New York ISO
Independent System Operator

NYISO Summer 2025 Hot Weather Operations

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VICE PRESIDENT, OPERATIONS

NYSRC Executive Committee

November 14, 2025

Agenda

- Summer 2025 Hot Weather Preparation & Key Observations
- Summer 2025 Weather & Loads
- June 2025 Heatwave
- July 2025 Hot Weather Periods
- Appendix

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Summer 2025 Hot Weather Preparation & Key Observations

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Summer 2025 Preparation

- Proactive Fuel Monitoring: Track regional oil and gas supplies.
- Conduct surveys and discussions on past performance, summer preparation, fuel procurement, and switching capabilities.
- Annual Capability Survey: Assess oil and dual-fuel readiness and replenishment plans.
- Site Visits: Rotate annual generator site inspections to evaluate operational readiness.
- Outage Coordination: Seek to align transmission and generation planned maintenance to minimize reliability risks during peak heat.
  - Over 150 individual outage requests were rescheduled throughout the summer
- Interagency Collaboration: Coordinate with NERC, NY agencies (NYDPS, NYSERDA), ISOs/RTOs, and gas industry stakeholders
- Operator Training: Run simulation sessions on emergency procedures, restoration, and load shedding.

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Summer 2025 Key Observations

- June and July were marked by multiple region-wide heatwaves, with two particularly intense events between June 23–25 and another between July 28–30
  - The June event pushed real-time loads close to the 90/10 forecast levels
- June 24 had the hottest day by Cumulative Temperature and Humidity Index (CTHI) since the all-time peak day on July 19, 2013
  - Both dates had a CTHI of 86.8° F
- The NYISO declared Emergency Energy Alert Level 1 (EEA1) on 6/24, 6/25 and 7/29 due to tight capacity availability conditions, with the NYISO calling on External ICAP suppliers and activating Emergency Demand Response Program (EDRP) resources/Special Case Resources (SCRs) multiple times in June and July. The NYISO issued an Energy Warning on June 24 and Energy Watch on June 25 and July 29 due to declines in Operating Reserves.
  - EDRP/SCR activations also occurred on July 16, 17, and 25
- Behind-the-meter (BTM) solar continued to shift net load peaks later in the afternoon
- Natural Gas Pipeline and Local Gas Distribution Company (LDC) Operational Flow Orders (OFOs) were observed during high load periods

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Summer 2025 Weather & Loads

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Summer 2025 Weather & Loads

- **Daily mean temperatures were above the 20-year average in June and July, and below in May and August**
  - Highest Temperatures: 99°F at NYC - Central Park and 96°F at Albany
  - 14 days with highs at or above 90°F at NYC - Central Park (average is 15 days/year from 1991 – 2020)
    (Source: National Weather Service – www.weather.gov/okx)
  - 18 days with highs at or above 90°F at Albany (average is 9 days/year from 1991 – 2020)
    (Source: National Weather Service – www.weather.gov/aly)
- **Seasonal rainfall was near normal over the period from May through August, but variable by month**
  - May (7.43 in) was well above normal (3.41 in)
  - June (4.58 in) was near normal (4.05 in)
  - July (3.24 in) was below normal (4.55 in)
  - August (0.88 in) was well below normal (3.76 in)
    (Source: National Weather Service – www.weather.gov/aly)
- **Total net energy (GWh) was below 50/50 projections over the period from May through August, but variable by month**
  - May was below expected load levels (-1.5%)
  - June and July were above expected load levels (+3.6%, +5.4%, respectively)
  - August was well below expected load levels (-8.0%)
- **Peak net load was above the 2025 Load & Capacity Data report (Gold Book) baseline projection**
  - Summer 2025 Gold Book baseline forecast was 31,471 MW
  - Summer 2025 actual peak load was 31,857 MW (June 24th)
  - Summer 2024 actual peak load was 28,990 MW (July 8th)
- **Four days with measured peak loads over 30,000 MW (June 23, 24 and 25, and July 29)**
  - Loads net of BTM solar and NYISO/Retail (Utility) demand response
  - 10 days with NYCA peak demands above 28,000 MW (all in June and July)

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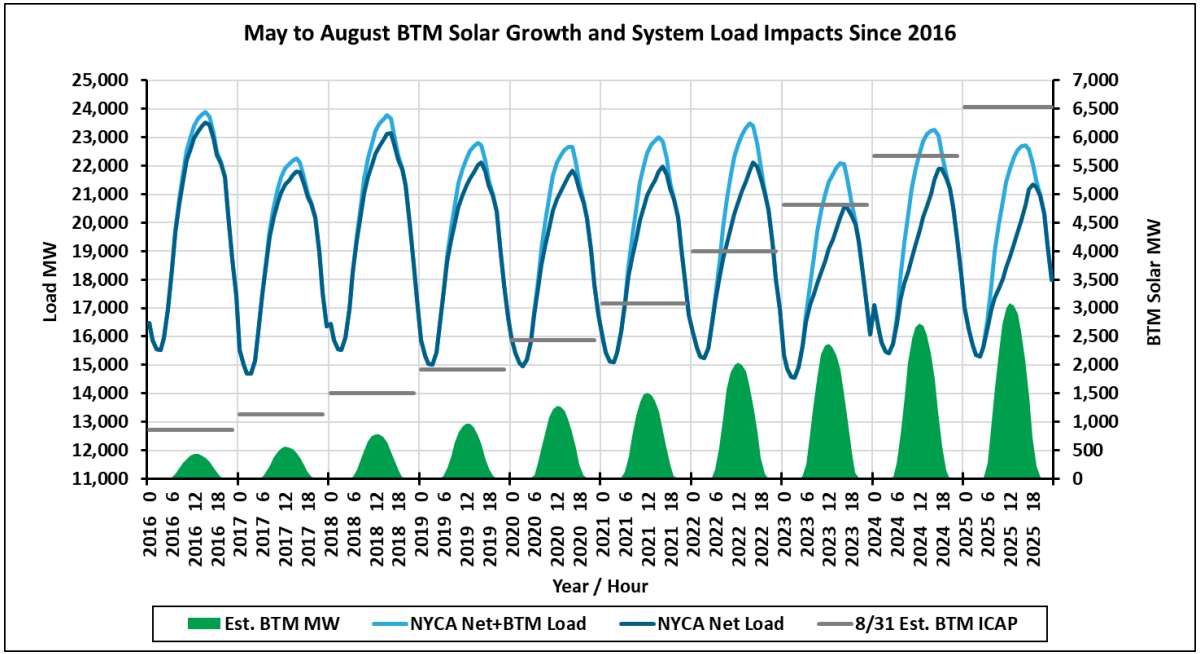
BTM Solar Growth Impacting May to August Load



