

2015-2016 Winter Capacity Assessment & Winter Preparedness

Wes Yeomans

Vice President – Operations

New York Independent System Operator

Management Committee

December 17, 2015

Radisson Hotel, Albany, NY

Agenda

- ◆ **Winter 2015-16 Capacity Assessment**
- ◆ **Winter Preparedness**
- ◆ **Status of FERC Order 809**
- ◆ **Continued Gas-Electric Issues**

Winter Assessment Summary

- ◆ Includes capacity changes since 2015 Gold Book:
 - *75 MW of retirements*
 - *374 MW of increases*
- ◆ Two Weather Scenarios:
 - *Normal*
 - *90/10 Cold Weather*
- ◆ Two Fuel Cases:
 - *Base Case*
 - *Loss of Gas Scenario*
- ◆ Southeastern NY Transmission Security Review

2015-2016 Capacity Margins (MW)				
	Base Case		Loss of Gas Case	
Region	Normal Weather	90/10 Weather	Normal Weather	90/10 Weather
NYCA	9,068	7,486	5,417	3,835
SE Region (N-1-1)	9,180	8,576	7,505	6,901

NYCA Winter Installed Capacity Assessment - Base Case

Line	Item	2015-2016 Baseline Forecast	2015-2016 90th Percentile Forecast
1a	Installed Capacity Resources	41,312	41,312
1b	SCR - ICAP Values	885	885
1c	Net ICAP External Imports	338	338
1	NYCA Resource Capability	42,535	42,535
2	Total Projected Capacity Outages	6,332	6,332
3	Net Installed Capacity Resources	36,203	36,203
4	Load Forecast	24,515	26,097
5	Operating Reserve Requirement	2,620	2,620
6	Capacity Margin	9,068	7,486

During last year's Winter Peak (*January 7, 2015*)

- **Actual winter peak -- 24,638 MW**
- **All-time winter peak -- 25,738 MW (*Set on January 7, 2014*)**

