NYISO
2015 Simultaneous Import Limit Determination

NYISO
Operations Engineering

12/19/2016

DRAFT – FOR DISCUSSION PURPOSES ONLY

Data Utilized for SIL Study

- **Four seasonal historic total NYISO Simultaneous Import Limit (SIL) values for the period winter 2014/15 through Fall 2015**

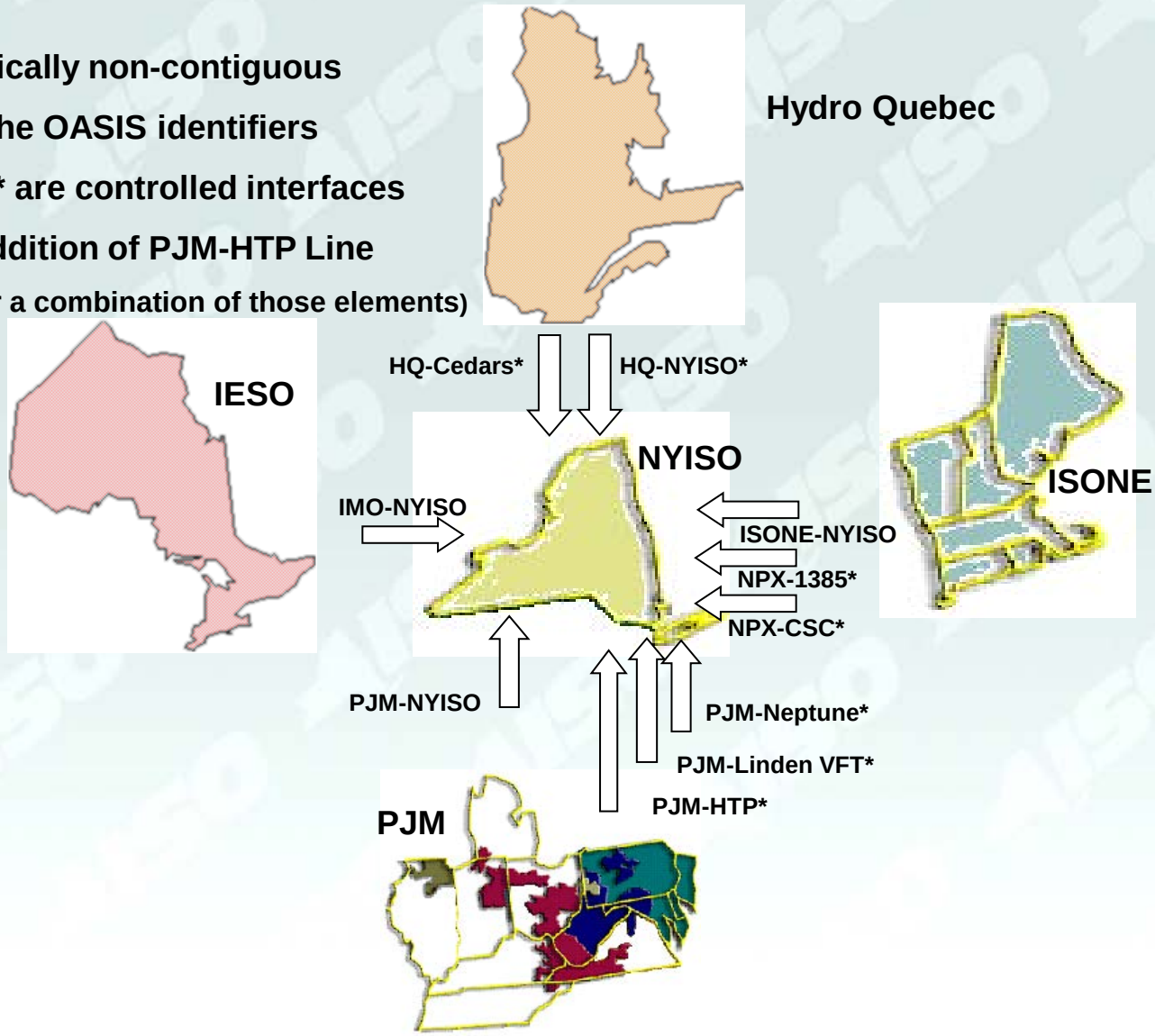
- **Allocation of the total historical SIL values to specific limits with neighboring Balancing Authorities**
  (PJM, ISONE, IESO, and HQ)

