Winter 2013-2014 Cold Snap Operations

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Management Committee Meeting
KCC – Rensselaer, NY
February 27, 2014

DRAFT – FOR DISCUSSION PURPOSES ONLY

Summary

- **Winter 2013-2014 has included five major "Cold Snaps" including Polar Vortex conditions that extended across much of the country**
- **On January 7, the NYISO set a new, all-time Winter Peak load of 25,738 MW**
  - ***25,541 MW*** ***Prior winter all-time peak load set in 2004***
  - ***24,709 MW*** ***"1 in 2" Forecast Winter Peak for 2013-14***
  - ***26,307 MW*** ***"1 in 10" Forecast Winter Peak for 2013-14***
- **Many other ISOs and utilities set all-time Winter Peaks, including PJM, MISO, TVA, and Southern Company**

Summary

- **The Winter of 2013-2014 has been characterized by many days of gas prices exceeding oil prices -- resulting in high levels of economic scheduling of oil-fired generation**
- **The majority of oil-fired generation was able to be replenished by either barge or truck deliveries at rates close to their oil-burn rates**
- **The cooperation and accuracy of the daily fuel inventory information from Generating Stations was excellent**

Summary

- **The majority of gas-only generators connected to interstate pipelines was not economically scheduled during these five cold snaps due to the extremely high gas prices -- but were able to secure gas in response to the NYISO's supplemental requests for generation**
- **A limited amount of gas-fired generation capability connected to the NYC LDC gas systems was able to secure gas in response to NYISO or TO requests for operation during these cold snaps**
- **The primary operational issues during the first three cold snaps were cold weather equipment issue and gas-only generator outages**
- **The primary operational issues during the last two cold snaps were oil inventory monitoring and management**

