

Presentation of Quarterly Report on the New York ISO Electricity Markets Second Quarter 2014

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Market Issues Working Group August 25, 2014



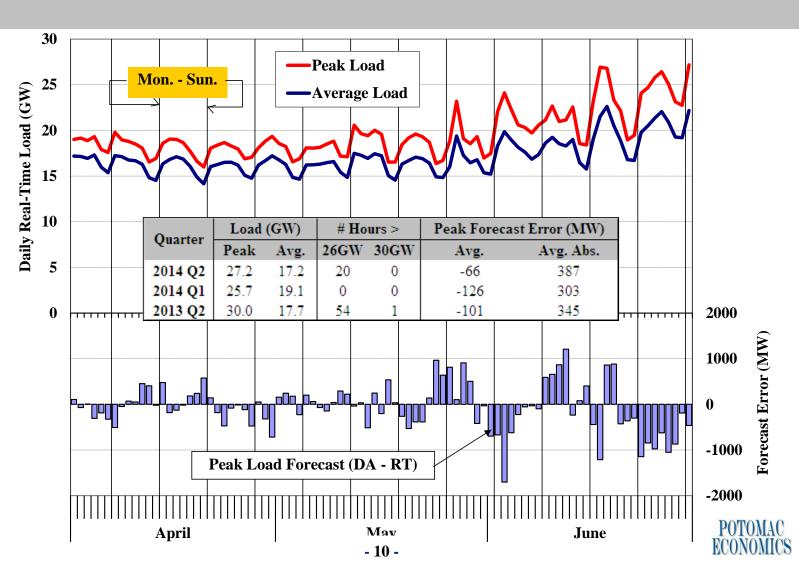


Highlights and Market Summary: Energy Market

- This report summarizes market outcomes in the second quarter of 2014.
- The energy markets performed competitively and variations in wholesale prices were driven primarily by changes in fuel prices, demand, and supply availability.
- Low natural gas prices and load levels resulted in low energy prices, congestion, and uplift charges in the second quarter of 2014.
 - ✓ Average load (17.2 GW) fell 3 percent and peak load (27.2 GW) fell 10 percent from the second quarter of the previous year primarily because of mild weather.
 - Both average and peak load levels were the lowest in the past five years.
 - Average natural gas prices fell 11 percent in Western NY (\$3.47/MMBtu) and 15 percent in NYC (\$3.61) from the second quarter of the previous year.
 - Gas prices in these areas were significantly lower than in most areas of the country (e.g., Henry Hub prices averaged \$4.58/MMbtu this quarter).
- RT LBMPs averaged \$40/MWh statewide, down 13 percent from a year ago.
 - ✓ LBMPs fell most on Long Island (30 percent) because fewer transmission outages resulted in increased imports across the Neptune line and from upstate New York.
 - ✓ However, LBMPs rose modestly in the West Zone because of more transmission constraints on west-to-east flows through the zone.

