

NYISO Summer 2018

Hot Weather Operations

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VICE PRESIDENT OPERATIONS

Management Committee

September 26, 2018,
Albany, NY

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Agenda

- **Summer Ambient Temperatures Summer Loads**
- **Operating Conditions During Four Heat Waves**
 - June 30 – July 5
 - August 6
 - August 28-29
 - September 2-6
- **Fuel Prices & Marginal Energy Prices**

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Summer 2018 Summary

- Actual ambient temperatures were above the 20-year mean in May, July, and August; and near average in June
 - 19 days over 90F in Albany (<https://www.weather.gov/media/aly/Climate/90DegreeDays.pdf>)
- Total load (GWh) was above 50/50 projections
- Peak load was below the 50/50 projection for the 5th consecutive summer
 - Summer 2018 50/50 forecast was 32,904 MW
 - Summer 2018 actual peak load was 31,861 MW (August 29)
- Six days with peak loads over 31,000 MW
 - Summer 2017 actual peak load was 29,677 MW

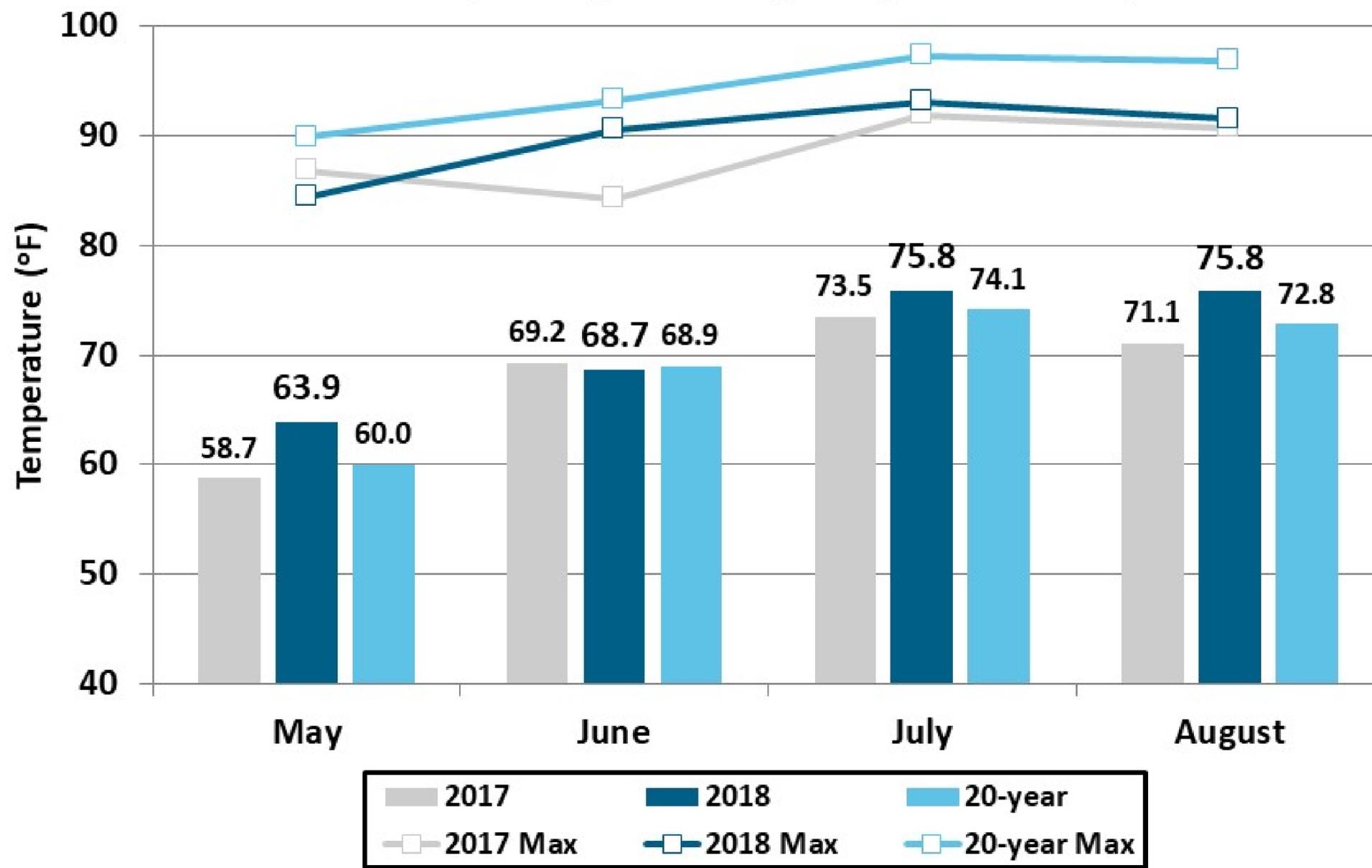
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Summer 2018 Summary