Fuel Adequacy Monitoring

- **For each Cold Snap the NYISO monitored fuel inventories**

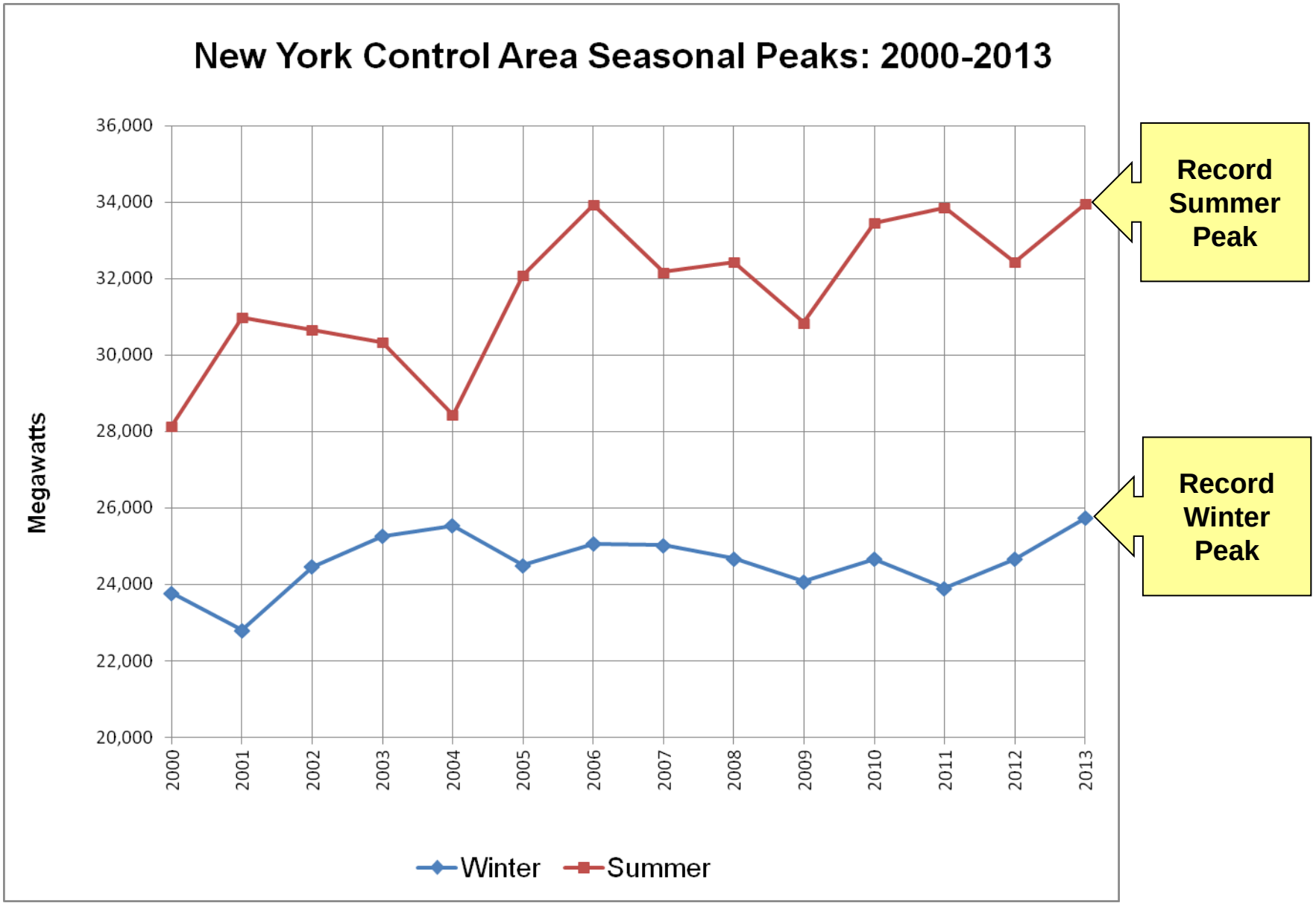
  + Starting Daily Oil Inventory

  - Projected Oil Burn Rates Out Seven Days (reflective of gas projections)

  + Projected Oil Replacement Deliveries

  = Forecast Inventories Out Seven Days)

- **The primary challenges were:**
  - ***Evaluating generator fuel purchasing uncertainty***
  - ***Evaluating the accuracy of gas capability in the event oil deliveries were not made***

