

LONG-TERM TCC ALLOCATION EXAMPLES
Revised, December 14, 2006

1. LSE AAR Allocation

Suppose that the ETCNL assigned to load in Zone X was as shown in Table 1. This ETCNL is subject to a simultaneous feasibility test prior to each capability period auction and only those ETCNL which satisfy the simultaneous feasibility test are valued in the auction.

Table 1
Unprorated ETCNL

1300	A to Zone X
1200	B to Zone X

A simultaneous feasibility test using summer ratings would be applied to this ETCNL to determine the quantity that would be defined as auction allocation rights (AARs). For the example, we assume that 1,100 A to Zone X and 800 B to Zone X AARs satisfy the simultaneous feasibility test. In addition, 50 B to Bus C and 150 B to Bus D ETCNL would satisfy the test as shown in Table 2.¹ Some ETCNL is defined to particular buses within the load zone because this ETCNL would not be feasible if defined to the load zone as a whole due to load pocket constraints within the load zone.

Table 2
Feasible Zonal ETCNL Summer Ratings

1100	A to Zone X
800	B to Zone X
50	B to Bus C
150	B to Bus D

¹ The example assumes that 50% of the load in Zone X is within load pocket E, 12.5% within load pocket C, and 37.5% within load pocket D.

Since no AARs would be defined for ETCNL sinking at load buses,² the ETCNL used to derive AARs entitlements would be as shown in Table 3. The example assumes that in the spring 2008 auction, 50% of the available transmission system will be used to support the sale of six-month TCCs and the remaining 50% will be used to support the sale of annual TCCs. Ninety percent of the ETCNL available to support the sale of TCCs in the annual auction rounds would be allocated as AAR and eligible for conversion into long-term TCCs. Thus, 495 MW of A to Zone X AARs and 360 MW of B to Zone X AARs would be eligible for conversion to long-term TCCs as shown in Table 3.

Table 3
Derivation of Total AARs

	Total ETCNL	ETCNL Supporting Annual Zonal TCC	Available as AAR
A to Zone X	1100	550	495
B to Zone X	800	400	360

In the example, LSEs Blue and Red each serve 10% of the load within Zone X. LSE Blue chooses to exercise its right to convert its AARs into long-term TCCs. Since only whole MW AARs can be converted into TCCs, each LSE would be eligible to convert 49 A to Zone X and 36 B to Zone X AARs into TCCs. In the example, we assume that Blue LSE chooses to convert its AARs into TCCs while Red LSE does not.

Since LSE Blue opted to convert its AARs into TCCs, these converted AARs would be modeled as fixed injections and withdrawals in the spring 2008 auction, leaving the remaining capacity to support the sale of additional TCCs.

² AARs would only be established for ETCNL sinking at zones because no prices are calculated for load buses in the day-ahead market; hence, ETCNL sinking at load nodes can be valued in the auction but cannot be converted into TCCs.

Table 4 portrays the assumed source/sink prices in the spring 2008 six-month TCC auction. C1, D1 and E1 are generation buses within pockets C, D and E.

Table 4
Auction Source/Sink Prices
Six-Month Rounds

		Price
A	West	0
F	Central	250
B	East	1750
C1	C Pocket	5500
D1	D Pocket	4750
E1	E Pocket	9750
X	Zone	7343.75

Table 5 portrays the number of TCCs sold between each source and sink in the six-month rounds of the auction, TCC prices and the total auction revenues. The price of each TCC is the difference between the sink price and the source price.

Table 5
Auction Revenues
Six-Month Rounds

	MW	Sink Price	Source Price	Price	Revenues
A-F	100	250	0	250	25000
A-X	550	7343.75	0	7343.75	4039063
B-X	400	7343.75	1750	5593.75	2237500
B-C	31.25	5500	1750	3750	117187.5
B-D	68.75	4750	1750	3000	206250
					6625000

Table 6 portrays the assumed source/sink prices in the spring 2008 annual TCC rounds.

Table 6
Auction Source/Sink Prices
Annual Rounds

		Price
A	West	0
F	Central	250
B	East	2750
C1	C Pocket	7525
D1	D Pocket	6750
E1	E Pocket	12250
X	Zone	9596.875

Table 7 portrays the number of TCCs sold between each source and sink in the annual rounds of the spring auction, TCC prices and the total auction revenues.

Table 7
Annual Auction Revenues

	MW	Sink Price	Source Price	Price	Revenues
A-F	100	250	0	250	25000
A-X	501	9596.875	0	9596.875	4808034
B-X	364	9596.875	2750	6846.875	2492263
B-C	31.25	7525	2750	4775	149218.8
B-D	68.75	6750	2750	4000	275000
					7749516

In addition to the payments for TCCs purchased in the auction, the NYISO would collect payments for the allocated long-term TCCs based on the prices in the annual TCC round as shown in Table 8.³

Table 8
Charges for Allocated TCCs

	MW	Sink Price	Source Price	TCC Price	Revenues
A-X	49	9596.875	0	9596.875	470246.9
B-X	36	9596.875	2750	6846.875	246487.5
Total					716734.4

ETCNL would be valued in the six-month rounds as in any other auction as illustrated in Table 9. Auction revenues would be more than sufficient to fully fund payments to feasible ETCNL.

