

Fuel Assurance Initiative: Background

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ICAP WG/MIWG

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Krey Control Center, Rensselaer

Today

- ◆ Today's meeting is focused on background information so that we can begin discussing possible capacity market changes late October/November
- ◆ Agenda:
 - *National Trends*
 - *Winter 2013 – 2014*
 - *Looking to the future/Fuel Assurance Initiative*
 - *Next Steps*

National Trends

Figure ES-5. Electricity generation by fuel in the Reference case, 1990-2040 (trillion kilowatthours)

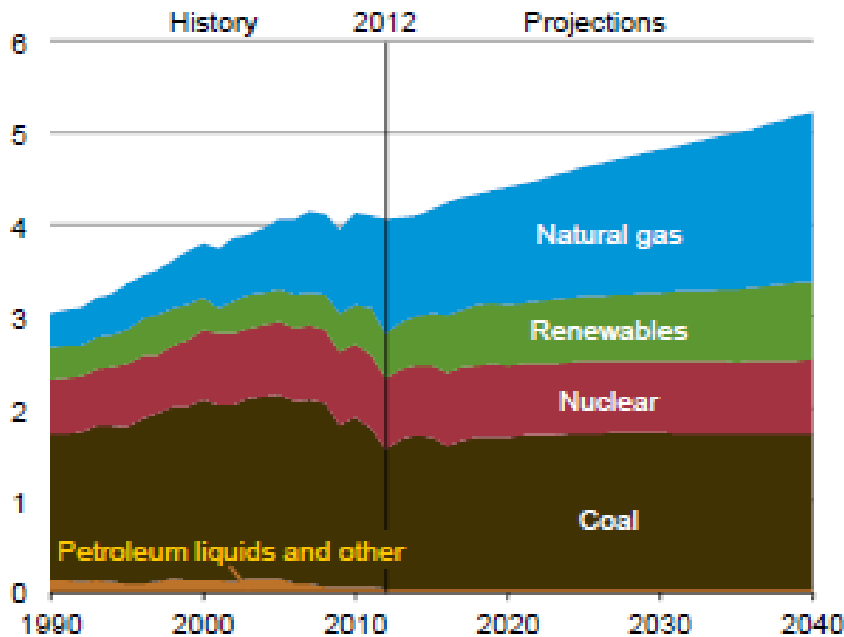
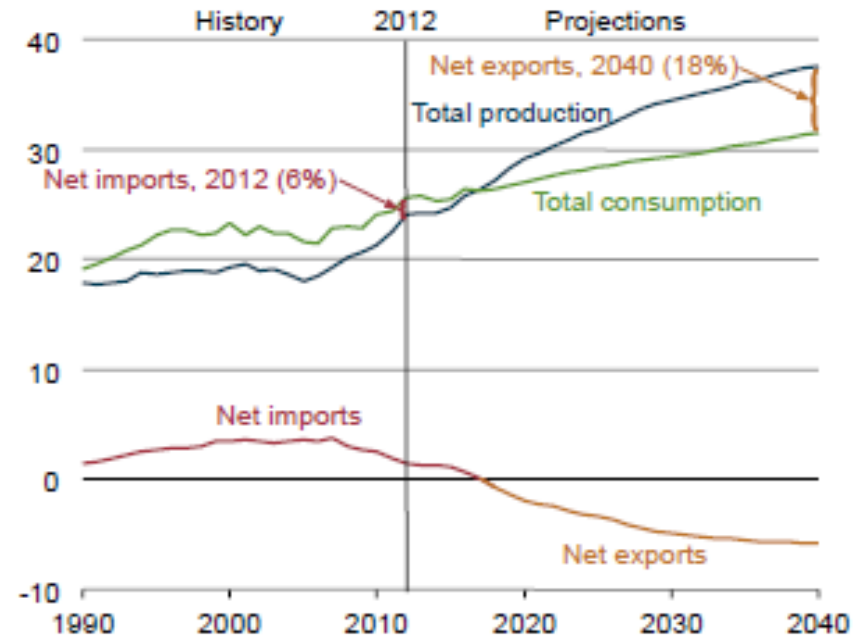


Figure MT-42. Total natural gas production, consumption, and imports in the Reference case, 1990-2040 (trillion cubic feet)



Source: EIA Annual Energy Outlook with projections to 2040, April 2014.