- **Adjustments for firm transmission commitments held by affiliated companies that represent transfer capability not available to unaffiliated companies**

Posted OASIS Interfaces

- Neighboring BAs are electrically non-contiguous
- Interface names listed are the OASIS identifiers
- Interfaces identified with a * are controlled interfaces
- 2015 Report includes the addition of PJM-HTP Line

(HVDC, VFT, radial generation or a combination of those elements)



2015 NYISO Simultaneous Import limits

Seasonal Simultaneous Import Limit (SIL)		
2014-15 Season	NYISO Simultaneous Import Limits	NYISO System Peak Loads
Winter	7524 MW	24893 MW
Spring	6850 MW	24418 MW
Summer	7695 MW	31266 MW
Fall	7635 MW	31179 MW

Simultaneous import limit (SIL) values are provided consistent with historical data of actual, hourly, real-time TTC values used in operating the transmission system and posted transmission capacity availability on OASIS during the seasonal peak loads periods of 2014-15

Approach (1 OF 2)

In accordance with FERC Order 697:

- **NYISO accounts for simultaneity in determining the SIL through analysis of actual operational data during the peak periods identified**
- **The TTC values employed are those used during actual operation of the transmission system and posted availability on OASIS**
- **The TTC values were studied in a manner which includes the TTC/ATC methodologies identified in the NYISO OATT**
- **The TTC values employed represent more than interface constraints at the balancing authority area border and reflect all transmission limitations within the study area and limitations within first-tier areas**

Approach (2 OF 2)

No Physical Transaction Scheduling in NYISO:

- **The NYISO OATT does not permit firm transmission commitment reservations of tie capability [for companies affiliated with transmission owners in NY]**
  - ***All NYISO transmission scheduling is achieved via financial evaluation of transaction bids placed by MPs in the DAM and HAM markets.***
  - ***Long-term financial scheduling is not available; [all scheduling is conducted in the DAM and HAM evaluations]***

- **Thus, no TTC adjustments for applicable firm transmission commitments held by affiliated companies, representing transfer capability not available to first-tier supply, are required**

Required Evidence w/r/t TTCs

The TTC values employed-

- Account for simultaneity through the application of significant (400-500 MW) Transmission Reliability Margins (TRMs) applied to first-tier areas where transfers to NYISO would result in loop flow through other first-tier entities
- Account for all external transmission limitations existing in first-tier areas as demonstrated by historical record of adjustments to TTC values day-ahead and hour-ahead based on operating restrictions within first-tier areas
- Account for all transmission reliability margins as defined in the NYISO OATT
- Are used in operating the transmission system and posting availability on OASIS

Data Sources

- **NYISO website posting of TTC and ATC**
  - ***http://mis.nyiso.com/public/P-8list.htm***
- **NYISO website posting of TRM and CBM**
  - ***http://www.nyiso.com/public/webdocs/market_data/power_grid_info/margin_with_external_trm.pdf***
- **NYISO website posting of load**
  - ***http://mis.nyiso.com/public/P-58Clist.htm***

Winter Peak Load

Load 24,893 MW on 01/07/2015 17:56:00*

Interface Name	TTC	TRM***	CBM	Adjusted TTC	ATC	Scheduled
HQ-CEDARS	199	0	0	199	199	0
HQ-NYISO**	1310	0	0	1310	1200	110
IMO-NYISO	1900	300	0	1600	198	1402
ISONE-NYISO	1400	200	0	1200	1200	0
NPX-1385	200	0	0	200	95	105
NPX-CSC	0	0	0	0	0	0
PJM-NEPTUNE	660	0	0	660	235	425
PJM-NYISO	2450	300	0	2150	624	1526
PJM-LINDEN VFT	315	0	0	315	25	290
PJM -HTP	660	0	0	660	400	260
Total	**9094**	**800**	**0**	**8294**	**4176**	**4118**

**Data throughout this report reflects actual operating data from the identified time interval*
***HQ-NYISO interface is restricted to 1310 MW sinking into NY. The posted value of 1500 MW accounts for the potential to wheel from Hydro Quebec through New York.*
****Controllable ties have a TRM of zero since they can be continuously and precisely controlled*