- **The plot above represents the average daily load from May through August (2016-2025) with the associated BTM solar generation profiles**
  - Average daily peak BTM solar generation has grown from about 450 MW to nearly 3,100 MW
  - BTM solar generation growth has shifted the measured net peak load hour two hours later (from HB16 to HB18)
  - Nameplate BTM solar now exceeds 6,500 MW as of 8/31/2025

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June 2025 Heatwave

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June 23-25 Operations Highlights

- The Governor's Office issued an extreme heat advisory on Friday, June 20 due to high heat and humidity expected to impact most of the state in the early part of the following week
- Peak load for the period and summer of 31,857 MW occurred on Tuesday, June 24, HB18 (101.2% of the baseline forecast of 31,471 MW)
  - Peak load was reduced due to activation of NYISO and utility activations of retail demand response programs
- The NYISO issued a supplemental resource evaluation (SRE) call for Danskammer 4 and Oswego 5 on June 23 for statewide capacity due to an increase in load forecasts after the Day-Ahead Market (DAM) run and DAM interchange schedule uncertainty
- A Major Emergency was declared on 6/24 from 18:13-19:58 for operating reserve shortages.
  - Additional details on the Major Emergency here: https://www.nyiso.com/documents/20142/52506209/SOAS%20presentation%20ME%2006.24.2025.pdf/313b8042-f676-6644-7c03-85b6ae74a24a
- The NYISO activated EDRP resources and SCRs across all zones and called external capacity resources (6/23 HB14-21, 6/24 HB14-21 and 6/25 HB14-21) due to capacity concerns as a result of interchange uncertainty and generator performance

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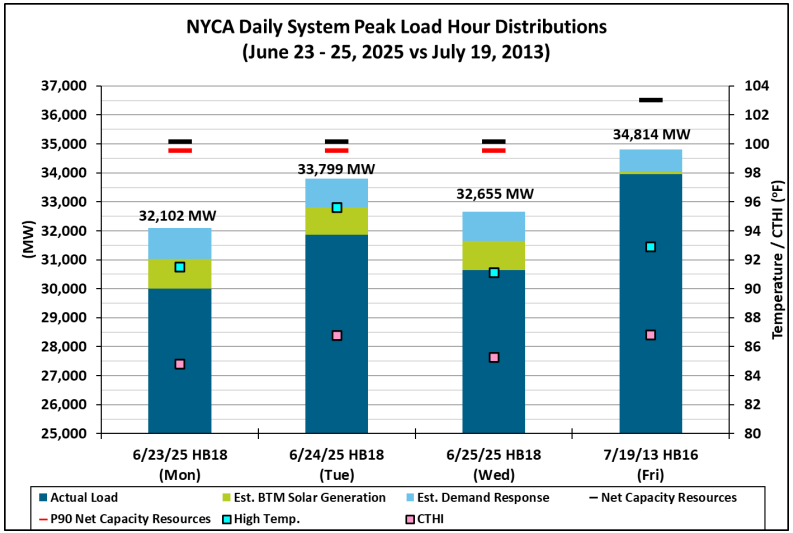
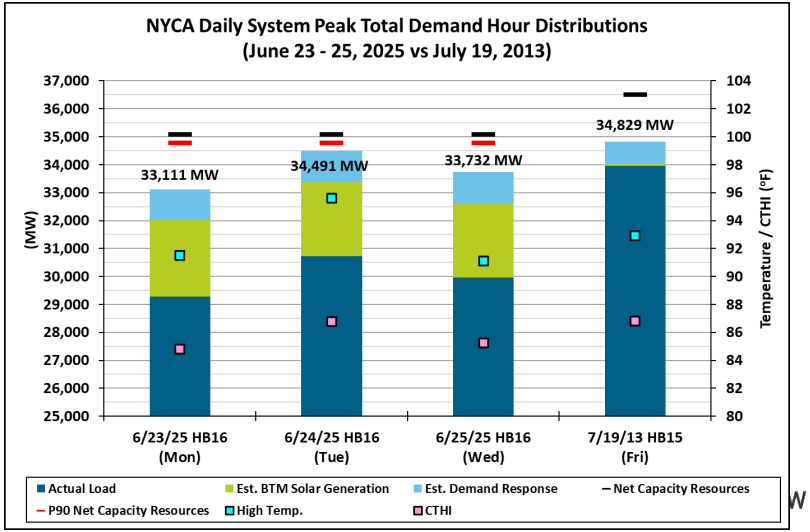
June 23–25 Heat Wave Load (Updated)