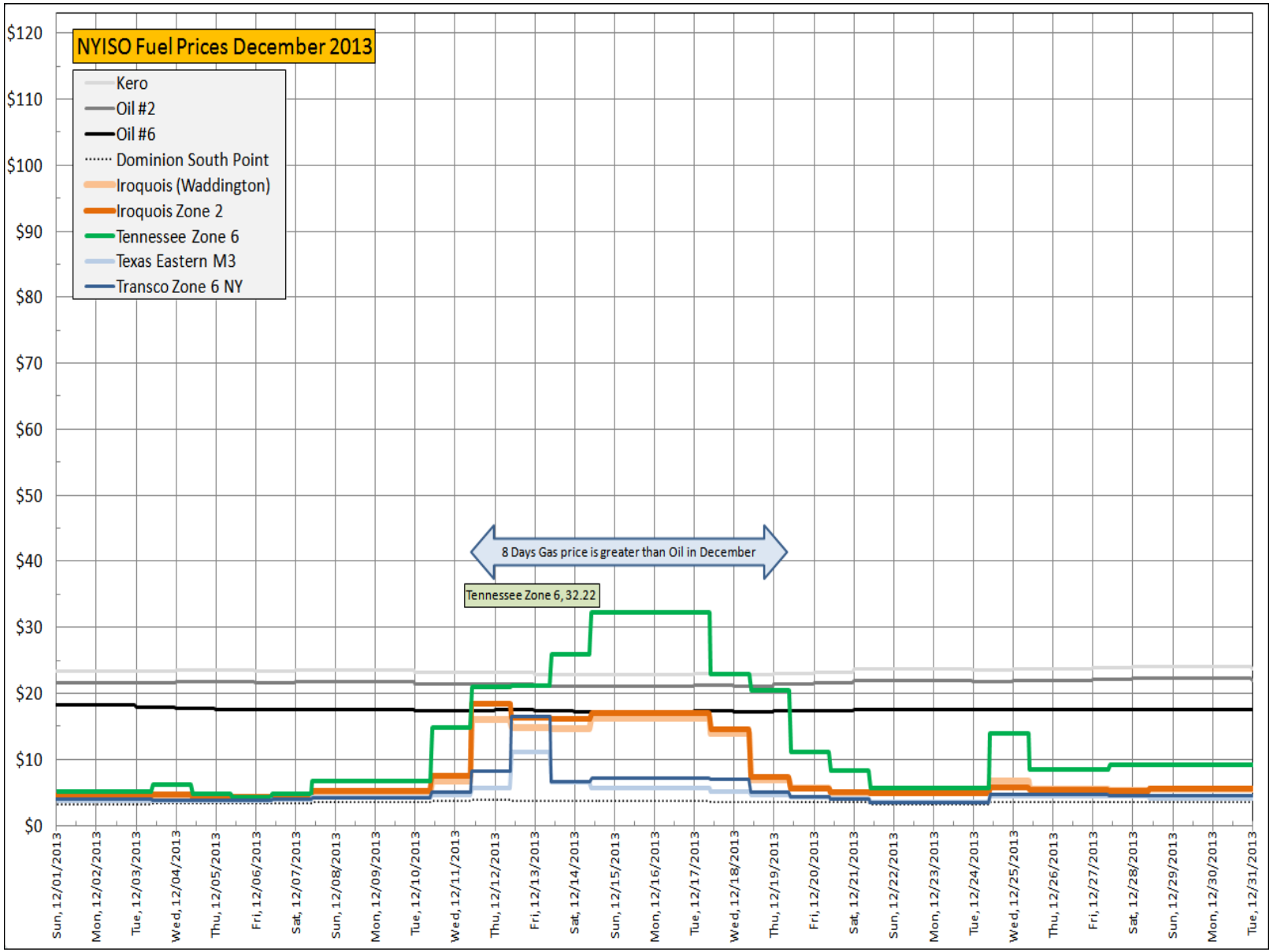


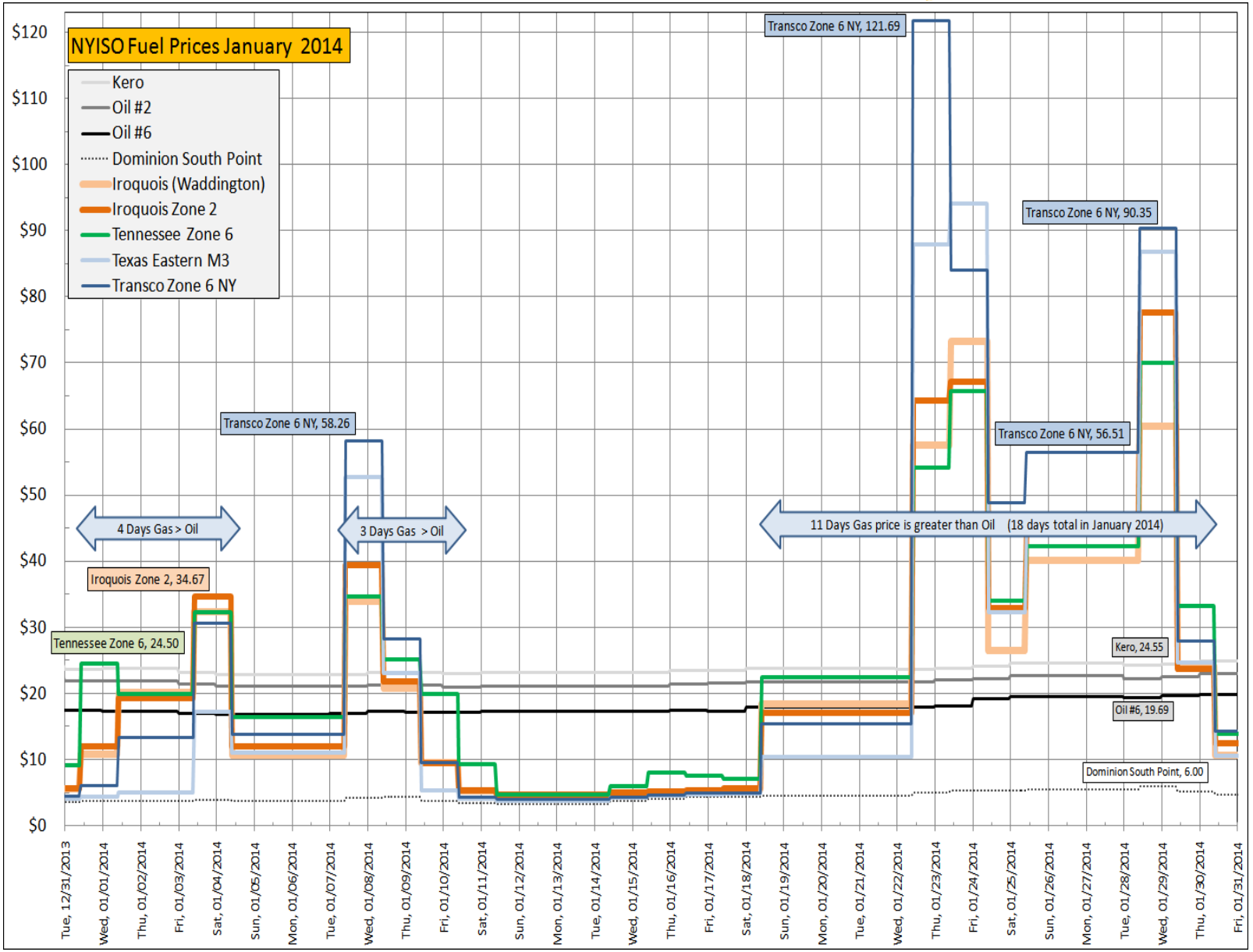
Cold Day Interchange, Derates, Wind

Date	Peak	HQ +in	NE + in	OH +in	PJM +in	Total Gen Derate	Fuel & Cold	Non Fuel Non Weather	Wind
12-17-13	24,460	-305	-1128	500	3,289	489	286	203	194
1-3-14	24,413	-140	-658	1,050	2877	2,549	918	1631	372
1-7-14	25,738	314	980	705	-682	4,135	2,233	1,902 IP-2	1,115
1-22-14	25,000	-285	-57	676	441	1,162	418	744	285
1-28-14	24,696	36	-184	1,400	-395	282	110	172	778

Recommendations

- **Explore fuel assurance market rule changes to help assure fuel availability during cold weather conditions**
