671.59
1/12/2003	(928,751.83)	(940,871.41)	12,119.58
1/13/2003	(1,065,626.74)	(1,079,857.07)	14,230.33
1/14/2003	(1,094,265.01)	(1,109,020.00)	14,754.99
1/15/2003	(536,168.03)	(545,316.07)	9,148.04
1/16/2003	(1,617,787.70)	(1,637,731.96)	19,944.26
1/17/2003	(1,696,580.88)	(1,717,469.32)	20,888.44
1/18/2003	(1,199,547.35)	(1,235,980.31)	36,432.96
1/19/2003	(838,120.13)	(863,877.54)	25,757.41
1/20/2003	(714,238.72)	(723,174.46)	8,935.74
1/21/2003	(975,749.97)	(988,156.69)	12,406.72
1/22/2003	(1,451,406.51)	(1,470,658.07)	19,251.56
1/23/2003	(2,239,193.21)	(2,270,570.54)	31,377.33
1/24/2003	(2,475,387.86)	(2,507,815.12)	32,427.26
1/25/2003	(893,474.31)	(902,220.38)	8,746.07
1/26/2003	(1,587,563.12)	(1,605,664.20)	18,101.08
1/27/2003	(814,666.26)	(825,272.06)	10,605.80
1/28/2003	(1,621,167.16)	(1,641,880.97)	20,713.81
1/29/2003	(1,146,870.84)	(1,159,485.51)	12,614.67
1/30/2003	(1,248,201.62)	(1,264,744.47)	16,542.85
1/31/2003	(1,098,665.68)	(1,113,584.51)	14,918.83
Total	(42,810,132.13)	(43,408,492.72)	598,360.59

MAKE WHOLE APPROACH February Analysis

Date	Calculated Congestion Payment (Shortfall)	Reported Congestion Payment (Shortfall)	Difference
2/1/2003	(505,558.56)	(509,984.56)	4,426.00
2/2/2003	(671,859.98)	(678,785.83)	6,925.85
2/3/2003	(1,129,481.03)	(1,144,095.90)	14,614.87
2/4/2003	91,249.32	92,751.29	(1,501.97)
2/5/2003	23,099.93	22,336.31	763.62
2/6/2003	(46,990.94)	(50,654.43)	3,663.49
2/7/2003	(133,469.17)	(140,834.57)	7,365.40
2/8/2003	(3,352.70)	(3,529.00)	176.30
2/9/2003	(50,785.16)	(50,766.09)	(19.07)
2/10/2003	(163,258.08)	(170,737.94)	7,479.86
2/11/2003	(218,923.06)	(227,119.57)	8,196.51
2/12/2003	(128,957.68)	(133,730.01)	4,772.33
2/13/2003	(423,737.00)	(390,943.99)	(32,793.01)
2/14/2003	(425,036.59)	(434,300.90)	9,264.31
2/15/2003	(206,848.70)	(219,550.24)	12,701.54
2/16/2003	(107,952.78)	(125,285.78)	17,333.00
2/17/2003	(496,875.34)	(526,300.97)	29,425.63
2/18/2003	(201,579.92)	(210,524.95)	8,945.03
2/19/2003	(133,411.12)	(138,571.62)	5,160.50
2/20/2003	(164,952.46)	(172,160.34)	7,207.88
2/21/2003	97,665.72	94,686.45	2,979.27
2/22/2003	184,561.40	181,314.55	3,246.85
2/23/2003	(1,929,110.17)	(1,951,432.02)	22,321.85
2/24/2003	(253,073.51)	(261,380.09)	8,306.58
2/25/2003	(158,164.76)	(161,913.11)	3,748.35
2/26/2003	(492,863.52)	(495,144.93)	2,281.41
2/27/2003	(98,620.87)	(98,553.73)	(67.14)
2/28/2003	(87,096.34)	(75,249.86)	(11,846.48)
Total	(7,835,383.07)	(7,980,461.83)	145,078.76