- Summer 2025 Gold Book baseline peak load forecast: 31,471 MW
- CTHI is a temperature/humidity index that correlates more strongly with peak load patterns than temperature.
- The 2025 Gold Book peak load is calculated at the following baselines:
  - Temperature: 92ºF
  - CTHI: 84.1ºF
- The plots below represent the load disaggregation during the following respective peak hours each day:
  - System Peak (left): The maximum Observed Load by Operations in real time
  - System Total Demand (right): The maximum Observed Load + Estimated BTM Solar Generation + Estimated Demand Response
- A comparison with the NYISO all-time peak day (July 19, 2013) is included to illustrate both the respective load and temperature levels, and how BTM solar generation growth has reduced the system peak load and shifted it later in the day





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June 23–25 Load and Demand Data

System Peak Load Hour

Date	6/23/2025	6/24/2025	6/25/2025	7/19/2013
Hour Beginning	18	18	18	16
System Load (MW)	30,007	31,857	30,646	33,956
Est. BTM Solar Generation (MW)	1,025	947	1,009	85
Est. Demand Response (MW)	1,070	995	1,000	773
Total Demand (MW)	32,102	33,799	32,655	34,814
High Temperature (°F)	91.5	95.6	91.1	92.9
CTHI (°F)	84.8	86.8	85.3	86.8

System Peak Total Demand Hour

Date	6/23/2025	6/24/2025	6/25/2025	7/19/2013
Hour Beginning	16	16	16	15
System Load (MW)	29,282	30,720	29,965	33,955
Est. BTM Solar Generation (MW)	2,759	2,675	2,674	101
Est. Demand Response (MW)	1,070	1,096	1,093	773
Total Demand (MW)	33,111	34,491	33,732	34,829
High Temperature (°F)	91.5	95.6	91.1	92.9
CTHI (°F)	84.8	86.8	85.3	86.8

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June 23-25 Key Observations

- **The June 23–25 heat wave was the peak of a steady warming trend**
  - June 23rd was the first day with a NYCA Composite high temperature above 90ºF
  - June 24th was the hottest day by CTHI since the all-time peak day on July 19, 2013
  - June 25th was the third consecutive (and last) day with a NYCA Composite high temperature above 90ºF
- **BTM solar generation and demand response shifted the system peak load hour 2 hours later relative to the highest total demand hour**
  - Assumed BTM solar generation in 2025 Gold Book baseline peak load hour: 1,581 MW
  - System peak load hour estimated BTM solar generation: 947 MW to 1,025 MW
  - System peak total demand hour estimated BTM Solar generation: 2,674 MW to 2,759 MW
- **Estimated demand response (both NYISO-initiated and utility-initiated) was about 1,100 MW, and similar to 2024 summer peak load days**
  - Final demand response MW impacts will not be available until the end of the season
  - Demand response estimates are derived from NYISO and utility enrollment and NYISO forecast calculations based on load forecast validation patterns
- **By comparison, the NYISO all-time peak load (July 19, 2013) occurred on the fifth consecutive 90+ ºF day**
  - BTM solar generation was around 100 MW systemwide during the peak load hours
  - Estimated Demand Response was about 773 MW

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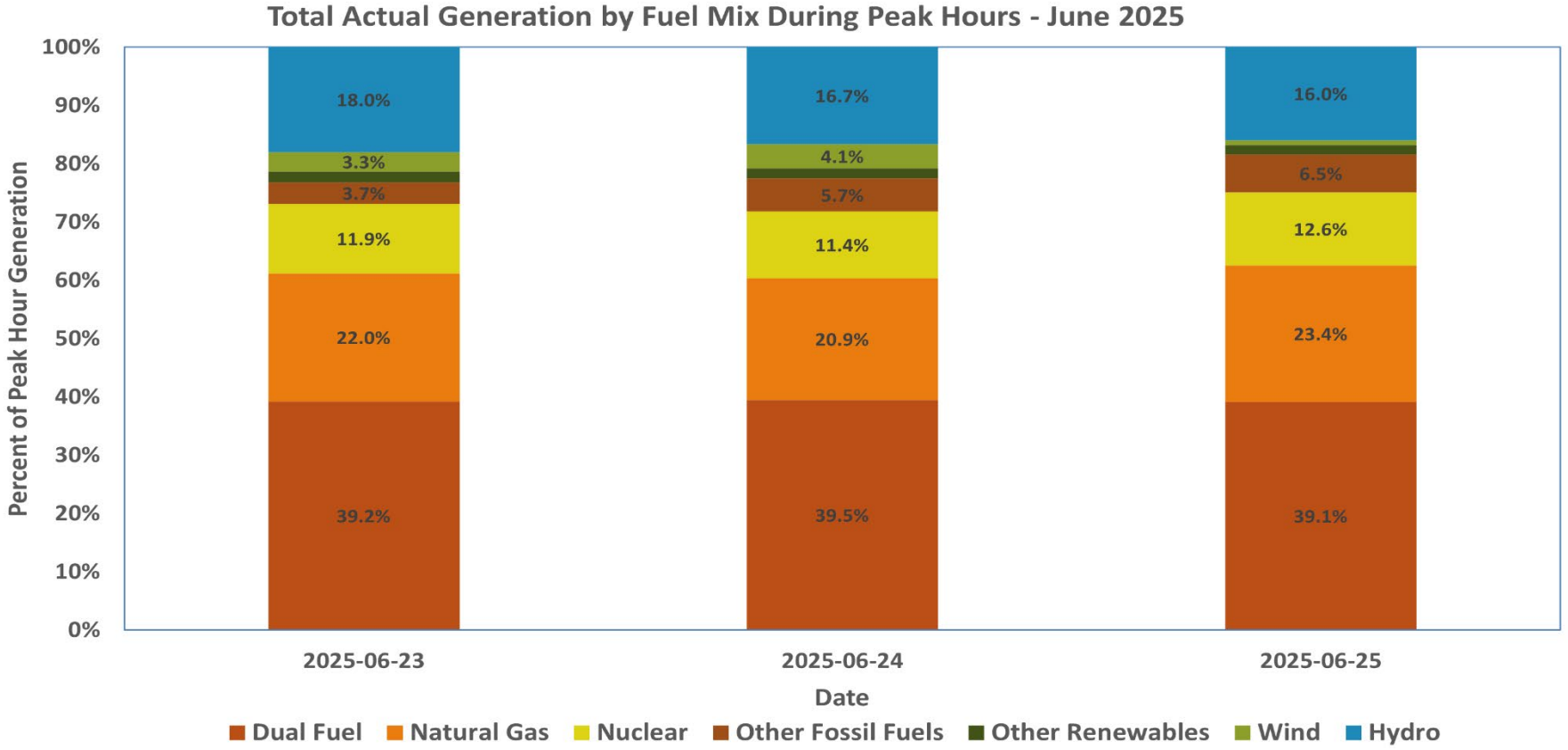