- **Implement improvements to the seasonal and daily generation fuel inventory reporting requirements and daily replenishment schedules during cold weather events**
- **Work with NY State regulatory agencies to develop a formal process for the NYISO to identify reliability needs that could be mitigated by generator requests for emissions-related waivers and/or fuel oil transportation waivers**





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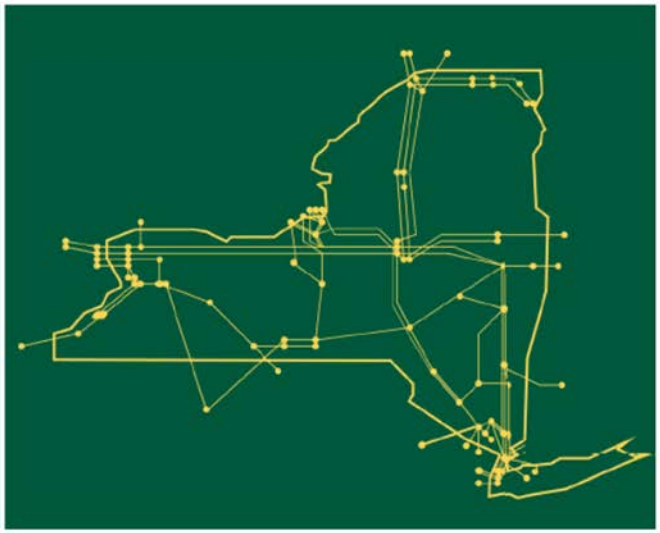

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