Spring Peak Load

Load 24,418 MW on 05/26/2015 16:47:00*

Interface Name	TTC	TRM***	CBM	Adjusted TTC	ATC	Scheduled
HQ-CEDARS	95	0	0	95	95	0
HQ-NYISO**	1310	0	0	1310	128	1182
IMO-NYISO	1500	300	0	1200	0	1200
ISONE-NYISO	1150	200	0	950	768	182
NPX-1385	200	0	0	200	0	200
NPX-CSC	330	0	0	330	330	0
PJM-NEPTUNE	660	0	0	660	0	660
PJM-NYISO	2200	300	0	1900	1177	723
PJM-LINDEN VFT	315	0	0	315	315	0
PJM -HTP	660	0	0	660	660	0
Total	**8420**	**800**	**0**	**7620**	**3473**	**4147**

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***HQ-NYISO interface is restricted to 1310 MW sinking into NY. The posted value of 1500 MW accounts for the potential to wheel from Hydro Quebec through New York.*

****Controllable ties have a TRM of zero since they can be continuously and precisely controlled*

Summer Peak Load

Load 31,266 MW on 07/29/2015 16:30:00*

Interface Name	TTC	TRM***	CBM	Adjusted TTC	ATC	Scheduled
HQ-CEDARS	190	0	0	190	60	130
HQ-NYISO**	1310	0	0	1310	0	1310
IMO-NYISO	1900	300	0	1600	1136	464
ISONE-NYISO	1400	200	0	1200	840	360
NPX-1385	200	0	0	200	155	45
NPX-CSC	330	0	0	330	0	330
PJM-NEPTUNE	660	0	0	660	0	660
PJM-NYISO	2300	300	0	2000	1613	387
PJM-LINDEN VFT	315	0	0	315	315	0
PJM -HTP	660	0	0	660	660	0
Total	**9265**	**800**	**0**	**8465**	**4779**	**3686**

**Data throughout this report reflects actual operating data from the identified time interval*

***HQ-NYISO interface is restricted to 1310 MW sinking into NY. The posted value of 1500 MW accounts for the potential to wheel from Hydro Quebec through New York.*

****Controllable ties have a TRM of zero since they can be continuously and precisely controlled*

Fall Peak Load

Load 31,179 MW on 09/08/2015 15:56:00*

Interface Name	TTC	TRM***	CBM	Adjusted TTC	ATC	Scheduled
HQ-CEDARS	130	0	0	130	50	80
HQ-NYISO**	1310	0	0	1310	44	1266
IMO-NYISO	1900	300	0	1600	765	835
ISONE-NYISO	1400	200	0	1200	1200	0
NPX-1385	200	0	0	200	95	105
NPX-CSC	330	0	0	330	0	330
PJM-NEPTUNE	660	0	0	660	0	660
PJM-NYISO	2300	300	0	2000	1184	816
PJM-LINDEN VFT	315	0	0	315	315	0
PJM -HTP	660	0	0	660	600	60
Total	**9205**	**800**	**0**	**8405**	**4253**	**4152**

**Data throughout this report reflects actual operating data from the identified time interval*
***HQ-NYISO interface is restricted to 1310 MW sinking into NY. The posted value of 1500 MW accounts for the potential to wheel from Hydro Quebec through New York.*
****Controllable ties have a TRM of zero since they can be continuously and precisely controlled*

Seasonal Comparison*

Peak Load (MW)	Winter		Spring		Summer		Fall	
	24,893		24,418		31,266		31,179	
Interface Name	**TTC**	**Scheduled**	**TTC**	**Scheduled**	**TTC**	**Scheduled**	**TTC**	**Scheduled**
HQ-CEDARS	199	0	95	0	190	130	130	80
HQ-NYISO	1310	110	1310	1182	1310	1310	1310	1266
IMO-NYISO	1900	1402	1500	1200	1900	464	1900	835
ISONE-NYISO	1400	0	1150	182	1400	360	1400	0
NPX-1385	200	105	200	200	200	45	200	105
NPX-CSC	0	0	330	0	330	330	330	330
PJM-NEPTUNE	660	425	660	660	660	660	660	660
PJM-NYISO	2450	1526	2200	723	2300	387	2300	816
PJM-LINDEN VFT	315	290	315	0	315	0	315	0
PJM -HTP	660	260	660	0	660	0	660	60
Total	**9094**	**4118**	**8420**	**4147**	**9265**	**3686**	**9205**	**4152**

**Data pulled from slides 9 through 12.*

NYISO Tariffs OATT 2-Common Service Provisions

- **2.2.1 Initial Allocation of Available Transfer Capability:**
  - ***Firm Transmission Service under this Tariff is obtained when the Transmission Customer agrees to pay the Congestion associated with its service.***