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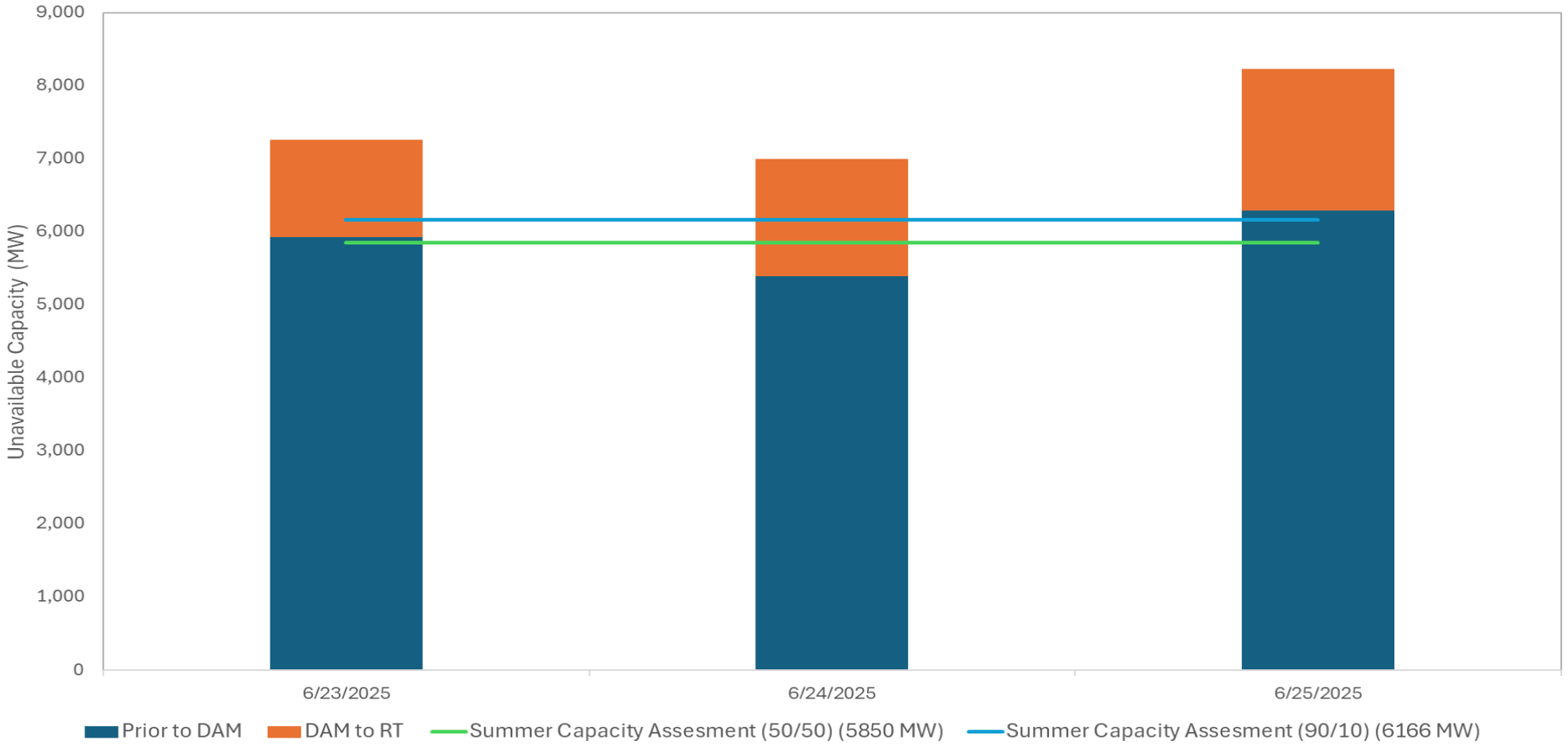
Unavailable Capacity for Peak Load Hour