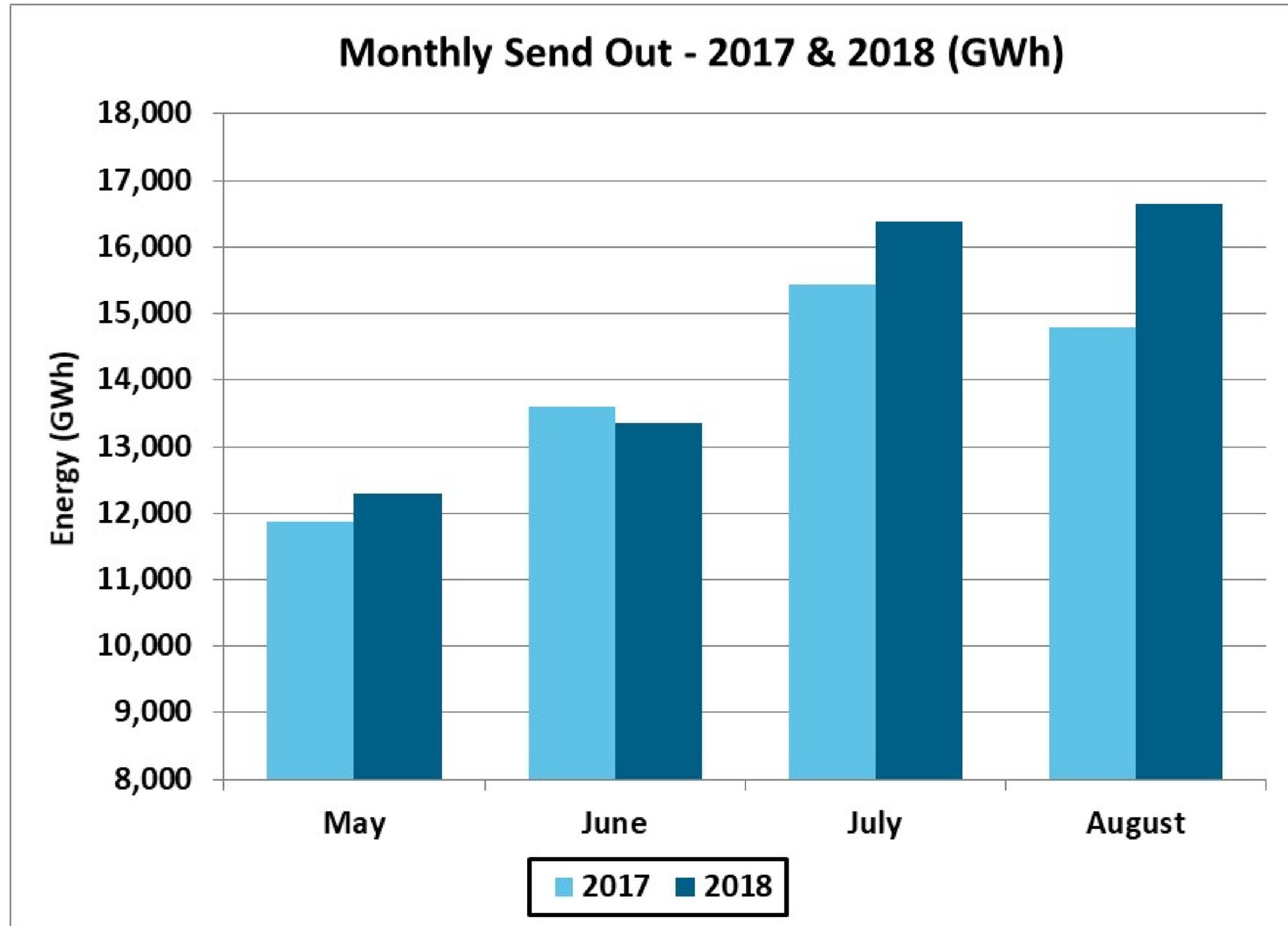
- **Summer transmission outages:**
 - 345 kV Hudson-Farragut B & C Lines
 - 230 kV St Lawrence – Moses L33P
 - 345 kV Dunwoodie-Mott Haven 71 (outage began July 1)
- **There are currently six times more behind-the-meter solar installations than Summer 2013**
- **Fuel supplies for electric generation work well the entire summer**

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Monthly Average and Max Temperatures 2017, 2018, and 20-year (1998 - 2017)