MAKE WHOLE APPROACH March Analysis

Date	Calculated Congestion Payment (Shortfall)	Reported Congestion Payment (Shortfall)	Difference
3/1/2003	(372,918.57)	(375,237.71)	2,319.14
3/2/2003	(112,219.04)	(112,223.05)	4.01
3/3/2003	(5,457,384.12)	(5,516,790.76)	59,406.64
3/4/2003	(37,575.68)	(37,570.11)	(5.57)
3/5/2003	(327,576.58)	(327,556.63)	(19.95)
3/6/2003	(723,951.12)	(735,976.48)	12,025.36
3/7/2003	(1,151,305.96)	(1,184,117.34)	32,811.38
3/8/2003	36,511.72	7,455.56	29,056.16
3/9/2003	(354,078.44)	(354,021.57)	(56.87)
3/10/2003	313,712.60	313,677.78	34.82
3/11/2003	(6,343.57)	(6,278.94)	(64.63)
3/12/2003	(60,917.12)	(58,291.03)	(2,626.09)
3/13/2003	(154,512.49)	(155,139.19)	626.70
3/14/2003	(198,020.79)	(221,535.08)	23,514.29
3/15/2003	(89,191.41)	(110,534.04)	21,342.63
3/16/2003	18,184.08	18,166.25	17.83
3/17/2003	13,991.38	14,024.55	(33.17)
3/18/2003	25,868.44	25,892.67	(24.23)
3/19/2003	19,813.74	19,697.00	116.74
3/20/2003	113,781.62	113,767.87	13.75
3/21/2003	(81,991.33)	(82,690.01)	698.68
3/22/2003	(825,849.27)	(834,966.47)	9,117.20
3/23/2003	(1,397.56)	(1,361.37)	(36.19)
3/24/2003	73,940.44	73,240.30	700.14
3/25/2003	4,985.09	3,642.47	1,342.62
3/26/2003	16,942.14	17,327.66	(385.52)
3/27/2003	(5,644.74)	(5,642.58)	(2.16)
3/28/2003	(255,480.88)	(258,488.27)	3,007.39
3/29/2003	(326,907.41)	(336,369.55)	9,462.14
3/30/2003	(77,437.79)	(79,410.58)	1,972.79
3/31/2003	50,335.46	45,424.81	4,910.65
Total	(9,932,637.17)	(10,141,883.84)	209,246.67

NATIONAL GRID APPROACH — Interface Impacts

For the National Grid Approach, NYISO OPS will determine the impact of each relevant outage on zone-to-zone transfer capability. On 1/3/03, the outage of the Gowanus to Greenwood facility does not impact inter-zonal transfer capability.

Outage	Outage Name	From Zone	To Zone	Inter Zone	Zonal Impact Rating (MW)
Outage 1	NOR_HBR_138_NRTHPORT138N1385__LN	ISONE	LI	Y	80
Outage 2	SPRNBRK_345_EGRDNCTY345CY49___LN	DUN	LI	Y	725
Outage 3	GOWANUSS138AGREENWD_138_42232_LN	NYC	NYC	N	0
Outage 4	RNS3	DUN	NYC	Y	800

NATIONAL GRID APPROACH — Allocation to Outages

The Grid approach allocates 53% of the shortfall cost incurred on 1/3/03 to outages. The amounts differ significantly from the Make Whole Approach for each outage.