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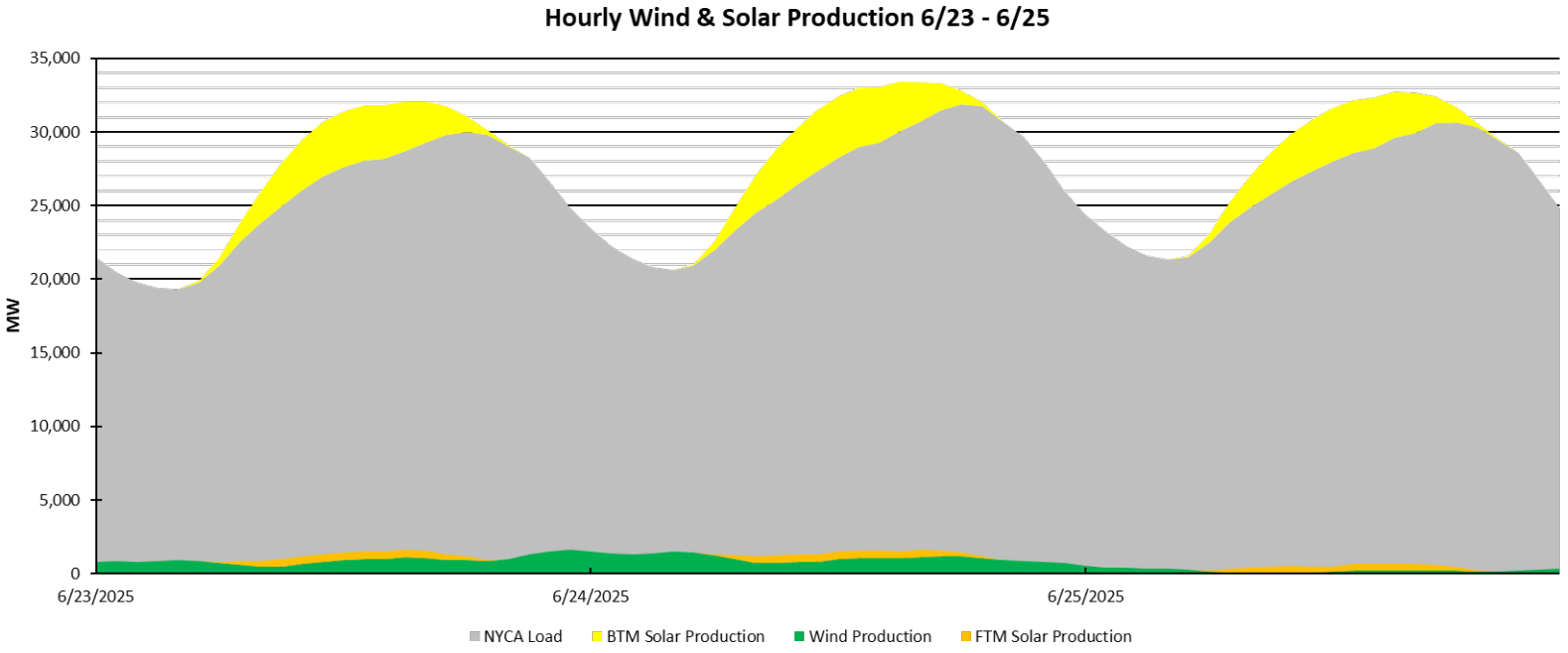
6/23–6/25 System Load vs. Renewables



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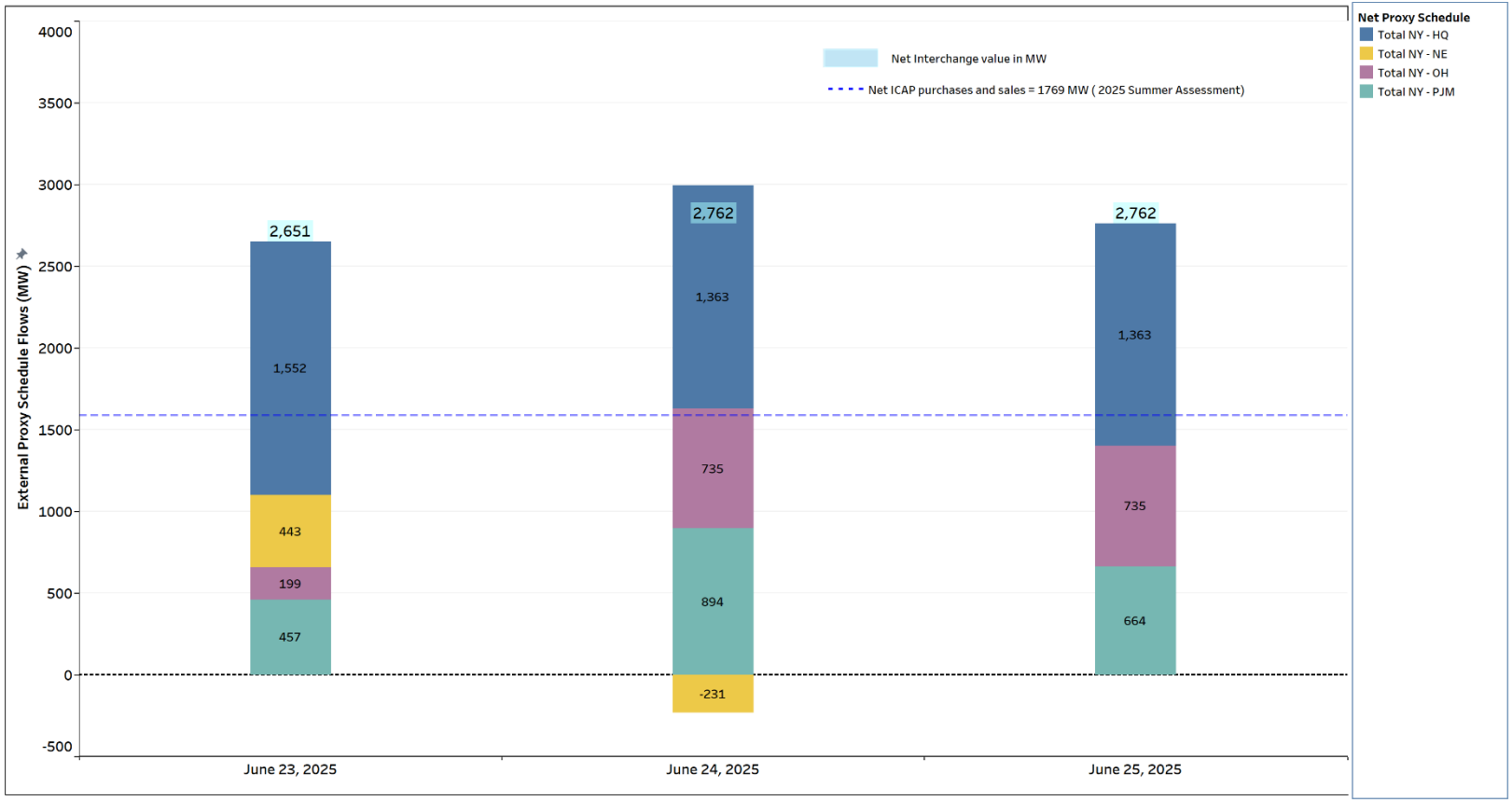
External Proxy Schedules During Peak Load Hour