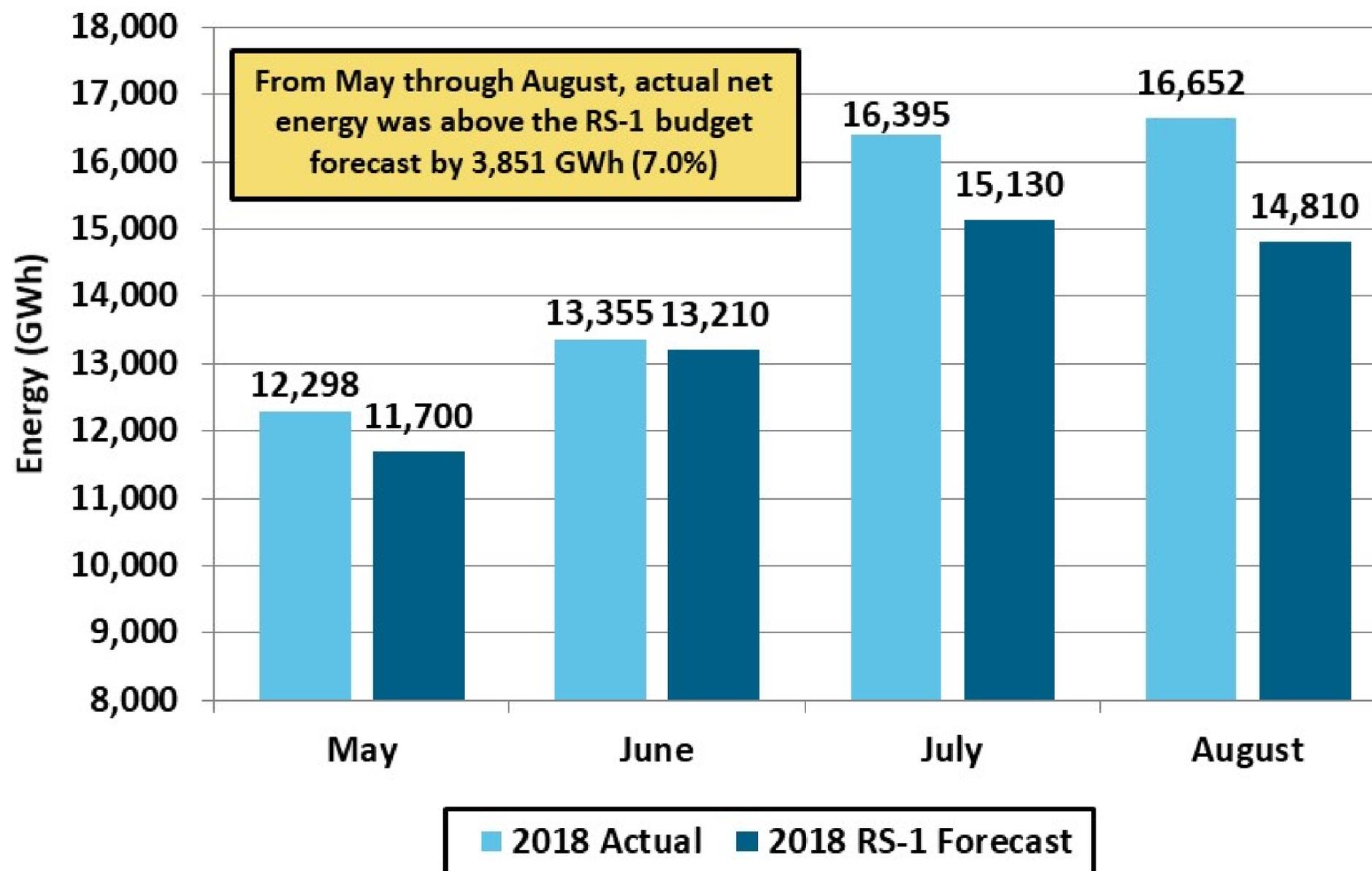


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2018 Monthly Net Energy - GWh Actual and RS-1 Budget Forecast



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June 30 – July 5, 2018

- 6-day heat wave crossed much of the Mid-Atlantic, New York, and Northeast from Saturday, June 30 through Thursday, July 5 with high temperatures exceeding 90F all six days and extremely high levels of humidity.
- Prior to June 30th, NYISO worked with the Transmission Owners to reschedule transmission maintenance work
- NYISO participated in conference calls with NPCC and Transmission Owners
- Transmission Owners activated local demand response programs during the heatwave
- Actual peaks during this time period were reduced by pop-up showers that were not in the forecast. The Wednesday, July 4 holiday may also have had an impact.

June 30 – July 5, 2018

■ Saturday, June 30

- Peak Load: 27,400 MW, Albany 95F, LaGuardia 93F

■ Sunday, July 1

- Peak Load: 29,601 MW, Albany 97F and LaGuardia 96F
- All-time Sunday peak
- 345 kV Dunwoodie-Mott Haven #71 line was forced out of service at 12:48
- NYISO put Demand Response Zone J on notice for Monday, July 2 in anticipation of securing New York City transmission.
- External capacity resources put on notice

June 30 – July 5, 2018

■ Monday, July 2

- Peak Load: 31,293 MW at HB15, pop-up showers occurred across upstate NY
- Activated Zone J Demand Response 13:00–18:00 for Zone J transmission security
 - Estimated activation 495 MW
 - Actual response will be determined by end of September
 - Scarcity Pricing outcomes will be presented at September MIWG
- Most utilities activated their utility demand response programs (650 MW)
- NYISO scheduled capacity commitments (SRE's) of Danskammer 4, Bowline 1 and Oswego 5 for Monday peak operations. On Sunday afternoon Operations was projecting capacity shortfalls for Monday due to updated, higher peak forecasts than presented to the day ahead market early Sunday morning and loss of some generation capacity
- External ICAP was called HB13-HB18

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June 30 – July 5, 2018

■ Tuesday, July 3

- Peak Load: 30,450 MW at HB 13
- Some utilities activated their utility demand response programs (330 MW)
- Thunder Storm Alert HB 20-23