NYISO Tariffs – OATT Attachment C 9.1 Overview

- The ISO shall calculate and post ATC values for its Internal and External Interfaces and for Scheduled Lines.
- The ISO's Interfaces represent a defined set of transmission facilities that separate Locational Based Marginal Pricing (LBMP) Load Zones within the New York Control Area and that separate the New York Control Area from adjacent Control Areas.
- External Interfaces may be represented by one or more Proxy Generator Buses for scheduling and dispatching purposes. Each Proxy Generator Bus may be associated with distinct, posted ATC values.
- Scheduled Lines represent a transmission facility or set of transmission facilities that provide a separate scheduling path interconnecting the ISO to an adjacent Control Area. Each Scheduled Line is associated with a distinct Proxy Generator bus for which the ISO separately posts ATC.

Approach

Commission Determination * – Order No. 697 pt. 364

- *Southern's suggestion that the Commission allow the use of simultaneous TTC values is consistent with the SIL study provided that these TTCs are the values that are used in operating the transmission system and posting availability on OASIS*

- *The simultaneous TTCs[368] must represent more than interface constraints at the balancing authority area border and must reflect all transmission limitations within the study area and limitations within first-tier areas*

[368] The simultaneous TTCs include seller's balancing authority area and aggregated first-tier areas.

*** https://www.ferc.gov/whats-new/comm-meet/2007/062107/E-1.pdf**

Approach (continued)

- The source (first-tier remote resources) can only deliver power to load in the seller's balancing authority area if adequate transmission is available out of its first-tier area, adequate transmission is available at the seller's balancing authority area interface, and transmission is internally available
- Thus, the TTC must be appropriately adjusted for all applicable (as discussed below) firm transmission commitments held by affiliated companies that represent transfer capability not available to first-tier supply
- Sellers submitting simultaneous TTC values must provide evidence that these values account for simultaneity, account for all internal transmission limitations, account for all external transmission limitations existing in first-tier areas, account for all transmission reliability margins, and are used in operating the transmission system and posting availability on OASIS

Sub-Markets

- The NYISO tariffs address sub markets (NYC and Long Island) in the area of capacity markets only

- The NYISO energy markets do not address sub-markets and TTCs and ATCs are neither calculated, monitored, nor posted for capacity market defined areas NYC and Long Island