*June 24 Includes purchases of 1,960 MW of emergency energy, including 660 MW via the Neptune Cable from PJM and additional imports from Ontario, Hydro-Québec and PJM

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June 2025 Utility Retail Demand Response Program Activations Snapshot

Date	Transmission Owner
06/19/2025	Con Edison
06/20/2025	Con Edison
06/23/2025	Central Hudson, Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG, O&R, RG&E
06/24/2025	Central Hudson, Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG, O&R, RG&E
06/25/2025	Central Hudson, Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG, O&R
06/26/2025	Con Edison
06/27/2025	Con Edison
06/29/2025	Con Edison
06/30/2025	Con Edison, NYSEG, RG&E

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July 2025 Hot Weather Periods

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July 16–17 Operations

- Peak load for the period of 28,930 MW occurred on Monday, July 16 HB17 (91.9% of the baseline forecast of 31,471 MW)
  - Peak load was reduced due to activation of NYISO EDRP/SCR in addition to utility activations of retail demand response programs
- The NYISO activated EDRP resources/SCRs for all zones on July 16 from HB15-22, as well as in Load Zones G-K on July 17 from HB15-22
- The NYISO issued a SRE for Danskammer 4 for statewide capacity on July 16 and 17 due to generator derates and an increase in load forecasts after the DAM run
- The NYISO called upon External ICAP suppliers on July 16 and July 17 from HB15-22

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July 25 Operations

- Peak load for the day of 28,300 MW occurred during HB15 (89.9% of the baseline forecast of 31,471 MW)
  - Peak load was reduced due to activation of NYISO EDRP/SCR programs as well as utility activations of retail demand response programs
- The NYISO activated EDRP resources/SCRs in Load Zones J and K (NYC and LI) from HB16-22
- The NYISO issued a SRE for Astoria 3 for statewide capacity due to generator derates and an increase in load forecasts after the DAM run

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July 28–30 Operations

- Peak load for the period of 30,645 MW occurred on Tuesday, July 29 HB18 (97.3% of the baseline forecast of 31, 471 MW)
  - Peak load was reduced due to activation of NYISO EDRP/SCR programs as well as utility activations of retail demand response programs
- The NYISO activated EDRP resources/SCRs in all zones from HB15-22 on all three days
- The NYISO issued a SRE for Danskammer 3 & 4 for statewide capacity due to generator derates and an increase in load forecasts after the DAM run
- The NYISO called upon External ICAP suppliers from HB15-22 on all three days

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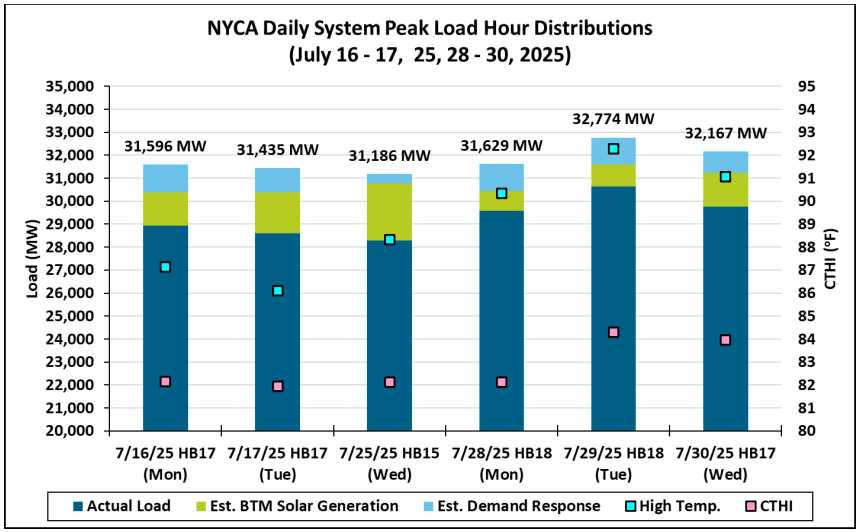
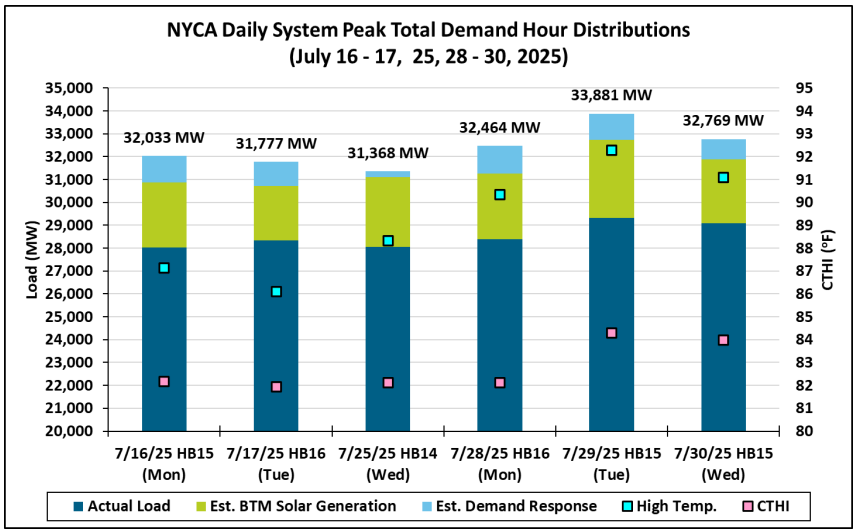
July 2025 High Load Days