■ Wednesday, July 4

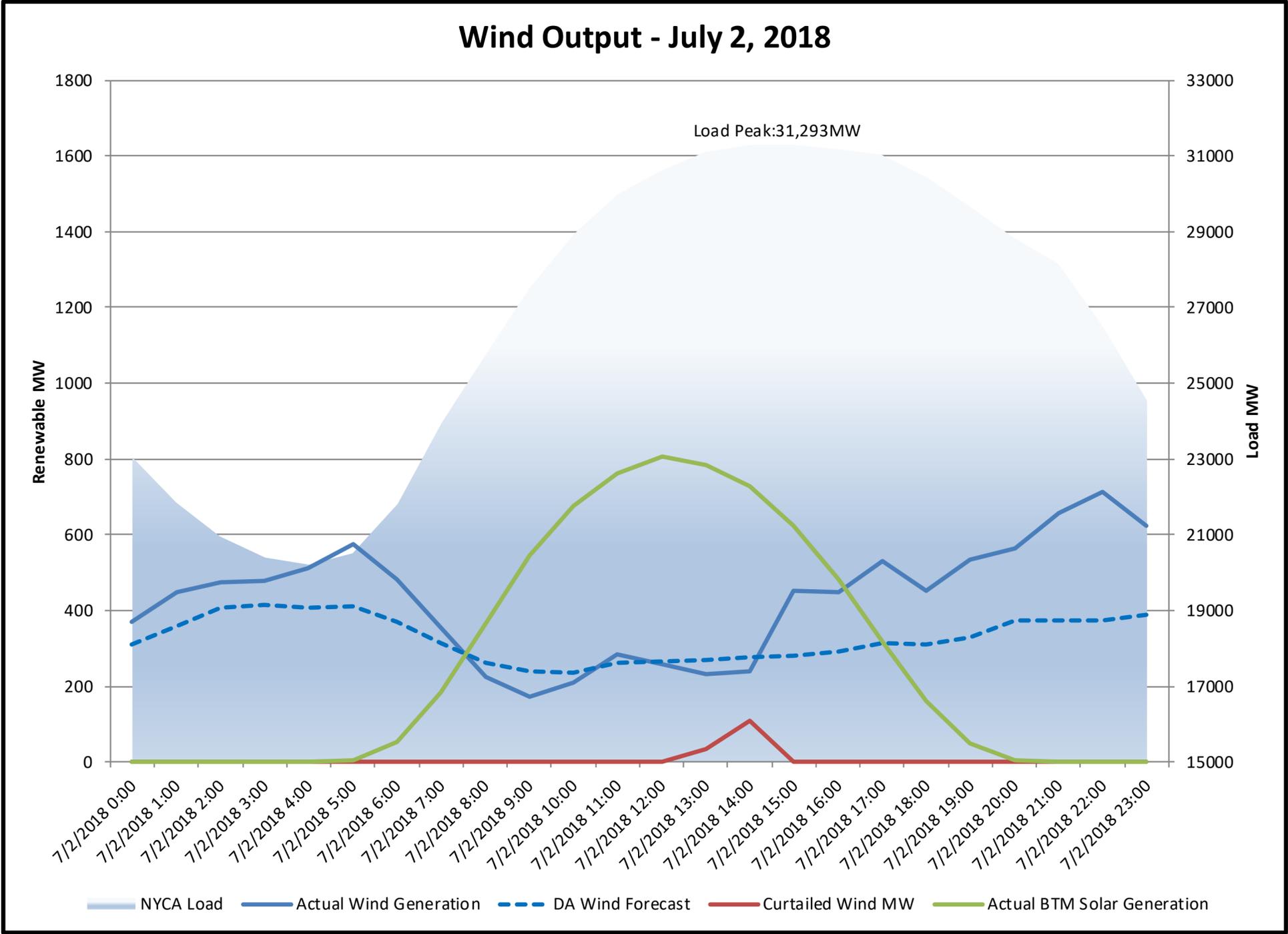
- Peak Load: 27,070 MW at HB 14

■ Thursday, July 5

- Peak Load: 30,501 MW at HB 17
- Marcy 765/345kV Transformer AT#2 forced out of service
- Some utilities activated their utility demand response programs (340 MW)

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Peak Day- Wind & Performance

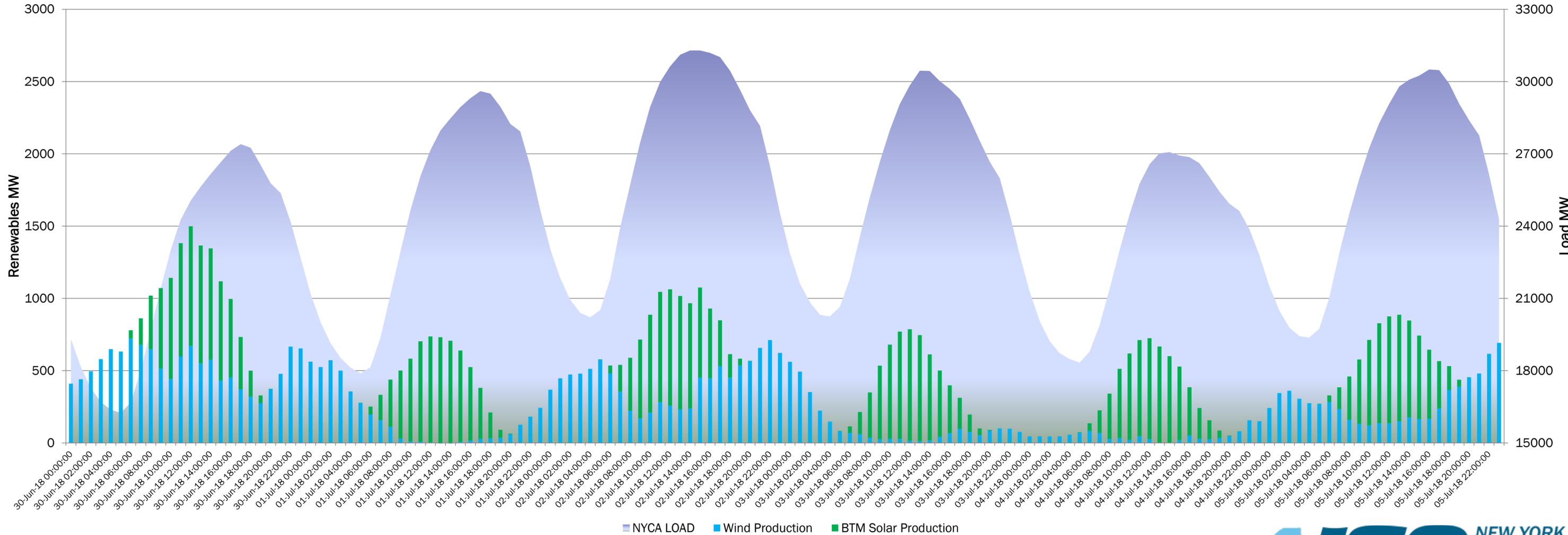


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Renewable Generator Performance

Hourly Wind & Solar Production during the July Heat Wave



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Monday, August 6

- Peak Load: 31,248 MW
- Some utilities activated their demand response programs (286 MW)
- No significant generator derates
- No transmission forced outages
- No NYISO state-wide capacity commitments
- No NYISO Demand Response activations