NYCA Winter Installed Capacity Assessment - Loss of Gas

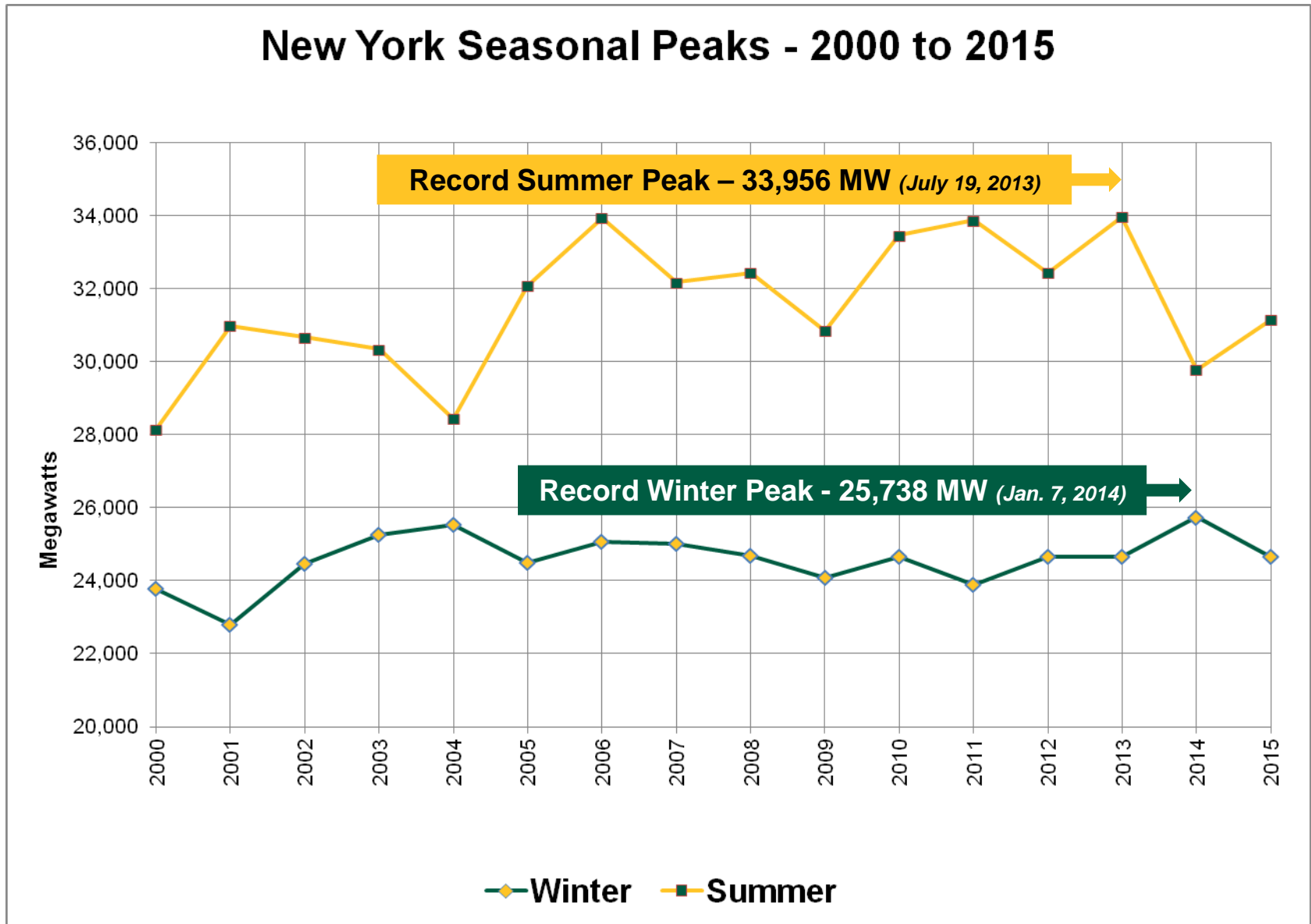
Line	Item	2015-2016 Baseline Forecast	2015-2016 90th Percentile Forecast
1a	Installed Capacity Resources	41,312	41,312
1b	SCR - ICAP Values	885	885
1c	Net ICAP External Imports	338	338
1	NYCA Resource Capability	42,535	42,535
2	Total Projected Capacity Outages	6,332	6,332
3 = (1-2)	Net Installed Capacity Resources	36,203	36,203
4	Load Forecast	24,515	26,097
5	Operating Reserve Requirement	2,620	2,620
6 = (3-4-5)	Capacity Margin	9,068	7,486
7a	Subtract All Gas Only Units	6,540	6,540
7 = (6-7a)	Capacity Margin, Loss of Gas	2,528	946
8a	Add Back Units with Firm Gas Contracts	2,889	2,889
8 = (7-8a)	Expected Capacity, Loss of Gas Case	5,417	3,835

Southeastern New York: Winter Transmission Security - Base Case

Line	Item	2015-2016 Baseline Forecast	2015-2016 90th Percentile Forecast
1a	Generation Capacity Resources	15,684	15,684
1b	Net ICAP External Imports	338	338
1c	Transmission Capability from UPNY to SENY (N-1-1)	3,450	3,450
1d	Transmission Capability, Long Island to NYC	250	250
1	Total Capability	19,722	19,722
2	Projected Capacity Outages	0	0
3 = (1-2)	Total Capability	19,722	19,722
4	Load Forecast	10,542	11,146
6 = (3-4-5)	Capacity Margin	9,180	8,576

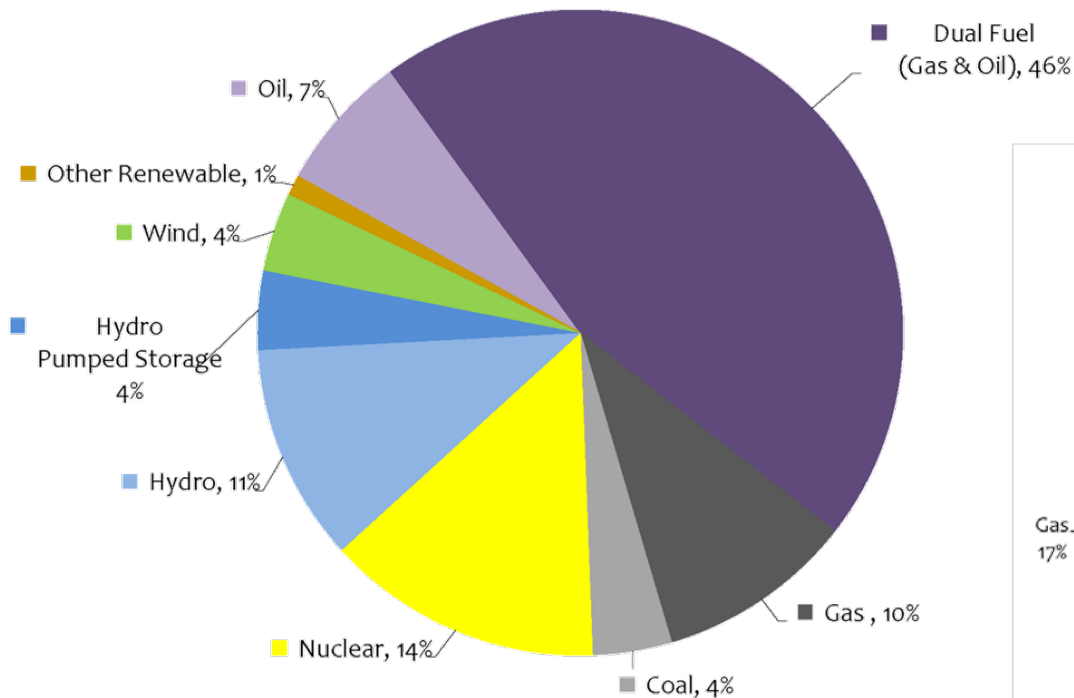
Transmission security assessments assume all generation capacity is available and do not include Demand Response resources