- **The plots above represent the load disaggregation during the following respective peak hours each day:**
  - System Peak (left): The maximum Observed Load by Operations in real time
  - System Total Demand (right): The maximum Observed Load + Estimated BTM Solar Generation + Estimated Demand Response
- **BTM solar generation resulted in NYCA system peaks occurring at least 1 to 2 hours later than the peak total demand**

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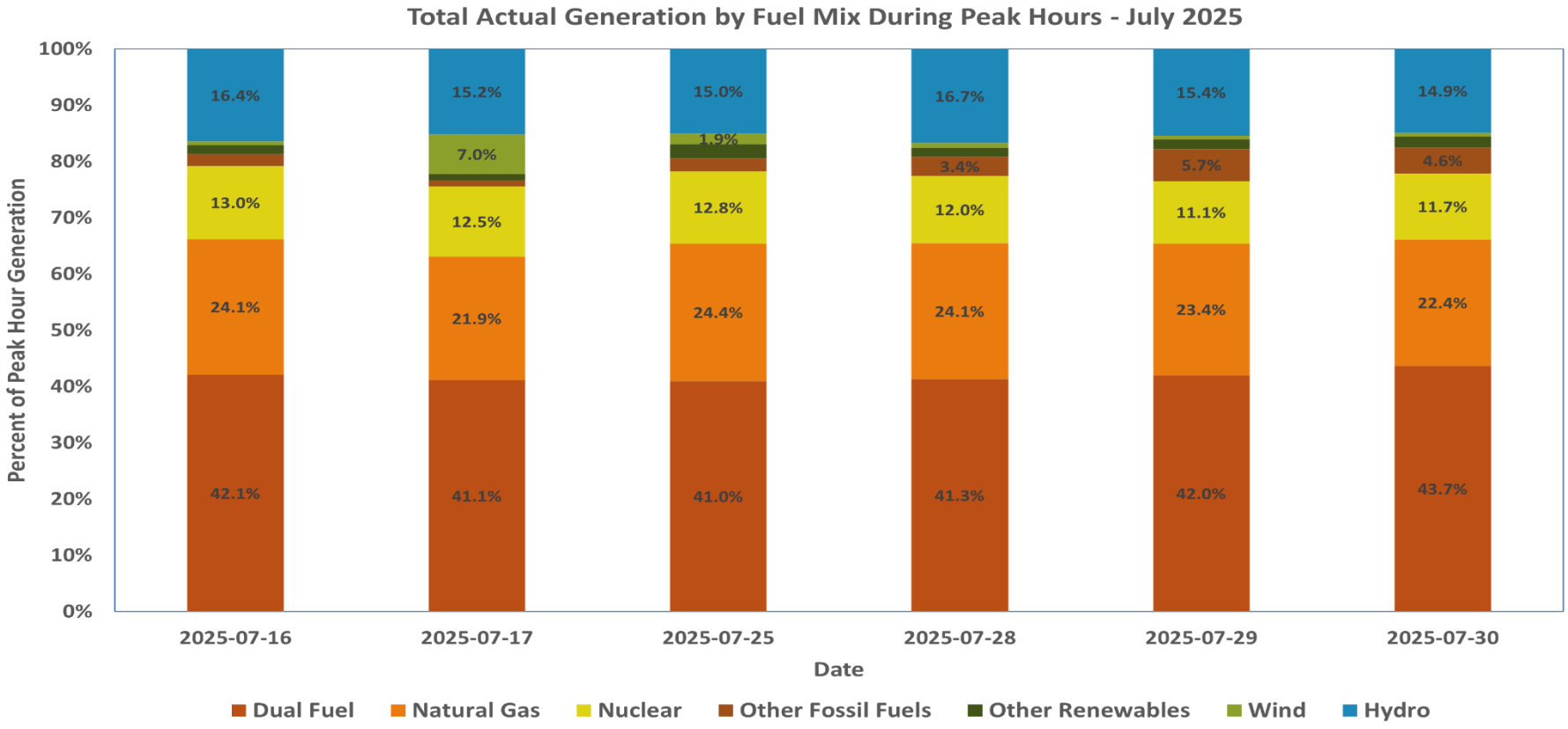