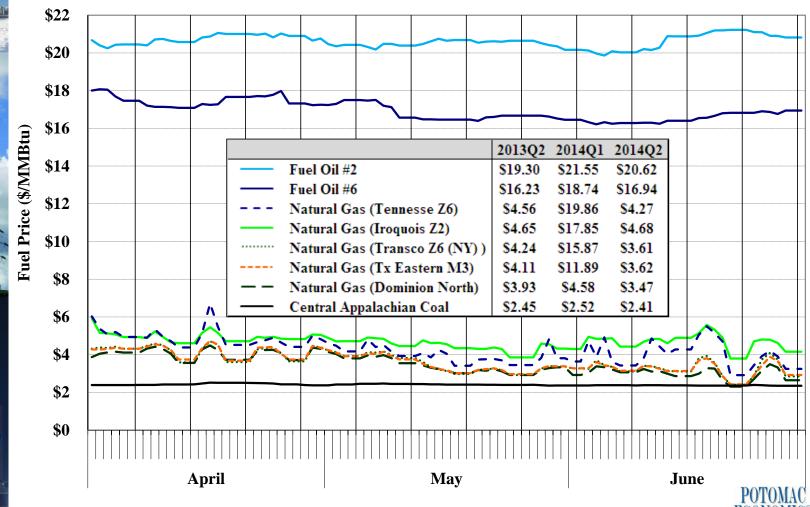


Load Forecast and Actual Load



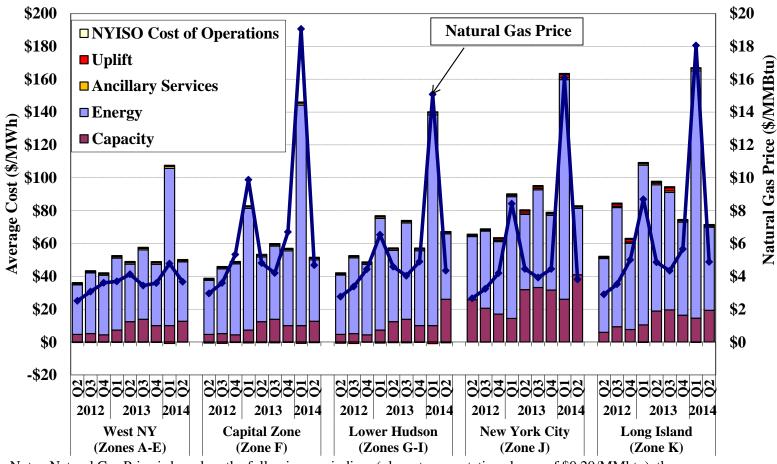


Coal, Natural Gas, and Fuel Oil Prices





All-In Energy Price by Region

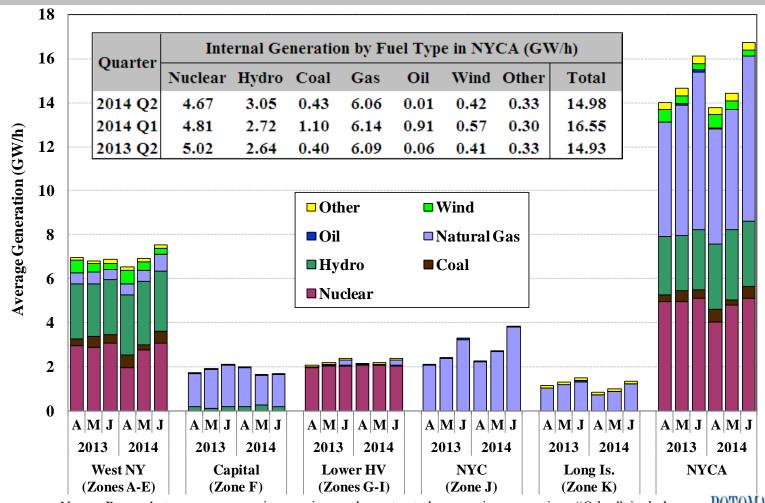


Note: Natural Gas Price is based on the following gas indices (plus a transportation charge of \$0.20/MMbtu): the Dominion North index for West NY, the average of Tennessee Zone 6 and Iroquois Zone 2 for the Capital Zone, the average of Texas Eastern M3 and Iroquois Zone 2 for Lower Hudson, the Transco Zone 6 (NY) index for New York City, and the Iroquois Zone 2 index for Long Island. _ 8 _





Real-Time Generation Output by Fuel Type



Notes: Pumped-storage resources in pumping mode are treated as negative generation. "Other" includes Methane, Refuse, Solar & Wood.

- 14 -

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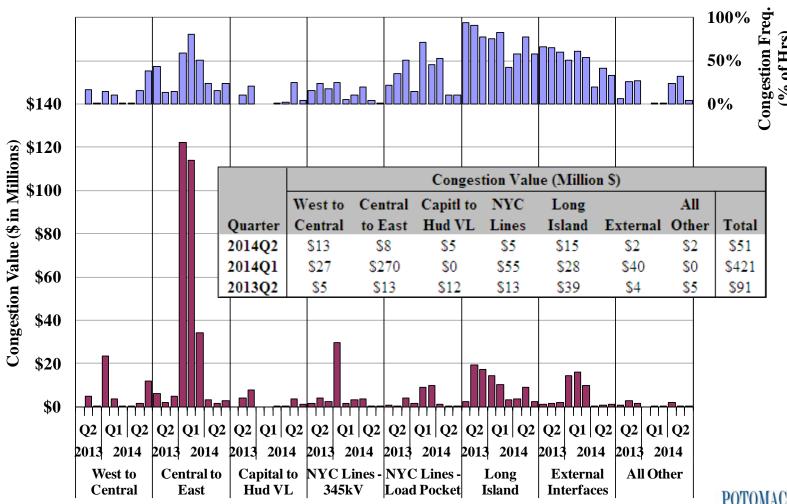
Highlights and Market Summary: Congestion Patterns