New York Seasonal Peaks - 2000 to 2015

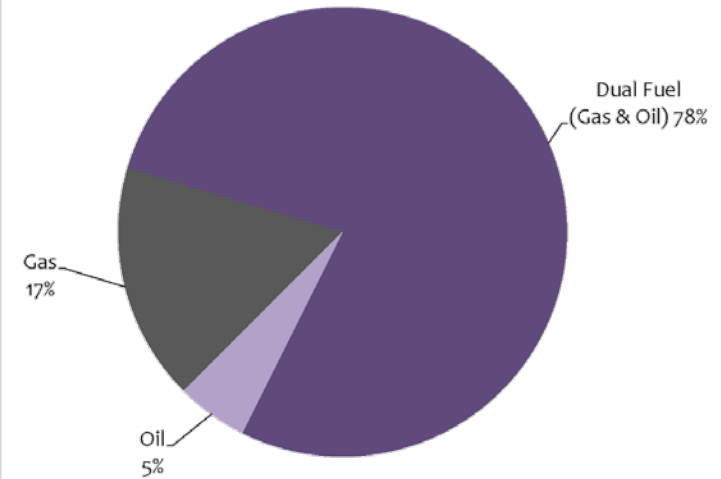


New York Fuel Mix

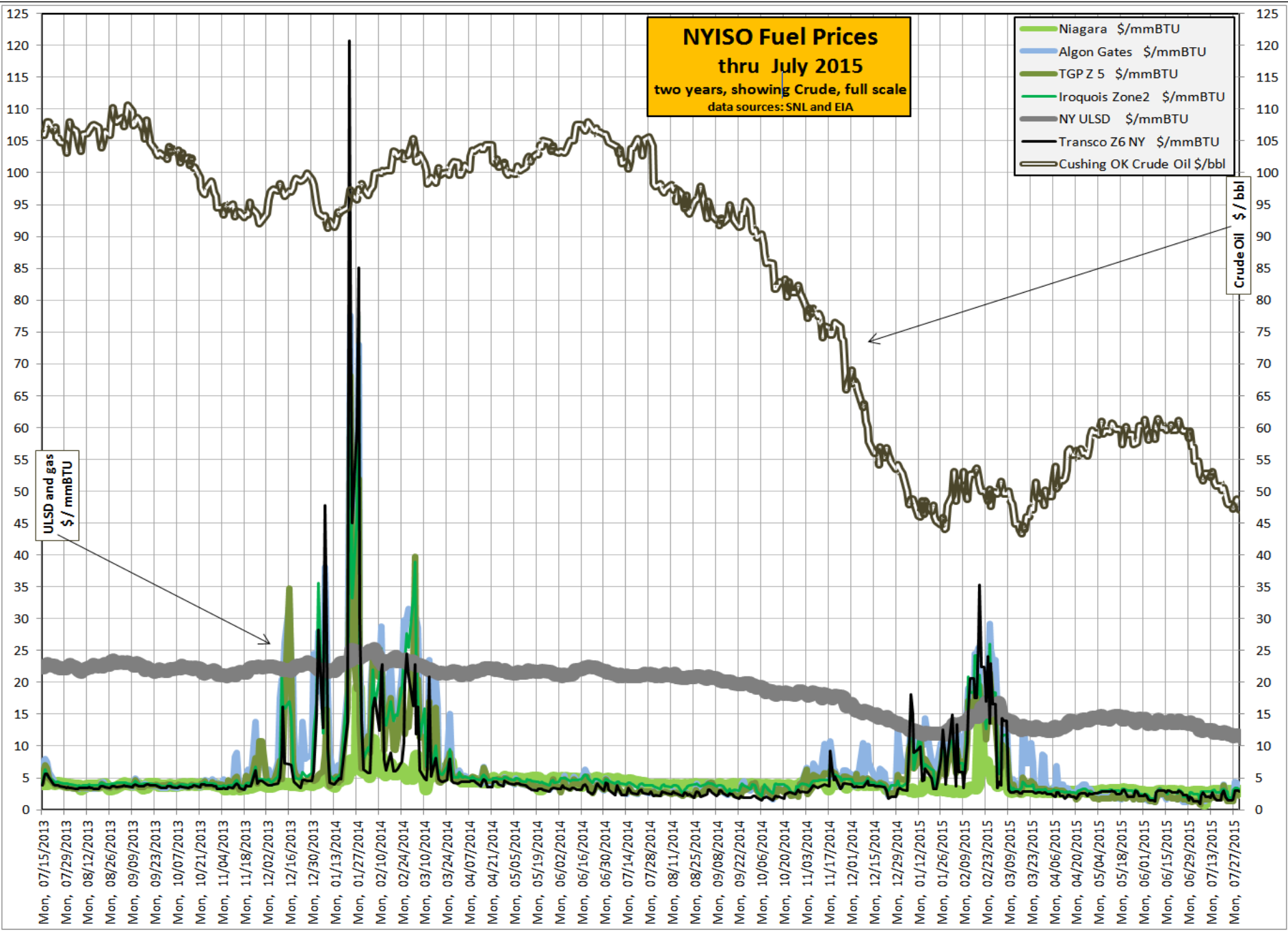
Generating Capacity in New York State by Fuel Source -
Statewide: 2015



Generating Capacity in New York State by Fuel Source -
New York City: 2015



SOURCE: *Power Trends 2015*, New York Independent System Operator, June 2015



Winter Preparedness

- ◆ **NYISO issued the winter preparedness fuel surveys and reviewed the status of starting oil inventories, oil replacement arrangements, and gas transportation arrangements**
 - *Web-based fuel application is now available*
- ◆ **Continued gas-electric support position in NYISO's Control Room**
- ◆ **NYISO has ensured that a communications protocol is in-place to improve speed and efficiency for state agencies to evaluate potential generator requests for emissions waivers if needed for reliability**