The background of the slide is a microscopic image of ice crystals, showing a dense field of intricate, star-like and needle-like structures in shades of blue and white. A white rectangular box is centered over the image, containing the text "Winter 2013 – 2014".

Winter 2013 – 2014

Operations Overview

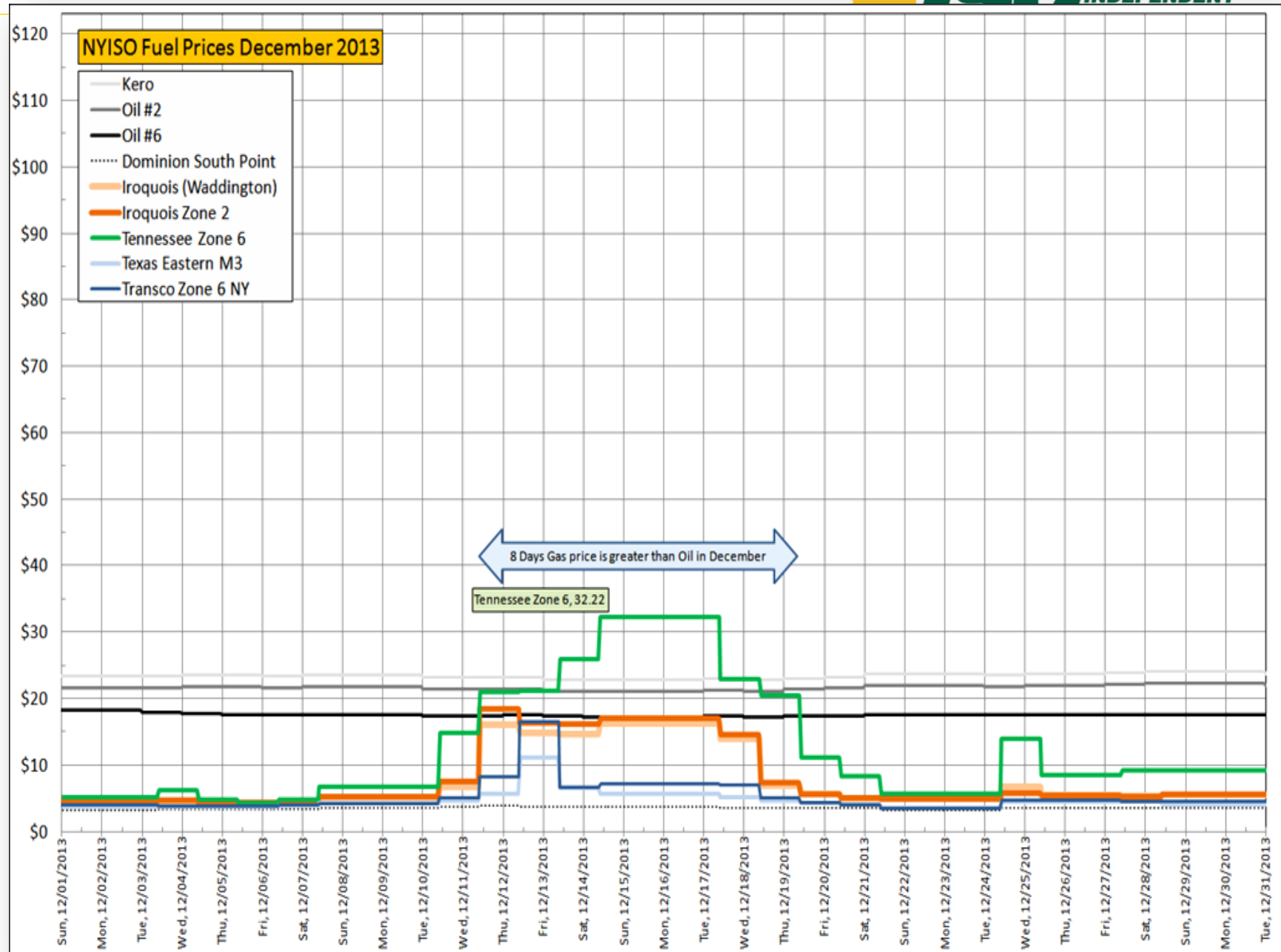
- ♦ Winter 2013-2014 included 5 major “Cold Snaps”
 - *Including 3 Polar Vortexes that extended across much of the country*
- ♦ On January 7, NYISO set a new record Winter Peak load of 25,738 MW
 - *25,541 MW -- Prior record winter peak load set in 2004*
- ♦ Primary operational issues during early January
 - *Cold weather equipment issues and gas-only generator outages*
- ♦ Primary operational issues during late January
 - *Oil inventory monitoring and management – associated with potential fuel depletions that could lead to capacity de-rates*

