

Subject: Station Power Settlements and Calculations

Generators participating in the station power program are netted for generation output versus station service load over a monthly period. The resulting net generation is used to determine how a unit may procure station power (self supply, remote self supply, or 3rd party) and whether station power settles at a wholesale or retail rate.

Details:

This Technical Bulletin addresses FERC-mandated changes to the NYISO tariff regarding the bidding and billing processes to support charging wholesale energy prices for self-supplied Station Power consumption. Specifically, this Technical Bulletin defines how Station Power is calculated and settled.¹ Station Power is defined as the energy for (1) the heating, lighting, air-conditioning and office equipment needs of the buildings on a generating facility's site; and, (2) operating the electric equipment that is on the generating facility's site. Station Power may be procured in three ways:

- **Self-Supply:** The netting of generation output against station service load over a monthly period for the same unit or complex of units affiliated with the same Power Supplier Load Serving Entity (Power Supplier LSE).²
- **Remote Self-Supply:** The netting of generation output against station service load over a monthly period for affiliate units owned by the same corporate entity or LLC (but not units associated with the same Billing Organization but different LLCs).
- **3rd Party Supply:** The net of station service load over generation output remaining after Self Supply and Remote Self Supply (also known as retail load).

All Station Power is charged at wholesale generation rates. However, each Generator that consumed 3rd Party Station Power will be paid a rebate by the NYISO for the wholesale cost of the consumed 3rd party energy. In addition, NYISO will charge the appropriate LSE the exact amount the Generators collected as a rebate. These rebate/charge values will appear on new line items in the consolidated invoice. The following table summarizes all charges associated with Station Power:

Station Power Type	NYISO Energy Charges	T.O Energy Charge to Generator	NYISO Rebates Gen Cost of Consumed Wholesale Energy	NYISO Charges LSE. Cost Of Consumed Wholesale Energy	NTAC Paid By	Ancillary Services Paid By
Self-Supply	Wholesale	None	No	No	None	None
Remote Self-Supply	Wholesale	None	No	No	Generator	None
3rd Party	Wholesale	Retail	Yes	Yes	LSE	LSE

Figure 1

¹ The various aspects of station power are detailed in a series of six NYISO Technical Bulletins. TB XXX describes station power set-up, metering, and data modeling requirements; TB XXX outlines bidding and scheduling station power; TB XXX clarifies TO reporting, web-based reconciliation, and station power; TB XXX details the ancillary services charges associated with station power; and TB XXX explains changes to the Consolidated Invoice resulting from station power.

² Power Supplier LSEs are used to account for station power energy consumed at the generator load bus for each unit. The load represented at each individual Power Supplier LSE is the station power consumed by the generator. These data models are described in greater detail in TB XXX.

The purpose of this "Technical Bulletin" is to facilitate participation in the NYISO by communicating various NYISO concepts, techniques, and processes to Market Participants before they can be formally documented in a NYISO manual. The information contained in this bulletin is subject to change as a result of a revision to the ISO Tariffs or a subsequent filed tariff with the FERC.

Generators participating in the Station Power program enter their hourly forecasts for energy consumed as Station Power; these load forecasts are used for the initial invoice. Metering Authorities (MAs) report non-zero load data (hourly load bus data greater than zero) for all hours, regardless of a unit’s status as on or off-line. These Load Bus meter readings are used for the 4-month true-up and all other subsequent invoices.

How the Types of Station Power are Calculated

Station Power is assessed, delineated, and settled into its three types (self-supply, remote self-supply, and third party supply) through a series of calculations which are detailed below:

Monthly Net Generation for Units

The NYISO determines net generation for each unit for each hour based on the initial load forecasts and the Power Supplier LSE meter readings (i.e., MA-reported data for re-bills). For more information on Station Power data reporting, see Technical Bulletin xxx. If hourly net generation is a negative value, then the unit consumed more MWs in Station Power than it produced as energy in that hour. As a hypothetical example, the following figure illustrates net generation for four units for one month:

Net Generation by Unit:															
HB	0	1	2	3	4	...	713	714	715	716	717	718	719	Net	Neg Net
Generator #															
1	10.00	8.00	-1.00	-2.00	0.00	...	0.00	-2.00	-2.00	-1.00	5.00	10.00	10.00	35.00	-8.00
2	4.00	2.00	-4.00	-5.00	0.00	...	0.00	-5.00	-4.00	-5.00	-4.00	-5.00	-4.00	-30.00	-36.00
3	-4.00	-4.00	-4.00	-4.00	0.00	...	0.00	-4.00	-4.00	-4.00	-4.00	2.00	4.00	-26.00	-32.00
4	-3.00	-3.00	-3.00	-3.00	0.00	...	0.00	-3.00	-3.00	-3.00	-3.00	4.00	8.00	-12.00	-24.00
											Owner Total:			-33.00	