Winter Preparedness, cont.

- ◆ **Infrastructure maintenance coordination**
 - *NYISO Operations has coordinated gas pipeline, generator, and transmission maintenance schedules*
- ◆ **NYISO's Market Mitigation & Analysis Department visited certain generating stations to review maintenance and testing preparations**
- ◆ **Updated Minimum Oil Burn requirements were approved at the November Operating Committee**

Operator Awareness

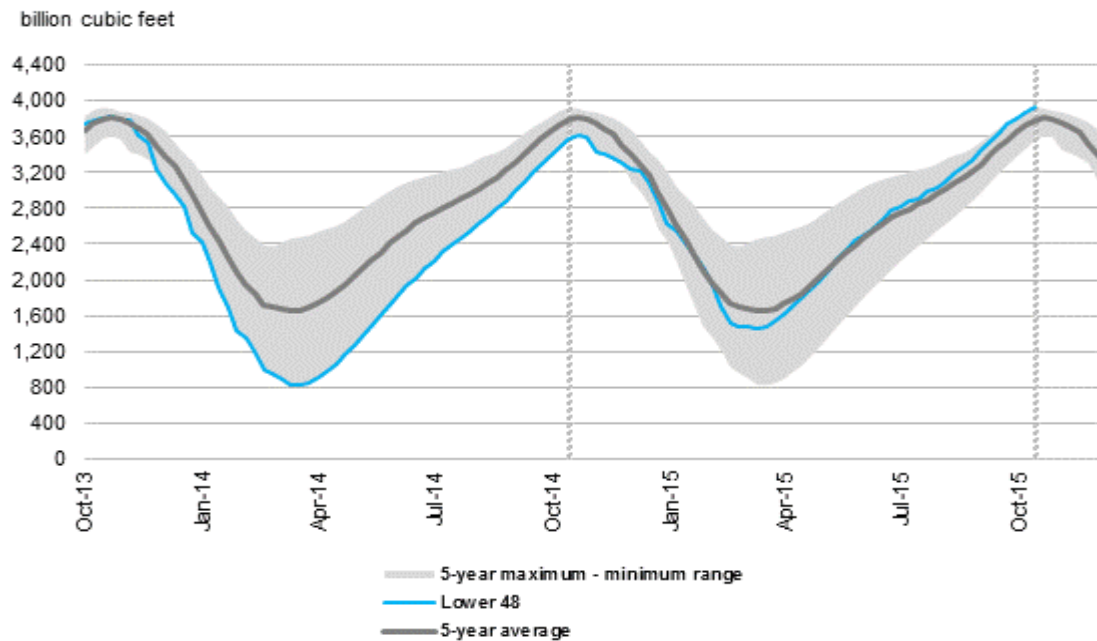
- ◆ **Northeast interstate pipelines displayed on Control Room Video Board**
 - *Operational Flow Orders are posted with enhanced brightness on the Video Board*
- ◆ **Will begin to design enhanced operator awareness displays reflective of the Fuel Availability Reporting**