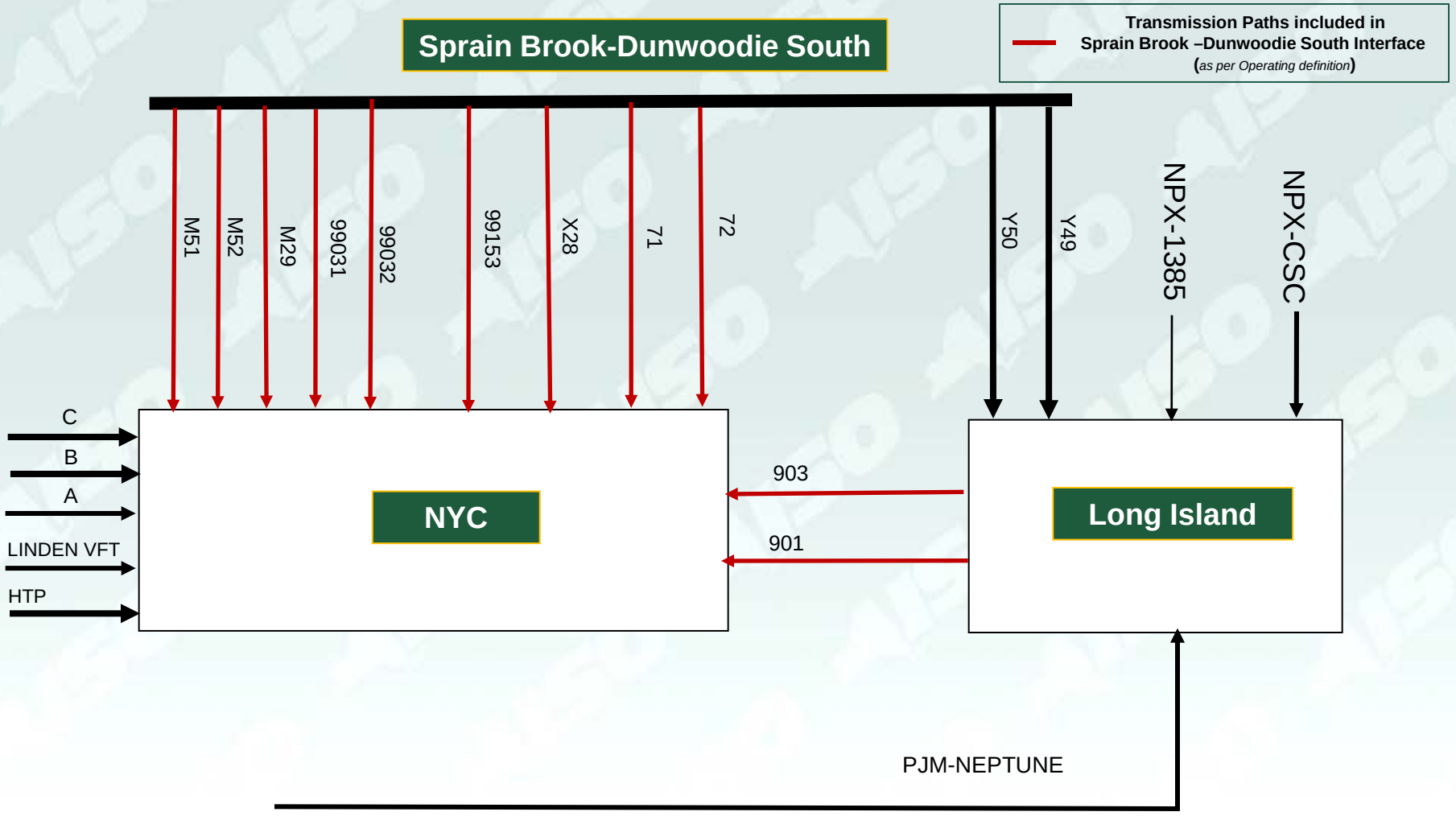
Equivalent SIL for Sub- Markets

- An approximation of the transfer capability into the capacity sub-markets of Con Ed and Long Island can be calculated by summing the tie capability of the into those areas and assuming that the contract wheel of 300 MW through LIPA into Con Ed.

- The net scheduled interchange into the Con Ed and Long Island resulting from the statewide security constrained commitment and dispatch is calculated and can be regarded as the equivalent scheduled transfer into the areas.

- The difference between the approximated transfer capability into the capacity sub-markets and the net scheduled interchange within those areas can be regarded as a ATC.

Sub- Market Interconnections



Winter Peak Load - Long Island

Load 3,398 MW on 01/07/2015 18:19:00*

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
NPX-1385	200	0	0	200	95	105
NPX-CSC	0	0	0	0	0	0
PJM-NEPTUNE	660	0	0	660	235	425
Spr-Dunw S (Y50 & Y49)	1200	N/A	N/A	1200	152	1048
Con Ed-LIPA***	-300	N/A	N/A	-300	-63	-237
Total	**1760**	**0**	**0**	**1760**	**419**	**1341**

**Data throughout this report reflects actual operating data from the identified time interval*
*** Controllable ties have a TRM of zero since they can be continuously and precisely controlled*
*** Wheel agreement between LIPA and Con Ed allows for up to 300MW to be wheeled through LIPA to Con Ed

Spring Peak Load - Long Island

Load 3,373 MW on 05/29/2015 16:23:00*

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
NPX-1385	200	0	0	200	0	200
NPX-CSC	330	0	0	330	0	330
PJM-NEPTUNE	660	0	0	660	383	277
Spr-Dunw S (Y50 & Y49)	1200	N/A	N/A	1200	802	398
Con Ed-LIPA***	-300	N/A	N/A	-300	-39	-261
Total	**2090**	**0**	**0**	**2090**	**1146**	**944**

**Data throughout this report reflects actual operating data from the identified time interval*
*** Controllable ties have a TRM of zero since they can be continuously and precisely controlled*
*** Wheel agreement between LIPA and Con Ed allows for up to 300MW to be wheeled through LIPA to Con Ed

Summer Peak Load - Long Island

Load 5,208 MW on 07/20/2015 16:15:00*

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
NPX-1385	200	0	0	200	0	200
NPX-CSC	330	0	0	330	0	330
PJM-NEPTUNE	660	0	0	660	137	523
Spr-Dunw S (Y50 & Y49)	1200	N/A	N/A	1200	721	479
Con Ed-LIPA***	-300	N/A	N/A	-300	-327	27
Total	**2090**	**0**	**0**	**2090**	**531**	**1559**