Figure 2

Note: Neg Net (negative net generation by unit) represents the monthly sum of all hourly negative readings for a unit and does not include any hourly positive readings

In Figure 2, four affiliated units combined to consume more MWs than they generated over a month, (-33 MWs). In this case, all MWs consumed as Station Power will be considered self-supplied (or remotely self-supplied), with the exception of the 33MWs that was 3rd party supplied.

The owner’s total net output (the sum of the monthly accumulated net generation for every unit in the Corporate Affiliate) is used to determine whether 3rd party Station Power supply took place. In this example, since the owner’s total net output (-33 MWs) is a negative number, some supply of Station Power by a 3rd party Station Power took place (and remote self-supply Station Power may exist). If the owner’s total net output had been a positive number in this example, there would be no 3rd party Station Power, but there could be remote self-supply of Station Power.

Allocating 3rd Party Station Power (Retail Load) to Net Negative Units

If it is determined that 3rd party Station Power took place, this retail load is allocated to specific units. For Corporate Affiliates that have negative monthly net generation (i.e., a negative owner’s total net output, as in the example above) retail load is first allocated to the units with the greatest negative output until all of the Corporate Affiliate’s negative monthly net generation is accounted for. Using the example above, the allocation of retail load to net negative units would be determined as follows in Figure 3:

Generator	Unit Net Gen	Allocation
1	35.000	
2	-30.000	30.000
3	-26.000	3.000
4	-12.000	
Owner Total:	-33.000	33.000

Figure 3

The 33 MWs of 3rd party-supplied retail load would be covered first by Unit 2 since it had the greatest negative output over the month as follows in Figure 4:

Generator	Unit Net Gen	Allocation
1	35.000	
2	-30.000	30.000
3	-26.000	3.000
4	-12.000	
Owner Total:	-33.000	33.000

Figure 4

In the next example (Figure 5), the absolute value of the owner's total (33MW) is greater than the Station Power consumed by Unit 2 (30MW), so all of Unit 2's monthly net generation is considered to be 3rd party Station Power. If the owner's total were less than the most negative unit's monthly net generation, the most negative unit would cover the owner's total and no further allocations of retail load would be necessary. After Unit 2's MWs have been allocated, 3MW of 3rd party Station Power remain. Unit 3 (30MW) is the remaining unit with the highest negative monthly net generation and, therefore, is allocated the remaining 3MWs of negative net generation. At this point, all of the Corporate Affiliate's negative monthly net generation has been accounted for and no more 3rd party Station Power will be allocated:

Generator	Unit Net Gen	Allocation
1	35.000	
2	-30.000	30.000
3	-26.000	3.000
4	-12.000	
Owner Total:	-33.000	33.000

Figure 5

For this example, allocating 3rd party Station Power to units with a negative net generation results in only Units 2 (30MW) and 3 (3MW) covering retail load. If the remaining MW load from the second allocation was greater than Unit 3's negative monthly net generation, then the iterative process would continue until all retail load was allocated.

Remote Self Supply Station Power

After allocating 3rd party Station Power, any remaining monthly net generation is considered remotely self-supplied Station Power. For instance, in the example above, the 23MW consumed by Unit 3 (i.e., the MWs not allocated to retail load) and the 12 MWs of load consumed by Unit 4

are considered to be remote self-supply Station Power. These 35 MW (23MW + 12 MW) are remotely self-supplied from the 35 MWs produced by Unit 1.

Remote Self Supply Allocation				
Generator	1	2	3	4
Monthly Net Gen	35	-30	-26	-12
Allocated 3 rd Party MWs	0	30	3	0
Remote Self Supply MWs	0	0	23	12

Figure 6

NTAC is charged, as typically applied to normal load, for each MW of consumed Remote Self-Supply Station Power.

Determining the Wholesale Cost of 3rd Party Station Power

After determining the type of Station Power for which units are eligible, the hourly wholesale cost is determined for units that have been allocated 3rd party Station Power. In the examples above, only Units 2 and 3 were allocated 3rd party station supply and only these units are allocated the associated wholesale costs.