- Day-ahead congestion revenues totaled \$50 million, down 44 percent from the second quarter of 2013.
 - ✓ Congestion across the Central-East interface, the UPNY-SENY interface, and in New York City accounted for just \$18 million of day-ahead congestion revenue.
 - Low natural gas prices tends to reduce congestion in these areas because most of the redispatch to manage congestion involves gas-fired generation; and
 - The full return to operation of the Ramapo line reduced congestion into SENY.
 - Congestion into Long Island was reduced from the second quarter of 2013 when transmission outages significantly reduced flows across the Neptune Cable and the 345 kV connections from upstate New York.
 - ✓ However, transmission bottlenecks on west-to-east flows through the West Zone became more prevalent in the second quarter of 2014 because of:
 - Increased production from hydro resources that increase west-to-east flows;
 - Planned and forced outages of generation and transmission in late-May and June;
 - Increased exports to PJM in May and June because of low gas prices in NY; and
 - The retirement of one Dunkirk unit in June 2013.

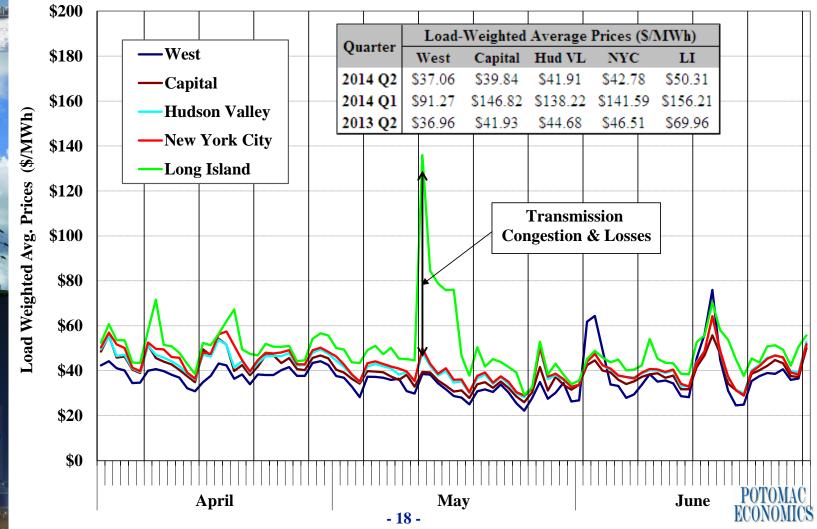




Day-Ahead Congestion Value and Frequency by Transmission Path

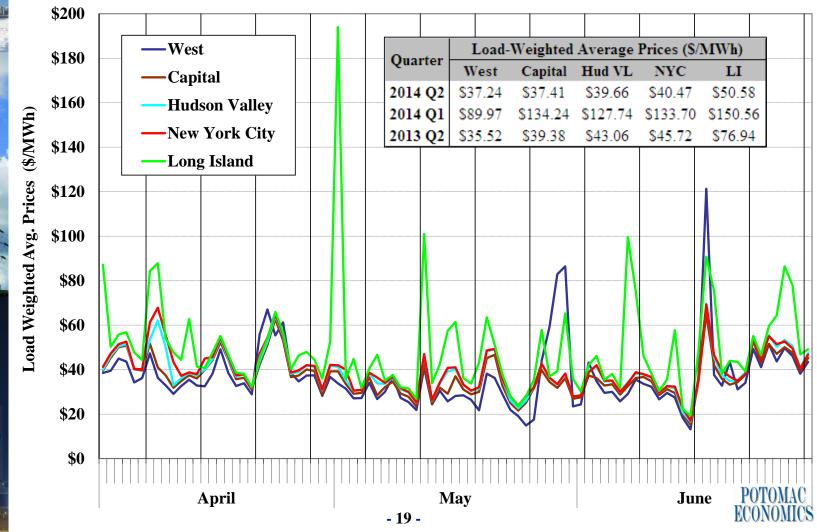


Day-Ahead Electricity Prices by Zone



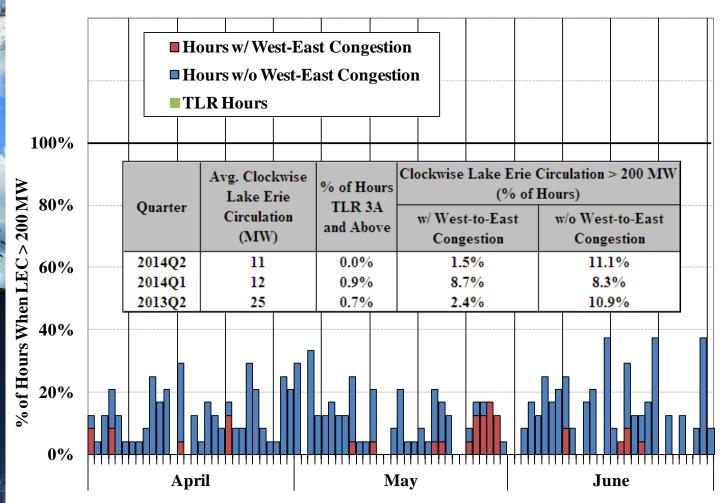


Real-Time Electricity Prices by Zone





Clockwise Lake Erie Circulation and TLR Calls



100%

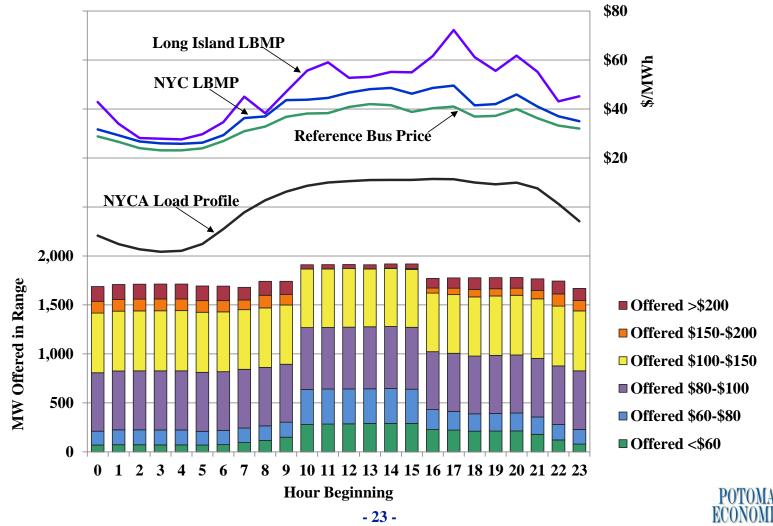
50%

0%

% Hours of TLR 3



Energy Offers from Gas Peaking Units by Time of Day New York City & Long Island





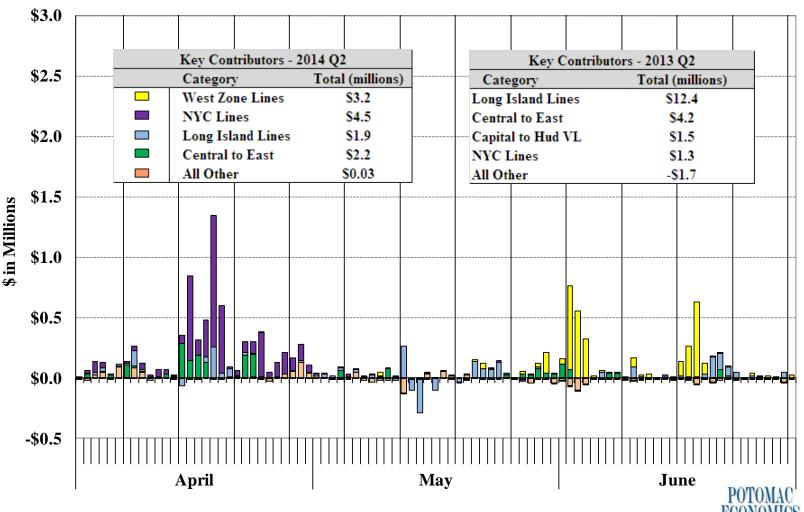
Highlights and Market Summary: Revenue Shortfalls