	Zone to Zone Price Differences			Outage 1		Outage 2		Outage 4		
Hour	LI - DUN ($/MW)	NYC - DUN ($/MW)	LI - ISONE ($/MW)	LI - ISONE Outage (MW)	LI - ISONE Outage ($)	LI - DUN Outage (MW)	LI - DUN Outage ($)	NYC - DUN Outage (MW)	DUN - NYC Outage ($)	Total ($)
0	12.95	15.93	22.47	(80)	(1,797.60)	-	-	(800)	(12,744.00)	(14,541.60)
1	27.26	22.39	21.66	(80)	(1,732.80)	-	-	(800)	(17,912.00)	(19,644.80)
2	17.51	14.62	14.01	(80)	(1,120.80)	-	-	(800)	(11,696.00)	(12,816.80)
3	14.14	13.97	11.54	(80)	(923.20)	-	-	(800)	(11,176.00)	(12,099.20)
4	36.87	35.56	26.31	(80)	(2,104.80)	-	-	(800)	(28,448.00)	(30,552.80)
5	38.45	44.61	26.32	(80)	(2,105.60)	(725)	(27,876.25)	(800)	(35,688.00)	(65,669.85)
6	44.95	41.85	33.57	(80)	(2,685.60)	(725)	(32,588.75)	(800)	(33,480.00)	(68,754.35)
7	73.29	50.23	59.63	(80)	(4,770.40)	(725)	(53,135.25)	(800)	(40,184.00)	(98,089.65)
8	68.50	57.81	52.81	(80)	(4,224.80)	(725)	(49,662.50)	(800)	(46,248.00)	(100,135.30)
9	119.17	79.43	97.41	(80)	(7,792.80)	(725)	(86,398.25)	(800)	(63,544.00)	(157,735.05)
10	116.05	69.66	97.05	(80)	(7,764.00)	(725)	(84,136.25)	(800)	(55,728.00)	(147,628.25)
11	75.39	66.67	57.27	(80)	(4,581.60)	(725)	(54,657.75)	(800)	(53,336.00)	(112,575.35)
12	59.56	71.09	40.22	(80)	(3,217.60)	(725)	(43,181.00)	(800)	(56,872.00)	(103,270.60)
13	59.99	70.27	40.80	(80)	(3,264.00)	(725)	(43,492.75)	(800)	(56,216.00)	(102,972.75)
14	60.14	70.46	40.90	(80)	(3,272.00)	(725)	(43,601.50)	(800)	(56,368.00)	(103,241.50)
15	70.82	66.38	52.71	(80)	(4,216.80)	(725)	(51,344.50)	(800)	(53,104.00)	(108,665.30)
16	119.07	77.04	98.12	(80)	(7,849.60)	(725)	(86,325.75)	(800)	(61,632.00)	(155,807.35)
17	107.67	93.39	82.07	(80)	(6,565.60)	(725)	(78,060.75)	(800)	(74,712.00)	(159,338.35)
18	105.82	60.71	89.36	(80)	(7,148.80)	(725)	(76,719.50)	(800)	(48,568.00)	(132,436.30)
19	67.54	58.72	51.41	(80)	(4,112.80)	(725)	(48,966.50)	(800)	(46,976.00)	(100,055.30)
20	113.86	61.38	97.47	(80)	(7,797.60)	(725)	(82,548.50)	(800)	(49,104.00)	(139,450.10)
21	117.87	58.03	102.38	(80)	(8,190.40)	(725)	(85,455.75)	(800)	(46,424.00)	(140,070.15)
22	80.47	50.79	66.60	(80)	(5,328.00)	(725)	(58,340.75)	(800)	(40,632.00)	(104,300.75)
23	60.87	54.22	45.93	(80)	(3,674.40)	(725)	(44,130.75)	(800)	(43,376.00)	(91,181.15)
				Total	(106,241.60)	Total	(1,130,623.00)	Total	(1,044,168.00)	(2,281,032.60)
					NYISO Billing and Accounting Reported Congestion Payment (Shortfall)					(4,293,007.67)
									Difference	2,011,975.07
									Allocated Share of Payment (Shortfall)	53%

System Capability Available for the sale of TCCs

Design objectives:

- The method should be consistent with the approach developed to assign costs and revenues for transmission facilities placed O/S or returned to service.
  - TOs will incur directly assigned costs for placing transmission facilities O/S to eliminate cost-shifting.
  - Some or all of these assigned costs may be returned to the TO paying the cost, if only that TO's facilities are affected by the capability reduction.
- The method should not have the result of withholding capability that could have been used to support TCC sales in one part of the system in order to generate a surplus in order to offset shortfalls that occur on other parts of the system that are over-subscribed beyond their anticipated capability.
- The method should continue to fully fund TCCS.

System Capability Available for the sale of TCCs

NYISO has evaluated three approaches to capability reduction:

- Withhold a portion of the remaining system capability
- Impose a flat derating to all facility pre- and post-contingency ratings
- Model specific facilities O/S

System Capability Available for the sale of TCCs

Withhold a portion (i.e., 10%) of the remaining system capability in the TCC auction.

- What percentage to withhold? Percentage would require adjustment over time.
- Easy to implement – employ current scaling factor methodology used in capability period auctions.
- System capability reduction will not be uniform; fully subscribed facilities would not be affected.
- Impossible to determine the direct assignment costs due to the capability reduction.
- Cost shifting will result if surplus revenue generated from 10% of system capability withheld from auction is used to fund costs of outages.
  Cost shifting will not occur if surplus revenue generated from 10% of system capability withheld from auction is allocated with flow-based method, while cost of outages are calculated using Make Whole Approach. Not clear what this accomplishes.

System Capability Available for the sale of TCCs

Reduce all facility ratings by a given percentage

- What percentage to withhold? Percentage would require adjustment over time.
- Difficult to implement – all facility ratings for pre and post contingency would require adjustment.
- System capability reduction would be uniform; fully subscribed facilities would be included in the reduction. Infeasibility of grandfathered TCCs.
- Impossible to determine the direct assignment costs due to the capability reduction.
- Cost shifting will result.

System Capability Available for the sale of TCCs

Model specific facilities as O/S in the auction.

- Which facilities will be placed O/S? Decision left to ISO, TOs or MPs?
- Whichever facilities are chosen will be wrong; shortfalls will continue to be paid for in the reconfiguration auction or in the DAM.
- Easy to implement – consistent with the Make Whole Approach.
- Fully subscribed facilities could be included in the reduction.
- Possible to determine the direct assignment costs due to the capability reduction.
- Cost shifting eliminated.
- Gaming possibilities.