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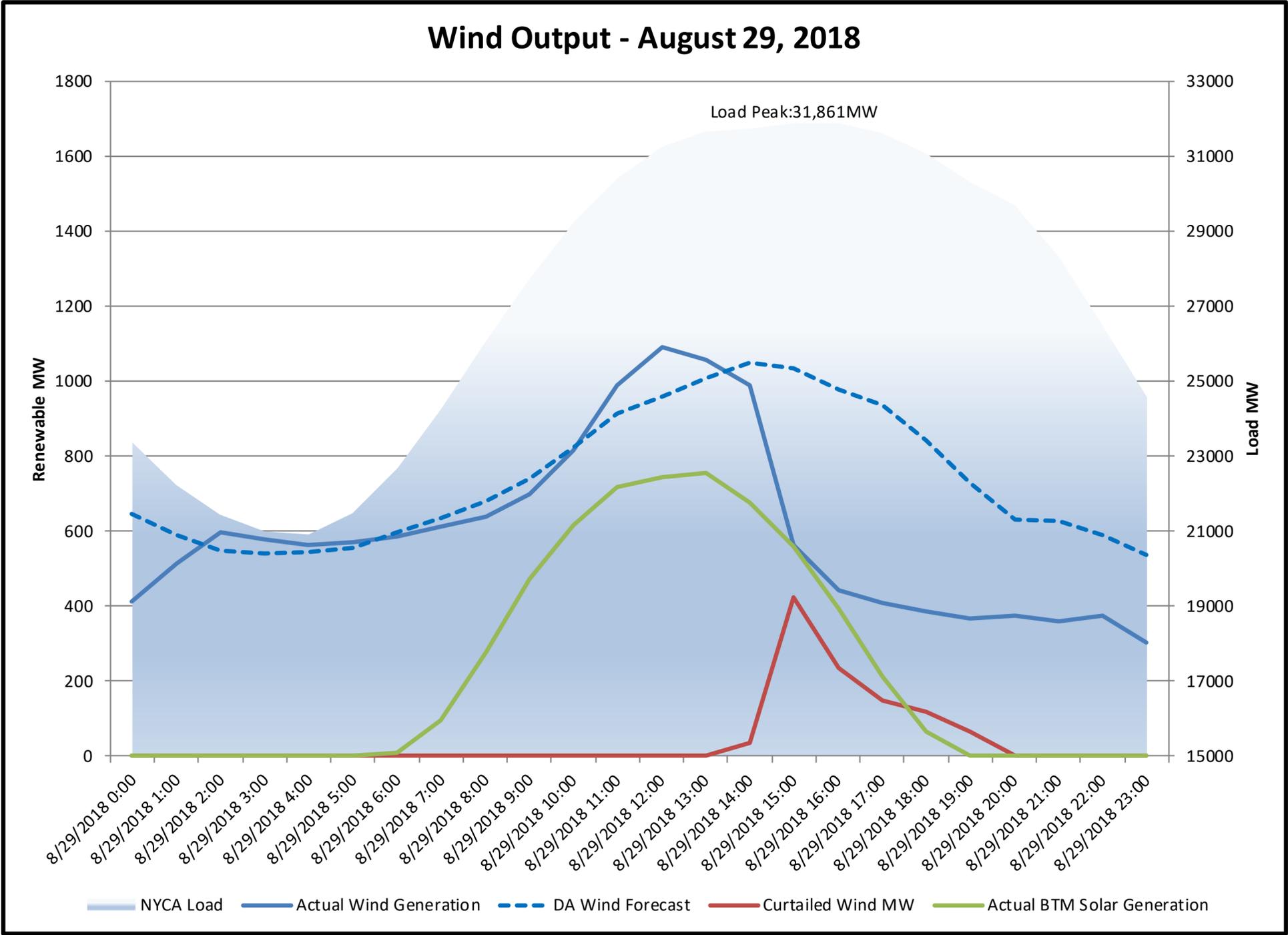
August 27 – 29

- **3-Day heat wave crossed New York**
- **Tuesday, August 28**
 - Peak Load: 31,825 MW
 - NYISO activated Zone J Demand Response (481 MW) for NYC transmission security 12:00 – 18:00.
 - Some utilities activated their utility demand response programs (648 MW)
 - Scarcity pricing outcomes will be presented at September MIWG
 - Called on external capacity
- **Wednesday, August 29**
 - Peak Load: **31,861 MW** (small pop-up showers in upstate beginning 3 PM)
 - **This is the Summer 2018 Peak Load**
 - NYISO activated Zone J Demand Response (481 MW) for NYC transmission security 12:00 – 18:00. Scarcity pricing outcomes will be presented at September MIWG
 - Some utilities activated their utility demand response programs (660 MW)
 - Scheduled capacity commitments (SRE's) of Oswego 6
 - Called on external capacity

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Peak Day- Wind Performance

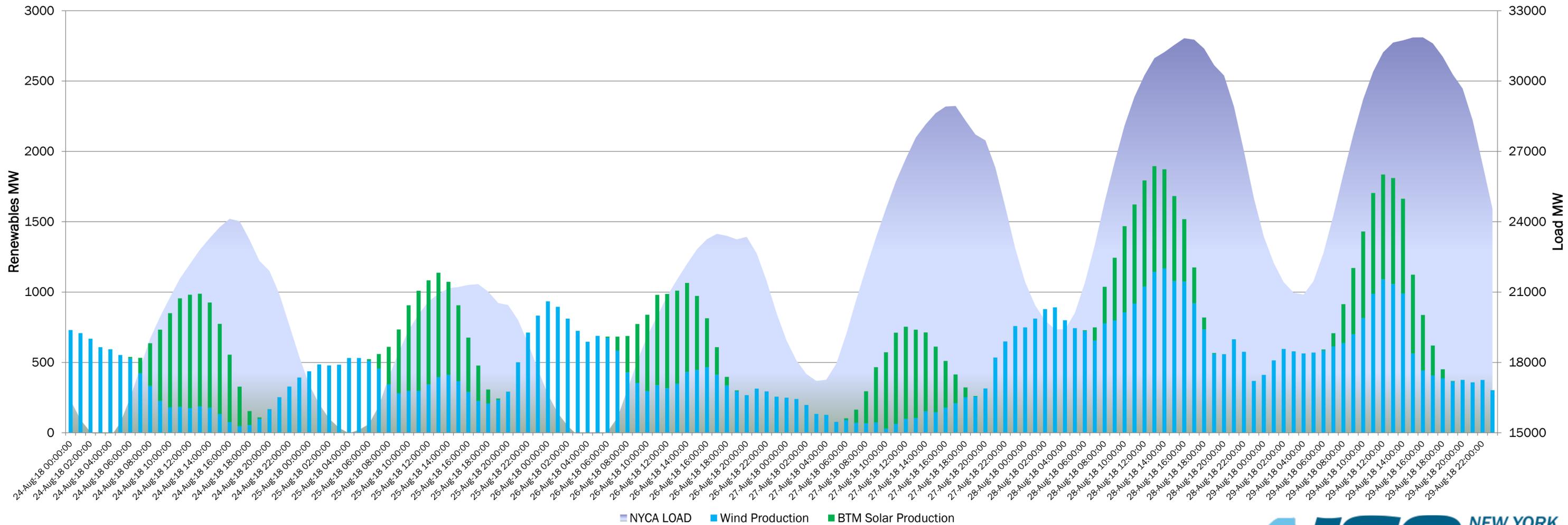


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Renewable Generator Performance