Table 9
Six-Month Auction Revenue and ETCNL Values

ETCNL	Payment	Quantity	Value
A to Zone X	7343.75	550	4039063
B to Zone X	5593.75	400	2237500
B to Bus C	3750	25	93750
B to Bus D	3000	75	225000
ETCNL Payments			6595313
Six-month auction revenues			6625000
Residual six-month auction			29687.5

³ Allocated TCCs would be priced in the one year round (or average of the rounds if more than one), consistent with the rounds in which ETCNL would be valued, maintaining revenue adequacy for the auction.

ETCNL would also be valued in the annual round, but payments to ETCNL holders would be funded both by auction revenues and payments for allocated TCCs as shown in Table 10. Auction revenues and payments for allocated TCCs would be sufficient to fully fund payments to feasible ETCNL.

Table 10
Annual Auction Revenues and ETCNL Values

ETCNL	Payment	Quantity	Value
A to Zone X	9596.875	550	5278281
B to Zone X	6846.875	400	2738750
B to Bus C	4775	25	119375
B to Bus D	4000	75	300000
ETCNL Payments			8436406
Annual auction revenues			7749516
Payments for allocated TCCs			716734.4
Residual annual auction			29843.75

2. Determination of Auction Quantities and AARs

This example illustrates how the quantity of capacity available for sale or allocation in the various auctions would change over time in response to changes in the proportion of the system used to support the sale of TCCs having particular durations. For simplicity, the example will focus on the amount of capacity available to support TCCs sinking in Zone X.

We initially consider the spring 2008 capability auction, in which 50% of the system will be made available to support the sale of one-year TCCs. Consistent with the example in Section I, it is assumed that the summer rating for deliveries into Zone X is 2,100 MW, so 1,050 MW of capacity would be available to support the award of annual TCCs sinking in Zone J as shown in Table 11. Since AARs would be defined equal to 90% of the feasible zonal ETCNL sinking in Zone X, there would be a total of 855 AARs sinking in Zone X, as shown in Table 3.⁴ If the eligible LSEs chose to convert all of their AARs into annual TCCs sinking in Zone X, there would be 195MW of capacity into Zone X available to support the sale of additional one-year TCCs in the auction.⁵ In addition, there would 1050MW of capacity available to support of sale of TCCs sinking in Zone X in the six-month rounds of the spring auction.

⁴ 950 MW * .9 = 855MW AARs

⁵ It is unlikely that in practice all LSEs would choose to convert their AARs into TCCs and capacity corresponding to these AARs not converted into TCCs would be available to support the sale of TCCs in the auction. For example, if only 125 AARs were converted into annual TCCs, then 925MW of capacity into Zone X would be available to support the sale of annual TCCs in the auction.

**Table 11
Availability Capacity by Auction**

	Summer 2008	Fall 2008	Summer 2009	Fall 2009
Annual Rounds				
Rating	2100	2100	2100	2100
Proportion	50%	0%	60%	0%
Available capacity	1050	0	1260	0
AAR cap	855	0	855	0
AAR converted	855	0	855	0
Capacity for sale	195	0	405	0
Outstanding annual	0	1050	0	1260
Six month rounds				
Rating	2100	2300	2100	2300
Proportion	50%	50%	40%	40%
Available capacity	1050	1250	840	1040
Capacity for sale	1050	1250	840	1040
Total awarded	2100	2300	2100	2300

The next column of Table 11 portrays the fall 2008 auction. 1,050 MW of annual TCCs sinking in Zone X would be outstanding from the spring auction. The winter rating (2,300 MW) would be used for the auction of six-month TCCs, so 1,250 MW of six-month TCCs sinking in Zone X could be sold (up from 1,050 in the spring).

The third column of Table 11 portrays the spring 2009 auction. It is assumed that the proportion of the system made available to support the sale of annual TCCs was increased to 60%, for a capacity of 1,260 MW of TCCs sinking in Zone X. Despite the increase in the capacity made available to support the sale of annual TCCs, the quantity of AARs remains 855, as it is determined by the original calculation of zonal AARs based on 50% of the system supporting the sale of annual TCCs. The minimum amount of capacity available to support the sale of annual TCCs sinking in Zone X, assuming 100% conversion of AARs, would rise from 195 MW in spring 2008 to 405 MW in spring 2009.

Finally, the fourth column of Table 11 portrays the fall 2009 auction. The amount of capacity available to support the sale of six-month TCCs would be reduced relative to the prior fall auction because of the sale of additional annual TCCs in spring 2009.