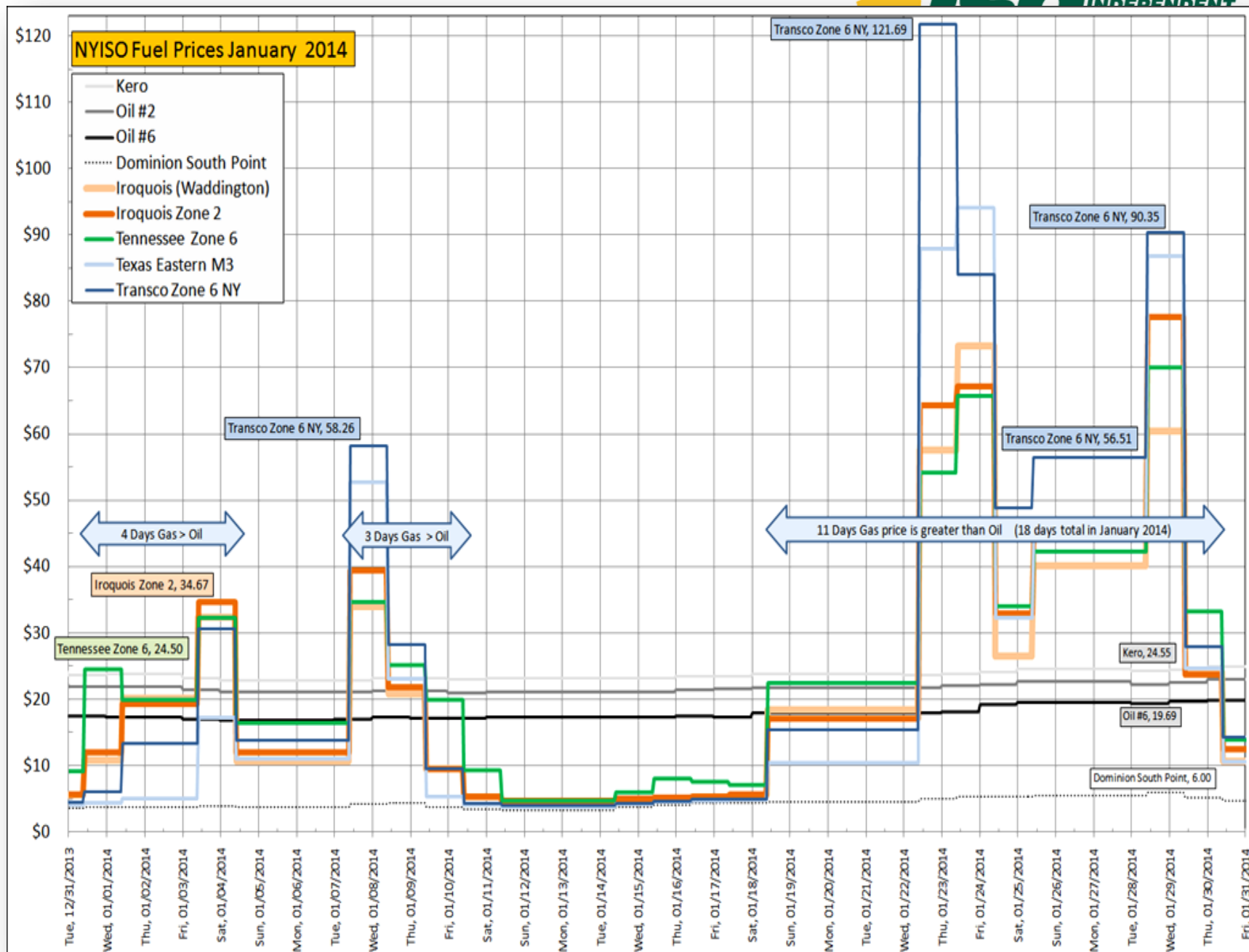
Market Outcomes

- ◆ Winter 2013-2014 was characterized by many days of gas prices exceeding oil prices
 - *Resulting in high levels of economic scheduling of oil-fired generation*
- ◆ Load weighted electric LBMP for January was \$183/MWh
 - *176% increase over December 2013*
- ◆ Natural gas prices (*as indexed at Transco Zone 6 for NYC area*) averaged \$27.43/MMBTU
 - *~ 400% increase over December 2013*