**Data throughout this report reflects actual operating data from the identified time interval*
*** Controllable ties have a TRM of zero since they can be continuously and precisely controlled*
*** Wheel agreement between LIPA and Con Ed allows for up to 300MW to be wheeled through LIPA to Con Ed

Fall Peak Load - Long Island

Load 4,887 MW on 09/08/2015 16:18:00*

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
NPX-1385	200	0	0	200	95	105
NPX-CSC	330	0	0	330	0	330
PJM-NEPTUNE	660	0	0	660	0	660
Spr-Dunw S (Y50 & Y49)	1200	N/A	N/A	1200	150	1050
Con Ed-LIPA***	-300	N/A	N/A	-300	-16	-284
Total	**2090**	**0**	**0**	**2090**	**229**	**1861**

**Data throughout this report reflects actual operating data from the identified time interval*
*** Controllable ties have a TRM of zero since they can be continuously and precisely controlled*
*** Wheel agreement between LIPA and Con Ed allows for up to 300MW to be wheeled through LIPA to Con Ed

Summary- Long Island*

Interface Name	Winter Peak		Spring Peak		Summer Peak		Fall Peak	
	TTC	Scheduled	TTC	Scheduled	TTC	Scheduled	TTC	Scheduled
NPX-1385	200	105	200	200	200	200	200	105
NPX-CSC	0	0	330	330	330	330	330	330
PJM-NEPTUNE	660	425	660	277	660	523	660	660
Spr-Dunw S (Y50 & Y49)	1200	1048	1200	398	1200	479	1200	1050
Con Ed-LIPA	-300	-237	-300	-261	-300	27	-300	-284
Total	**1760**	**1341**	**2090**	**944**	**2090**	**1559**	**2090**	**1861**

**Data pulled from slides 21 through 24.*

Winter Peak Load - NYC

Load 7,645 MW on 01/08/2015 17:40:00*

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
A-B-C	1000	0	0	1000	-19	1019
Linden VFT	315	0	0	315	25	290
PJM -HTP	660	0	0	660	355	305
Spr- Dunw S	4600	100	0	4500	1065	3435
Total	**6575**	**100**	**0**	**6475**	**1426**	**5049**

**Data throughout this report reflects actual operating data from the identified time interval*
*** Controllable ties have a TRM of zero since they can be continuously and precisely controlled*

Spring Peak Load – NYC

Load 8,563 MW on 05/28/2015 16:24:00*

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
A-B-C	1000	0	0	1000	173	827
Linden VFT	315	0	0	315	0	315
PJM –HTP	660	0	0	660	600	60
Spr-Dunw S	4350	100	0	4250	2380	1870
Total	**6325**	**100**	**0**	**6225**	**3153**	**3072**

**Data throughout this report reflects actual operating data from the identified time interval*
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Summer Peak Load - NYC

Load 10,635 MW on 07/20/2015 15:49:00*

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
A-B-C	1000	0	0	1000	80	920
Linden VFT	315	0	0	315	315	0
PJM –HTP	660	0	0	660	660	0
Spr-Dunw S	4350	100	0	4250	1512	2738
Total	**6325**	**100**	**0**	**6225**	**2567**	**3658**

**Data throughout this report reflects actual operating data from the identified time interval*

*** Controllable ties have a TRM of zero since they can be continuously and precisely controlled*

Fall Peak Load - NYC*

Load 10,410 MW on 09/08/2015 16:26:00

Interface Name	TTC	TRM**	CBM	Adjusted TTC	ATC	Scheduled
A-B-C	1000	0	0	1000	-101	1101
Linden VFT	315	0	0	315	315	0
PJM –HTP	660	0	0	660	600	60
Spr-Dunw S	4350	100	0	4250	2205	2987
Total	**6325**	**100**	**0**	**6225**	**3019**	**4148**

**Data throughout this report reflects actual operating data from the identified time interval*

*** Controllable ties have a TRM of zero since they can be continuously and precisely controlled*

Summary- NYC*

Interface Name	Winter Peak		Spring Peak		Summer Peak		Fall Peak	
	TTC	Scheduled	TTC	Scheduled	TTC	Scheduled	TTC	Scheduled
A-B-C	1000	1019	1000	827	1000	920	1000	1101
Linden VFT	315	290	315	315	315	0	315	0
PJM –HTP	660	305	660	60	660	0	660	60
Spr-Dunw S	4600	3435	4350	1870	4350	2738	4350	2987
Total	**6575**	**5049**	**6325**	**3072**	**6325**	**3658**	**6325**	**4148**