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Additional Transmission Owner Demand Response Program Activations

- **May 3, 2018 – Con Ed DLRP**
- **June 18, 2018 – Con Ed BQDM, DLRP, LIPA**
- **June 19, 2018 – LIPA**
- **July 16, 2018 – National Grid, NYSEG, RG&E**
- **August 7, 2018 – Con Ed BQDM, NYSEG**
- **August 8, 2018 – Con Ed BQDM**
- **August 9, 2018 – LIPA**
- **August 16, 2018 – LIPA**
- **August 30, 2018 – Con Ed DLRP, LIPA**

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September 3-6

- **Monday (Labor Day), September 3 Peak Load**
 - Peak Load: 28,125 MW
 - Purchased ~250 MW of emergency energy from IESO to facilitate sale of emergency energy to ISO-NE for HB 17
- **Tuesday, September 4**
 - Peak Load: 31,156 MW
 - Some utilities activated their utility demand response programs (28MW)
- **Wednesday, September 5**
 - Peak Load: 31,458 MW
 - Some utilities activated their utility demand response programs (262 MW)
- **Thursday, September 6**
 - Peak Load: 30,609 MW
 - Some utilities activated their utility demand response programs (305MW)
- **No NYISO DR nor state-wide capacity commitments**

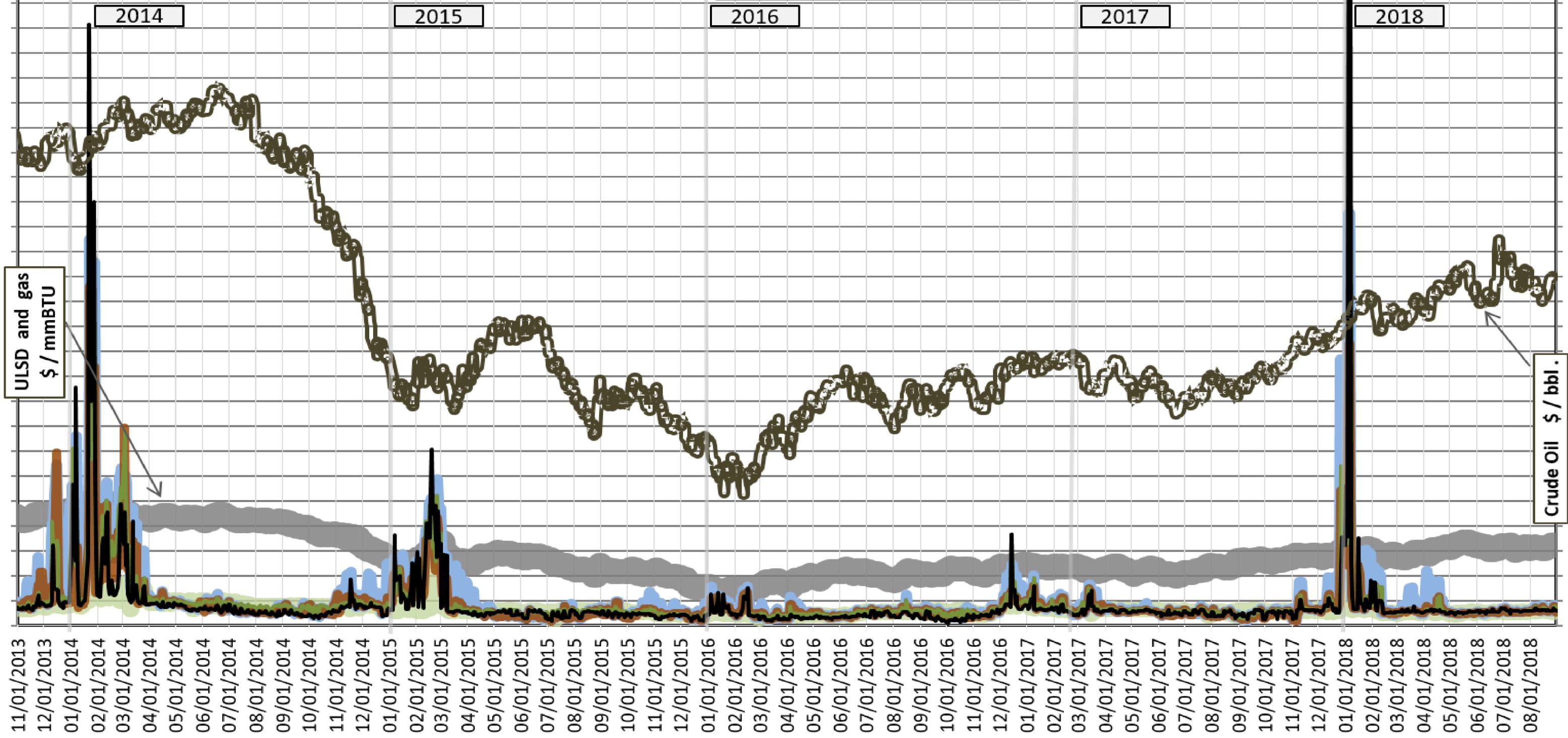
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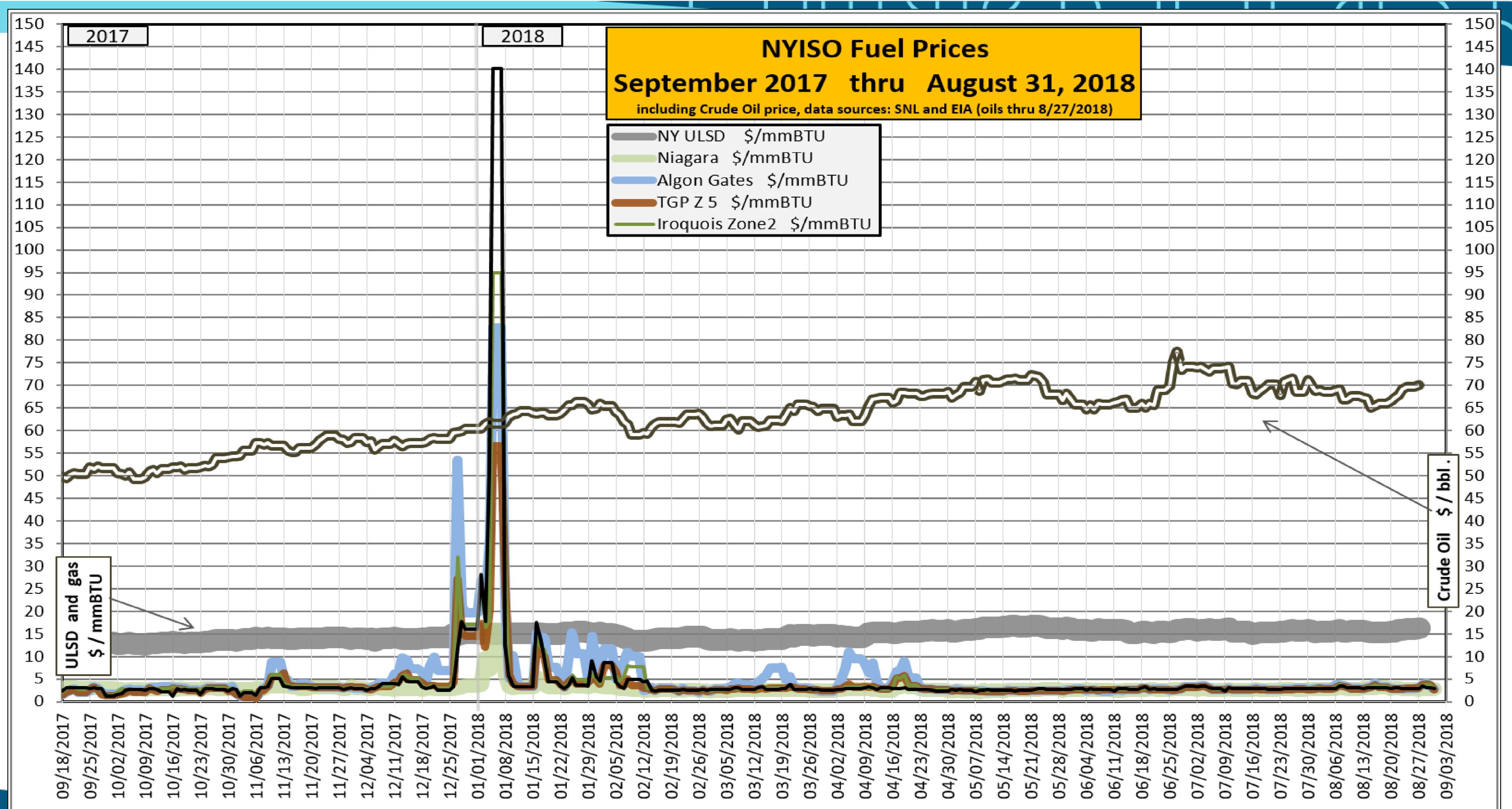
NYISO Fuel Prices