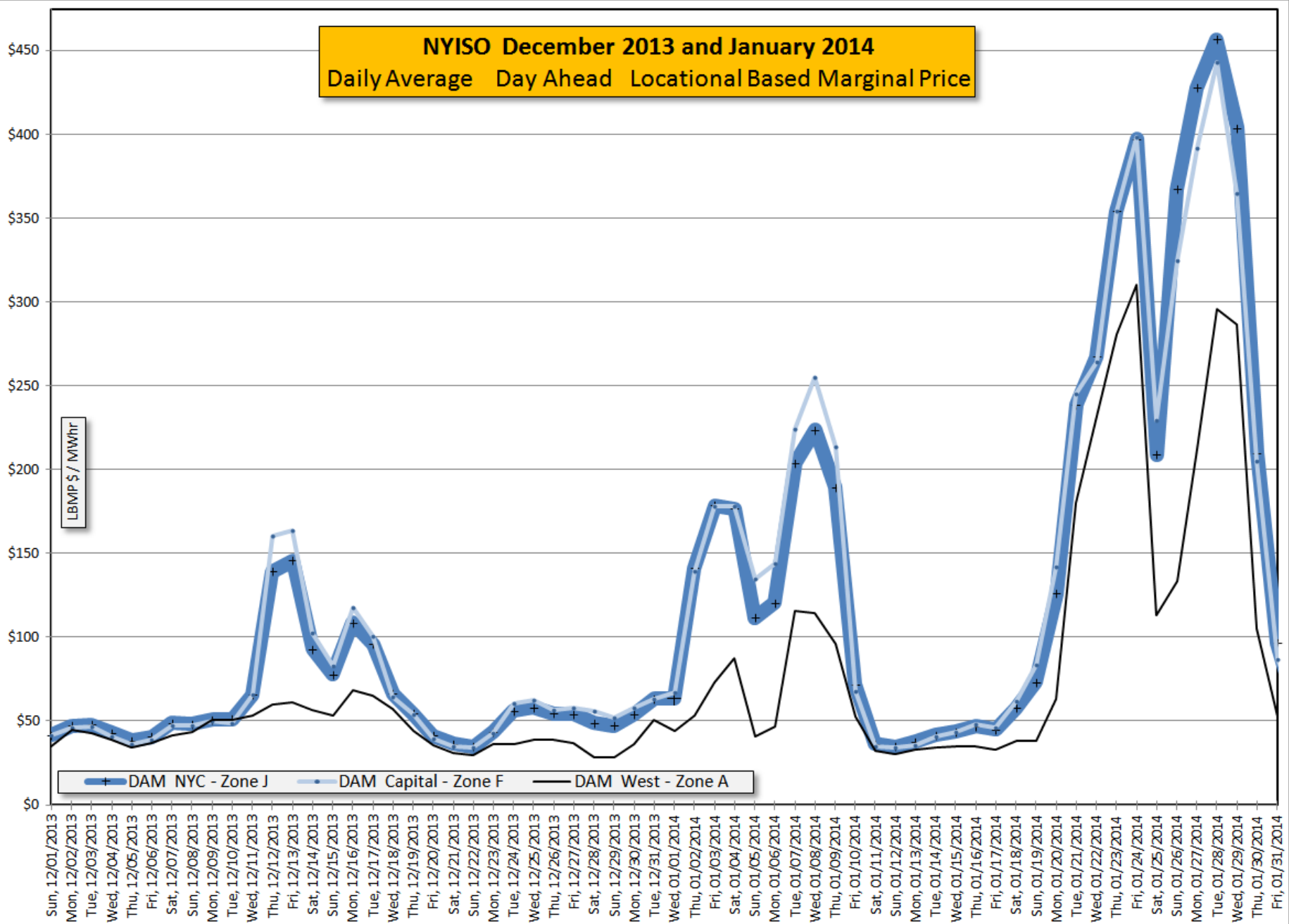
Market Outcomes

- ◆ LBMP energy increases at less than half the natural gas price increases is indicative of NYISO market systems selecting lower-cost resources – primarily dual-fuel units capable of operating on oil
- ◆ NYISO requested -- and FERC granted -- a waiver request for supplier recovery of costs in excess of the \$1,000/MWh offer cap – effective January 22 – February 28.
 - *No supplier requested compensation for offers not covered by their bids.*