- Day-ahead congestion shortfalls were \$12 million, down 33 percent from last year.
 - Outages in Gowanus-Goethals area from early April to early May reduced transfer capability in the Freshkills load pocket, accounting for \$4 million of shortfalls.
 - Several facilities around the Niagara 115 kV bus were out of service in late-May, early-June, and mid-June, which led to transmission bottlenecks on 230kV lines, accounting for \$3 million of shortfalls.
 - Shortfalls on Long Island fell \$10 million from a year ago due to fewer transmission outages on 345 kV lines into Long Island.
- Balancing congestion shortfalls totaled \$6 million, down slightly from a year ago.
 - ✓ Long Island and West Zone congestion accounted for the majority of shortfalls.
 - ✓ TSAs usually account for most balancing congestion shortfalls in the summer, but TSA operation accounted for just \$0.2 million of shortfalls this quarter because:
 - TSAs occurred less frequently; and
 - There was less congestion into SENY in general.



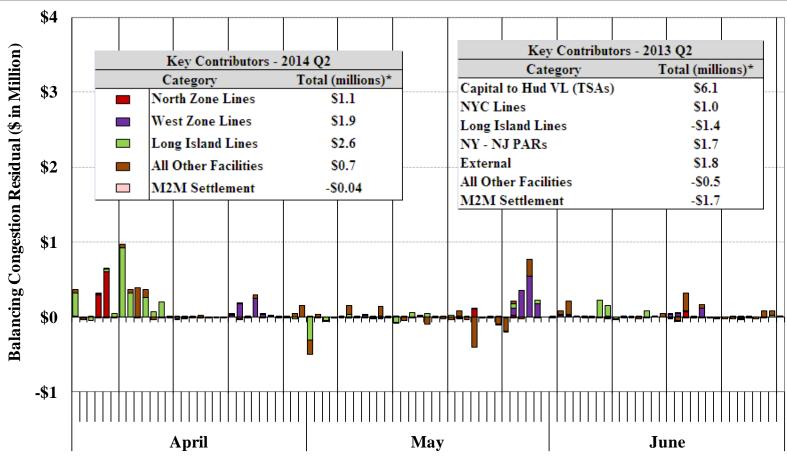


Day-Ahead Congestion Revenue Shortfalls by Transmission Facility





Balancing Congestion Shortfallsby Transmission Facility

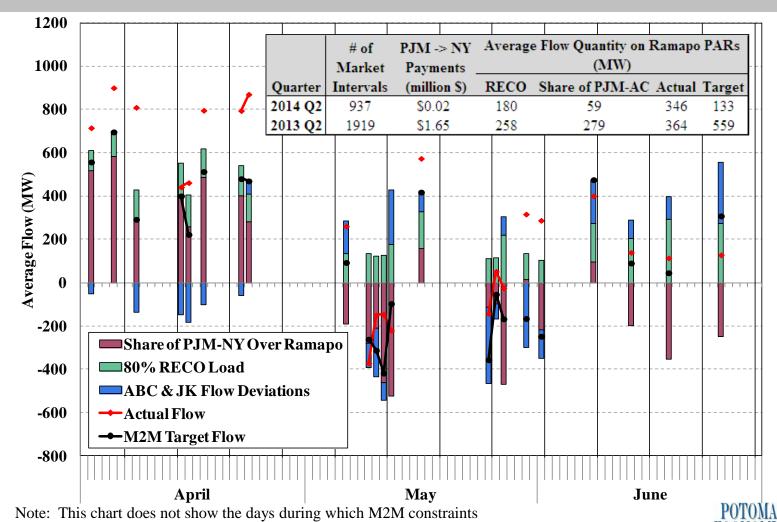


Notes: The BMCR estimated above may differ from actual BMCR because the figure: (a) is partly based on real-time schedules rather than metered values and (b) assumes the energy component of the LBMP is the same at all locations including proxy buses (while the actual LBMPs are not calculated this way under all circumstances).



were binding in less than 12 intervals.