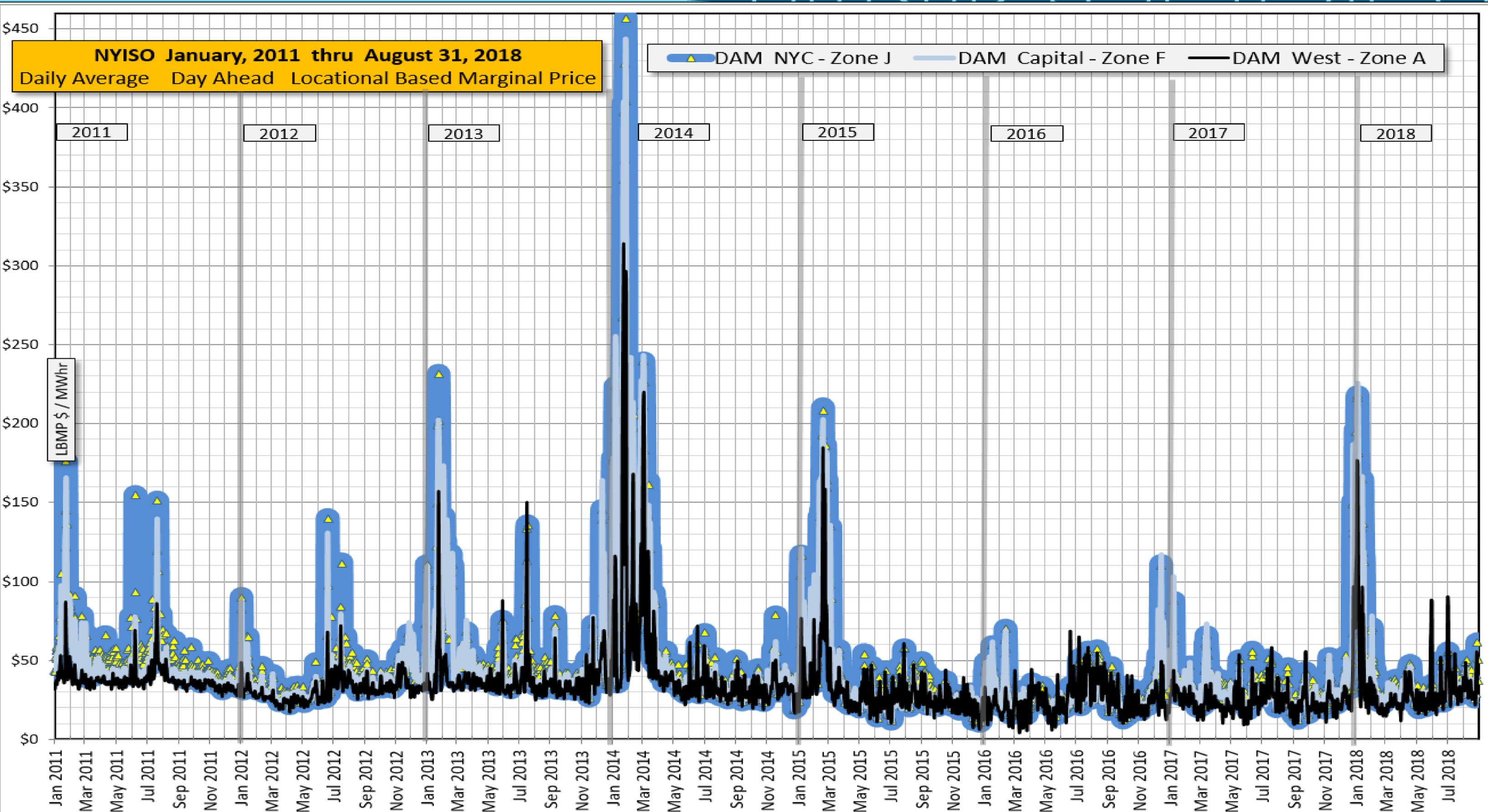
November 2013 thru August 31, 2018

including Crude Oil price, data sources: SNL and EIA (oils thru 8/27/2018)

- NY ULSD \$/mmBTU
- Niagara \$/mmBTU
- Algon Gates \$/mmBTU
- TGP Z 5 \$/mmBTU
- Iroquois Zone2 \$/mmBTU





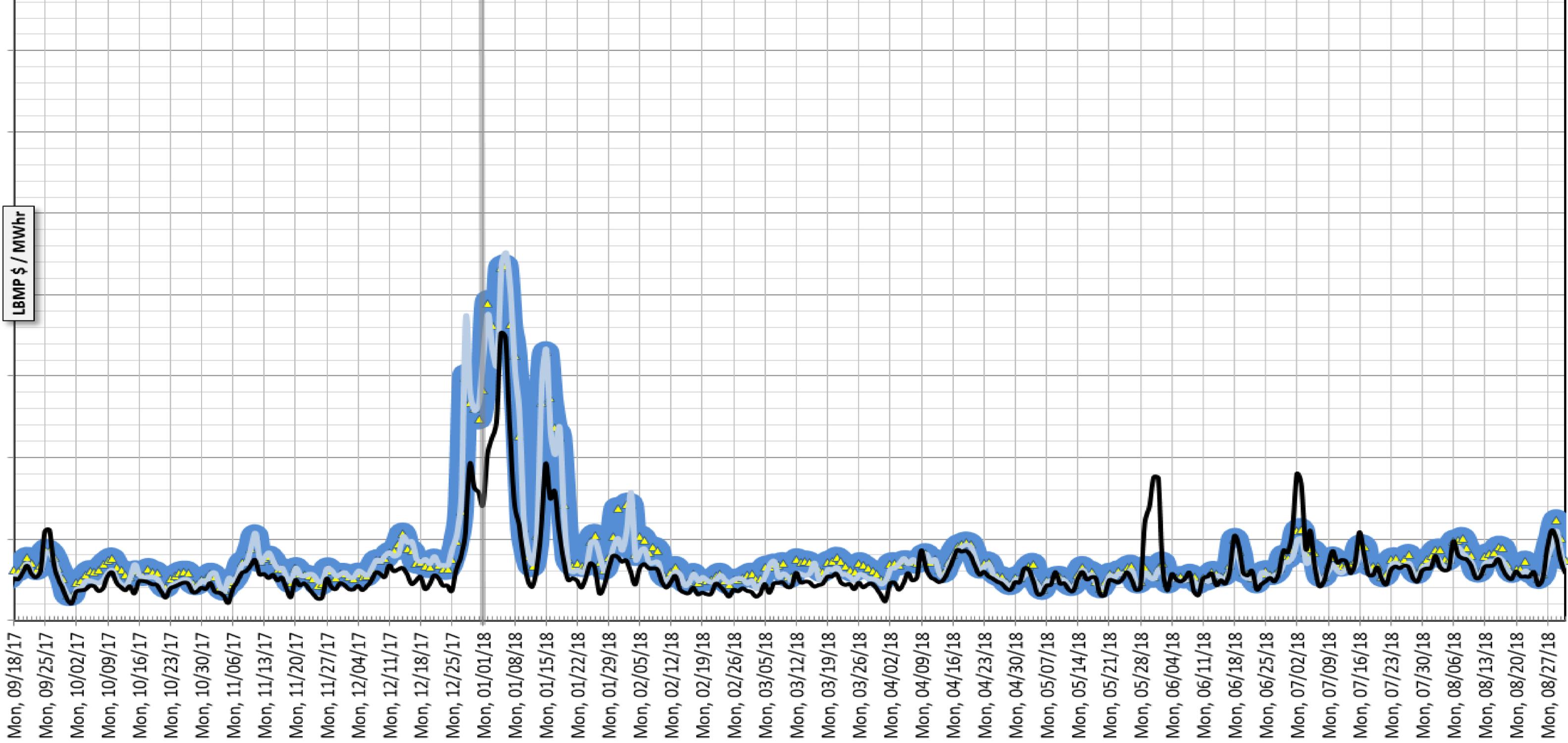


NYISO September 18, 2017 thru August 31, 2018
Daily Average Day Ahead Locational Based Marginal Price

DAM NYC - Zone J DAM Capital - Zone F DAM West - Zone A

2017

2018



The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system

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