NYISO December 2013 and January 2014
Daily Average Day Ahead Locational Based Marginal Price



Operational Considerations

Dual Fuel Observations for extreme cold days

- ♦ For short duration cold weather events, oil-fired generation was capable of receiving oil deliveries at rates close to their oil-burn rates
- ♦ During periods of sustained cold, when oil was economic relative to gas for several consecutive days, there were instances where oil delivery rates could not keep up with oil burn rates

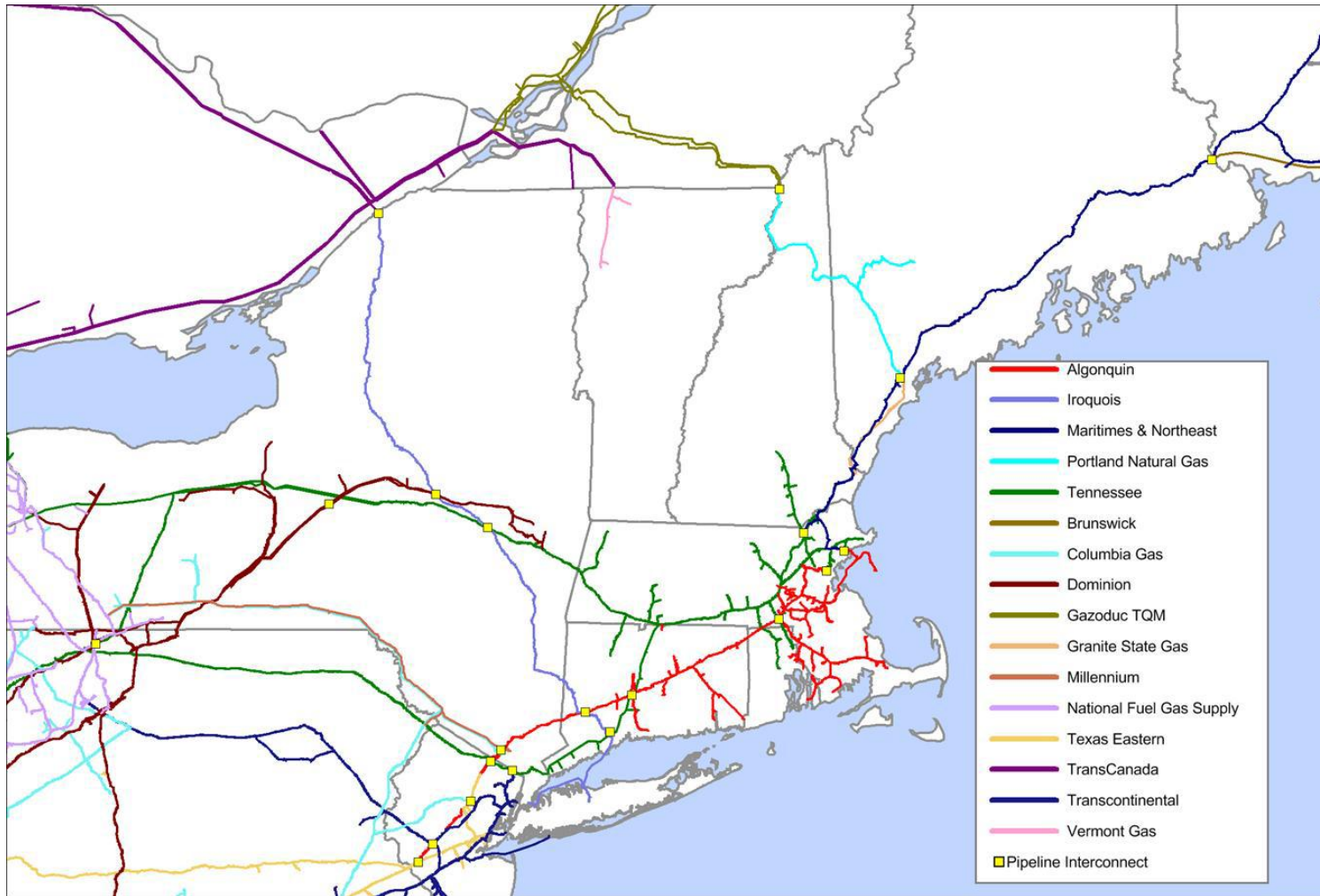
Pipeline-related Observations for extreme cold days