**Data pulled from slides 26 through 29.*

Comparison with 2012 SIL report

Winter				
Peak Load (MW)	**2012**		**2015**	
	24,137		24,893	
Interface Name	**2012**		**2015**	
	TTC	**Scheduled**	**TTC**	**Scheduled**
HQ-CEDARS	199	0	199	0
HQ-NYISO	1200	528	1310	110
IMO-NYISO	2000	502	1900	1402
ISONE-NYISO	1300	0	1400	0
NPX-1385	200	200	200	105
NPX-CSC	340	330	0	0
PJM-NEPTUNE	660	660	660	425
PJM-NYISO	2700	776	2450	1526
PJM-LINDEN VFT	300	75	315	290
PJM-HTP	N/A	N/A	660	260
Total	**8899**	**3071**	**9094**	**4118**

Comparison with 2012 SIL report

Spring				
Peak Load (MW)	2012		2015	
	28,470		24,418	
Interface Name	2012		2015	
	TTC	Scheduled	TTC	Scheduled
HQ-CEDARS	80	80	95	0
HQ-NYISO	1200	1199	1310	1182
IMO-NYISO	1900	1600	1500	1200
ISONE-NYISO	1500	1127	1150	182
NPX-1385	200	187	200	200
NPX-CSC	330	330	330	0
PJM-NEPTUNE	0	0	660	660
PJM-NYISO	2650	1716	2200	723
PJM-LINDEN VFT	300	100	315	0
PJM-HTP	N/A	N/A	660	0
Total	**8160**	**6339**	**8420**	**4147**

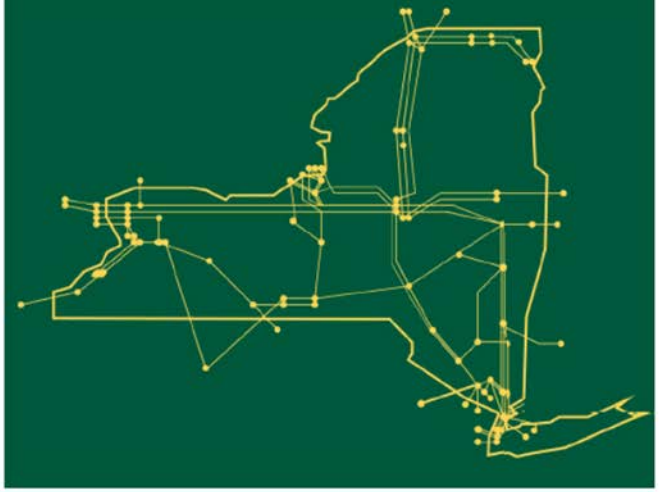
Comparison with 2012 SIL report

Summer				
Peak Load (MW)	2012		2015	
	32,587		31,266	
Interface Name	2012		2015	
	TTC	Scheduled	TTC	Scheduled
HQ-CEDARS	190	190	190	130
HQ-NYISO	1200	1200	1310	1310
IMO-NYISO	1900	234	1900	464
ISONE-NYISO	1500	100	1400	360
NPX-1385	200	200	200	45
NPX-CSC	330	330	330	330
PJM-NEPTUNE	0	0	660	660
PJM-NYISO	3000	50	2300	387
PJM-LINDEN VFT	300	0	315	0
PJM-HTP	N/A	N/A	660	0
Total	**8620**	**2304**	**9265**	**3686**

Comparison with 2012 SIL report

Fall				
Peak Load (MW)	2012		2015	
	28,296		31,179	
Interface Name	2012		2015	
	TTC	Scheduled	TTC	Scheduled
HQ-CEDARS	190	0	130	80
HQ-NYISO	1200	1200	1310	1266
IMO-NYISO	1650	592	1900	835
ISONE-NYISO	1400	419	1400	0
NPX-1385	200	175	200	105
NPX-CSC	330	330	330	330
PJM-NEPTUNE	660	375	660	660
PJM-NYISO	3000	50	2300	816
PJM-LINDEN VFT	300	0	315	0
PJM-HTP	N/A	N/A	660	60
Total	**8930**	**3141**	**9205**	**4152**

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



www.nyiso.com