Actual and Target Flows for the Ramapo Line During the Intervals with Binding M2M Constraints



- 54 -



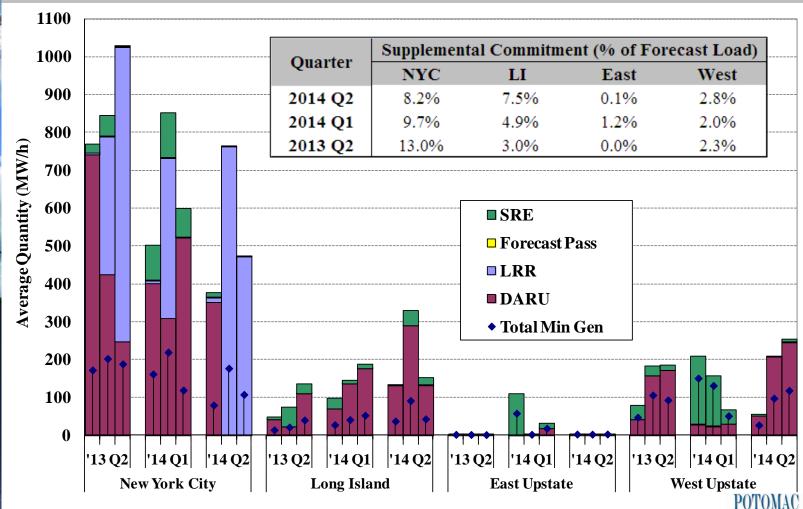
Highlights and Market Summary: Guarantee Payment Uplift

- Guarantee payments totaled \$18 million, down 53 percent from the previous year.
 - ✓ Supplemental commitments in NYC fell 39 percent from a year ago, reflecting:
 - Fewer transmission and generation outages in the Astoria West and Freshkills load pockets; and
 - Updates in the NOx bubble modeling in the LRR pass that have reduced the need to commit steam turbine capacity.
 - ✓ The need to commit and dispatch oil-fired units for Long Island reliability decreased dramatically from the previous year.
 - The installation of the West Bus DRSS and Wildwood DRSS have reduced the need to dispatch peaking generators to manage voltage constraints and the cost of satisfying the minimum oil burn rule for Long Island (IR-5).
 - ✓ In Western NY, OOM dispatch and supplemental commitment of coal-fired units rose from the previous year.
 - Supplemental commitment and OOM dispatch is used to manage congestion on the 115 kV system in Western NY.
 - The reduction in natural gas prices made coal-fired generation less economic than in the second quarter of 2013.