- ♦ Generally, generators with confirmed gas nominations were successful in receiving gas to generate to their day ahead electric commitments, including during times of declared Operational Flow Orders (OFOs) or System Alerts
- ♦ There were instances where generators connected to the interstate pipelines were able to procure and nominate gas intra-day, including instances for NYISO reliability supplemental commitments

Operating Performance

Date	Total Derates	% Fuel/Cold	% Non-Weather or Fuel
Dec. 17, 2013	489 MW	58% (286 MW)	42% (203 MW)
Jan. 3, 2014	2,549 MW	32% (807 MW)	68% (1,743 MW)
Jan. 7, 2014	4,135 MW	54% (2,236 MW)	46% (1,900 MW)
Jan. 21, 2014	900 MW	26% (241 MW)	74% (660 MW)
Jan. 22, 2014	1,162 MW	45% (519 MW)	55% (643 MW)
Jan. 28, 2014	272 MW	15% (39 MW)	86% (233 MW)
Feb. 6, 2014	440 MW	17% (74 MW)	83% (366 MW)
Feb. 7, 2014	493 MW	34% (170 MW)	66% (323 MW)

Gas Pipeline Systems



Fuel Assurance

- ◆ **NYISO needs mechanisms that provide incentives for generation to be available to reliably meet the real-time needs of the NYCA -- especially on days when there is a high risk of a reduction in real-time resource availability due to factors including high demand from neighboring areas and fuel supply uncertainty**
- ◆ **NYISO is calling this the “Fuel Assurance Initiative”**

Looking to the Future

- ◆ **Looking to the future when the conditions may be tighter, due to fuel issues, than they were in Winter 2013-2014.**
- ◆ **Want to set up the incentives ahead of the need**

Fuel Assurance Initiative

- ◆ **Multiple components:**
 - *Energy & Ancillary Service Market Changes,*
 - *Capacity Market Changes.*
- ◆ **Multi-phase with implementation over the next several years.**
- ◆ **The first task will be working on identifying components of the initiative to meet NY needs.**

Fuel Assurance Initiative

**Incent
Intra-day
Operational
Flexibility**

**Promote
Increased
Resource
Availability
and
Performance**

The NYISO's Efforts

Capacity Market

- *Ways to better
incent and reflect
performance*
- *Possible separate
Summer/Winter
EFORd*
- ...

Energy Market

- *Comprehensive
Shortage Pricing*
- *Comprehensive
Scarcity Pricing*
- *RLS Changes*
- ...

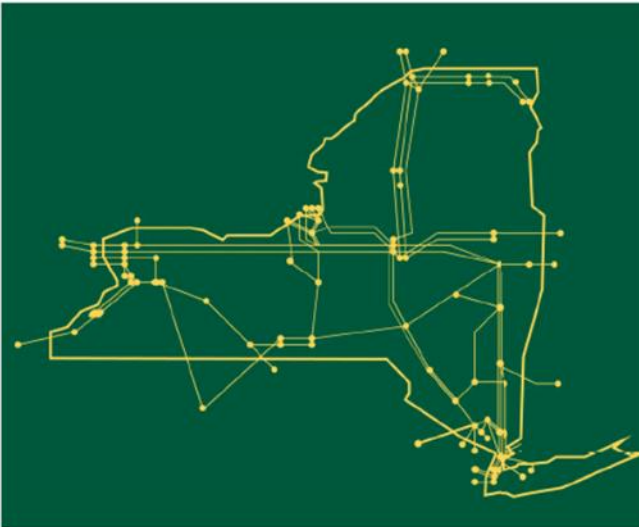
Gas-Electric Coordination

- *EMS Visualization of
Gas System*
- *Gas Operational
Information Sharing*
- *Fuel Availability Self
Reporting project*
- ...

Next Steps

- ◆ The NYISO welcomes all comments on how we can achieve incentives for reliable operation and broad stakeholder support.
 - *Written comments can be sent to Debbie Eckels deckels@nyiso.com*
 - *Please comment by October 22, if possible.*
- ◆ Intend to start discussing possible Capacity Market changes in late October/November

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.



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