Market Enhancements

- ◆ **Enhanced reserve shortage pricing curves (November 4, 2015) to better value energy & reserves during tight operating conditions**
 - *Increase total operating reserves secured in the market*
- ◆ **Market design concept for Fuel Constrained Bidding presented at November BIC & OC**
- ◆ **Continue to work with stakeholders to evaluate capacity market enhancements to encourage fuel assurance investments**

Weekly Natural Gas Storage Report

Working gas in underground storage compared with the 5-year maximum and minimum



 Source: U. S. Energy Information Administration

Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2010 through 2014.

Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate current and year-ago weekly periods.

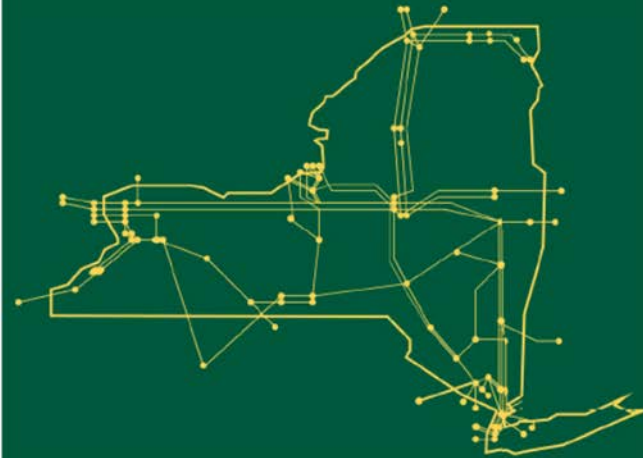
FERC Order 809 (4/16/2015)

- ◆ **Adopts two proposals submitted by NAESB**
 - *Revises Nomination Timeline*
 - Timely Nomination schedule moved from 12:30 PM to 2:00 PM EST
 - *Adds a third intraday nomination cycle*
- ◆ **Declines to change the gas day to align with the power day**
- ◆ **RTO/ISOs must either file proposed market timing changes to provide generators time to arrange day ahead gas nominations or file why market timing changes are not necessary.**
 - *On July 23 the NYISO submitted a compliance filing stating that existing practices satisfy the timing requirements*
 - *On November 9 FERC accepted NYISO's compliance filing.*

Continued Cold Weather Gas-Electric Issues

- ◆ **Gas Availability**
 - *Gas LDC retail load has gas transportation priority across the Gas LDC's and firm transportation service on the interstate pipeline system*
 - *The interstate gas pipeline system is heavily constrained to eastern NY, New York City, and Long Island during cold weather conditions*
- ◆ **Extended Cold Weather Conditions**
 - *Burn rates of alternative fuels can exceed replacement rates of alternative fuels during extended cold weather -- resulting in reduced generation*
- ◆ **NOx Restrictions**
 - *Generator switching from gas to oil in some instances result in capacity limitations due to newer, more restrictive NOx emission limitations*
- ◆ **Becoming more challenging for generation to burn oil**
 - *More restrictive NOx emission limitations, less Northeast refinery capability, and upcoming rigorous Clean Power Plan carbon targets*
- ◆ **Gas pipeline siting remains challenging**

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