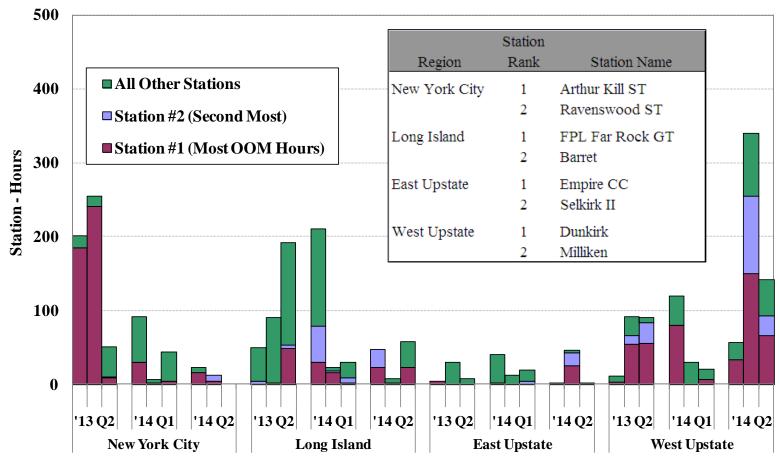


Supplemental Commitment for Reliabilityby Category and Region





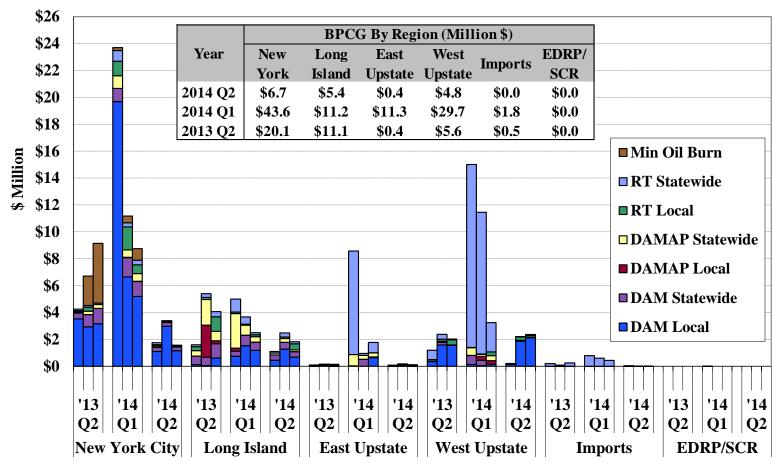
Frequency of Out-of-Merit Dispatch by Region by Month



Note: "Station #1" is the station with the highest number of out-of-merit ("OOM") hours in that region in the current quarter;



Uplift Costs from Guarantee Payments By Category and Region



Note: BPCG data are based on information available at the reporting time and do not include some manual adjustments to mitigation, so they can be different from final settlements.





Highlights and Market Summary: Capacity Market

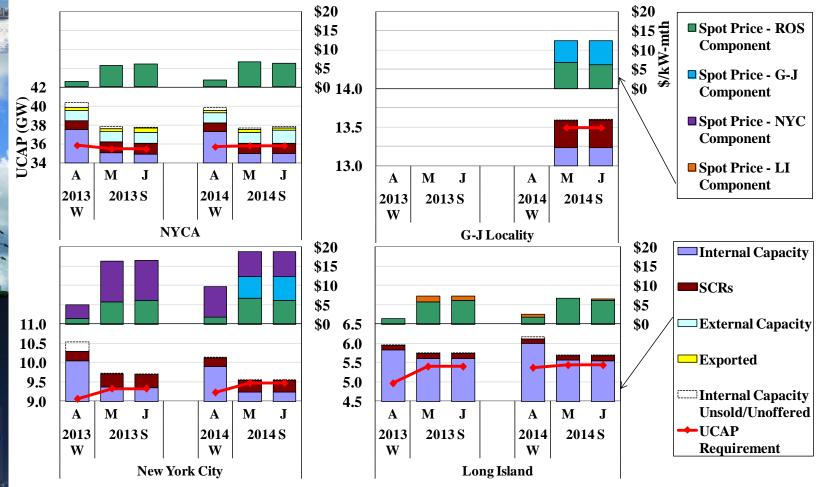
- UCAP spot prices rose in all areas but Long Island in the second quarter of 2014.
 - ✓ In New York City, UCAP spot prices averaged \$15.81/kW-month, up 26 percent from the second quarter of 2013.
 - In the G-J Locality, UCAP spot prices averaged \$12.37/kW-month for May and June 2014, significantly higher than the ROS spot prices.
 - ✓ On Long Island, UCAP spot prices averaged \$5.22/kW-month, down 1.5 percent from the second quarter of 2013.
 - ✓ In Rest of State, UCAP spot prices averaged \$4.88/kW-month, up 10 percent from the second quarter of 2013.
- Higher UCAP prices were primarily driven by increased ICAP requirements, which rose 453 MW in Rest of State and 138 MW in NYC because of increases in forecasted peak load from the 2013/14 Capability Year.
 - LI spot prices decreased because the UCAP demand curve fell by over 20 percent.
- The new capacity zone better reflects the reliability need to secure the UPNY-SENY interface and greatly enhances the efficiency of the market to provide investment signals in this area.
 - ✓ There was virtually no unsold capacity in the G-J Locality during the May and June UCAP auctions.

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Capacity Market Results The Second Quarter of 2013 and 2014



Note: Sales associated with Unforced Deliverability Rights ("UDRs") are included in "Internal Capacity," but unsold capacity from resources with UDRs is not shown.