The wholesale cost of 3rd party Station Power is determined by multiplying the hourly unit net generation (Figure 2) by the unit’s allocation of retail load (Figure 5) and dividing by the unit’s negative net generation (Figure 2). This calculation is only performed for hours that have a negative hourly unit net generation value.

For example, Unit 2 has a net generation of –5.00 MW for hour 3 and an allocation of retail load of 30MW. Unit 2 has negative net generation totaling –36.00 MWhRs over the month. Unit 2’s 3rd party Station Power MW allocation for hour 3 is $((-5.00 \times 30.000) / 36.00) = 4.167$ MW:

HB	0	1	2	3	...	714	715	716	717	718	719	Total	Negative Net
Unit 1					#								
2			3.333	4.167	#	4.167	3.333	4.167	3.333	4.167	3.333	30.000	-36.000
3	0.375	0.375	0.375	0.375	#	0.375	0.375	0.375	0.375			3.000	-32.000
4					#								
												33.000	

Figure 7

The hourly wholesale cost of 3rd party Station Power is determined by multiplying the hourly 3rd Party MW allocation by the hourly Gen Bus LBMP:

Gen Bus LBMPs:

HB	0	1	2	3	...	714	715	716	717	718	719
Generator #											
1	\$ 33.62	\$ 28.46	\$ 21.72	\$ 22.54	...	\$ 42.86	\$ 42.58	\$ 51.36	\$ 45.63	\$ 40.47	\$ 30.12
2	\$ 33.62	\$ 28.46	\$ 21.72	\$ 22.54	...	\$ 42.86	\$ 42.58	\$ 51.36	\$ 45.63	\$ 40.47	\$ 30.12
3	\$ 33.62	\$ 28.46	\$ 21.72	\$ 22.54	...	\$ 42.86	\$ 42.58	\$ 51.36	\$ 45.63	\$ 40.47	\$ 30.12
4	\$ 33.62	\$ 28.46	\$ 21.72	\$ 22.54	...	\$ 42.86	\$ 42.58	\$ 51.36	\$ 45.63	\$ 40.47	\$ 30.12

Figure 8

For example, Unit 2 has an Hourly Retail Load Allocation for hour 3 of 4.167 MW and a Gen Bus LBMP of \$22.54. The Hourly Retail Load Adjustment \$ is $4.167 * \$22.54 = \93.92 .

HB	0	1	2	3	...	714	715	716	717	718	719	Total
Unit 1	-	-	-	-	#	-	-	-	-	-	-	-
2	-	-	\$72.41	\$93.92	#	\$178.58	\$141.93	\$214.00	\$152.10	\$168.63	\$100.40	\$1,121.97
3	\$12.61	\$10.67	\$8.15	\$8.45	#	\$16.07	\$15.97	\$19.26	\$17.11	-	-	\$108.29
4	-	-	-	-	#	-	-	-	-	-	-	-
												\$1,230.95

Figure 9

The monthly wholesale cost of 3rd party Station Power is determined by aggregating the hourly 3rd party Station Power wholesale cost values for each hour during the month where a unit had a negative hourly net generation. For this example, the monthly wholesale cost of 3rd party Station Power for Unit 2 is \$1,121.97.

Rebates and Charges for 3rd Party Station Power

Each generator is paid a rebate by the NYISO for the monthly wholesale cost of the consumed 3rd party Station Power. The NYISO, in turn, charges the LSE the exact amount that the Generator collected as rebates from NYISO. The LSE can then charge the Generator a retail amount for the 3rd party-supplied MWs.

As indicated in the example above, the monthly wholesale cost of 3rd party Station Power for Unit 2 is \$1,121.97, which is the rebate paid to Unit 2. The rebate for Unit 3 is calculated in a likewise fashion.

The NYISO charges the LSE the amount rebated to the generator. In the above example, the amount charged to the LSE for Unit 2 is \$1,121.97. To charge an LSE, the NYISO will charge the Billing Organization affiliated with the LSE (Corporate Affiliate) that maps to the bus/busses (Power Supplier LSEs) used by the generator that consumed 3rd Party Station Power. This charge will be calculated at the unit level, not at the overall owner/corporate LLC level. These charges and rebates are summarized in the table below:

Generator	NYISO Rebate to Generator	NYISO Charge to LSE	Energy MW LSE Can Charge to Generator at a retail rate.
Unit 2	\$1,121.97	\$1,121.97	30.00
Unit 3	\$108.29	\$108.29	3.00

Figure 10