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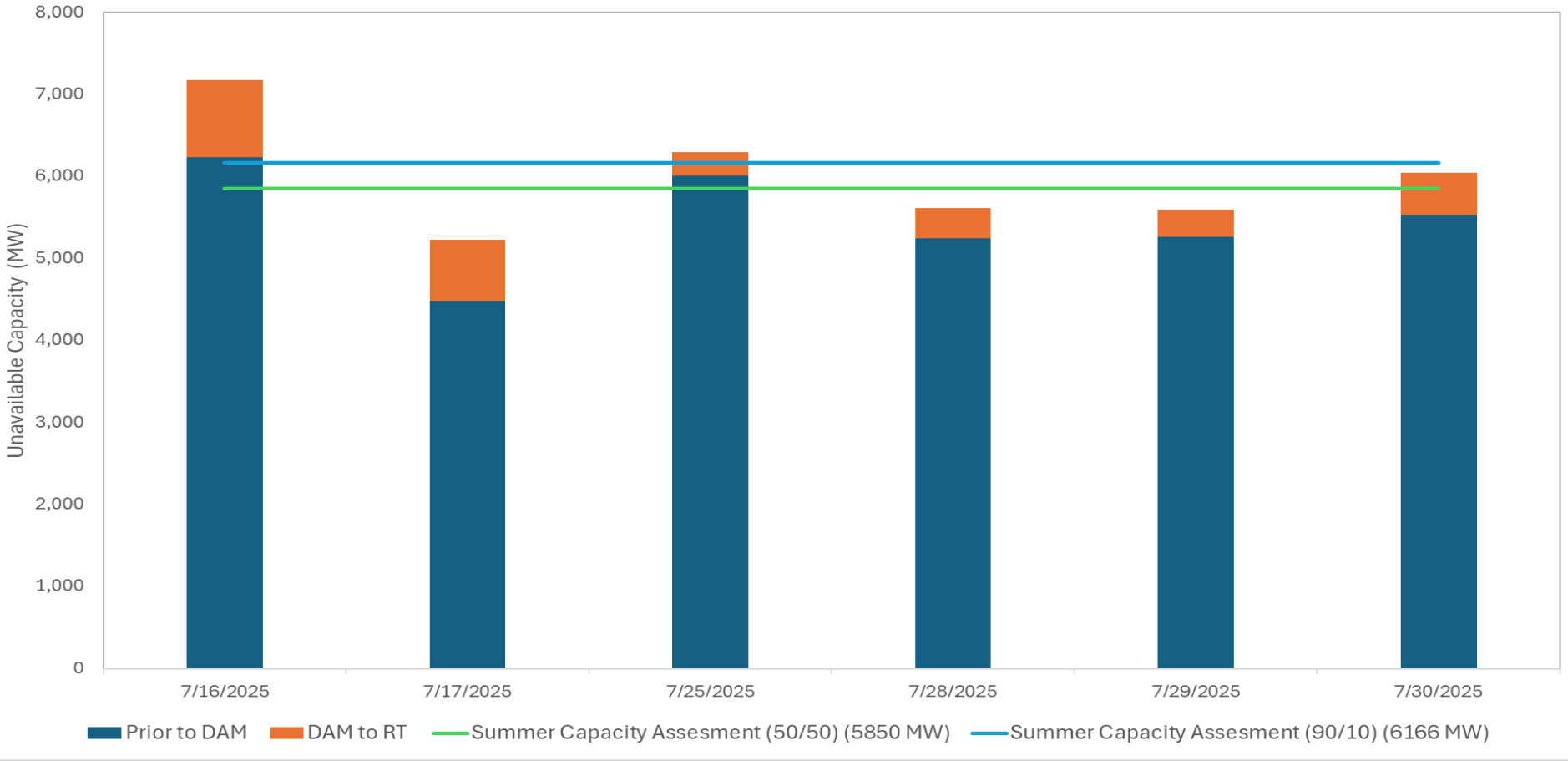
Unavailable Capacity for Peak Load Hour



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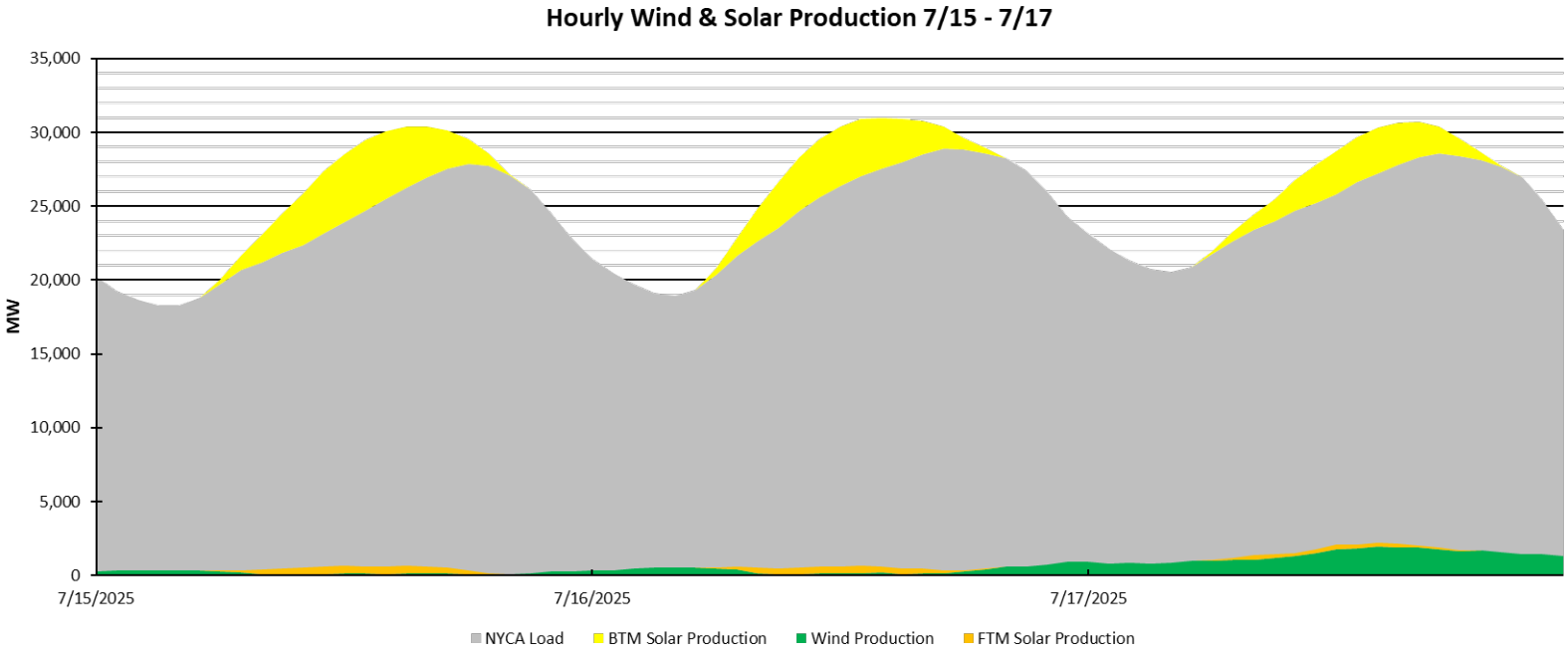
7/15–7/17 System Load vs. Renewables



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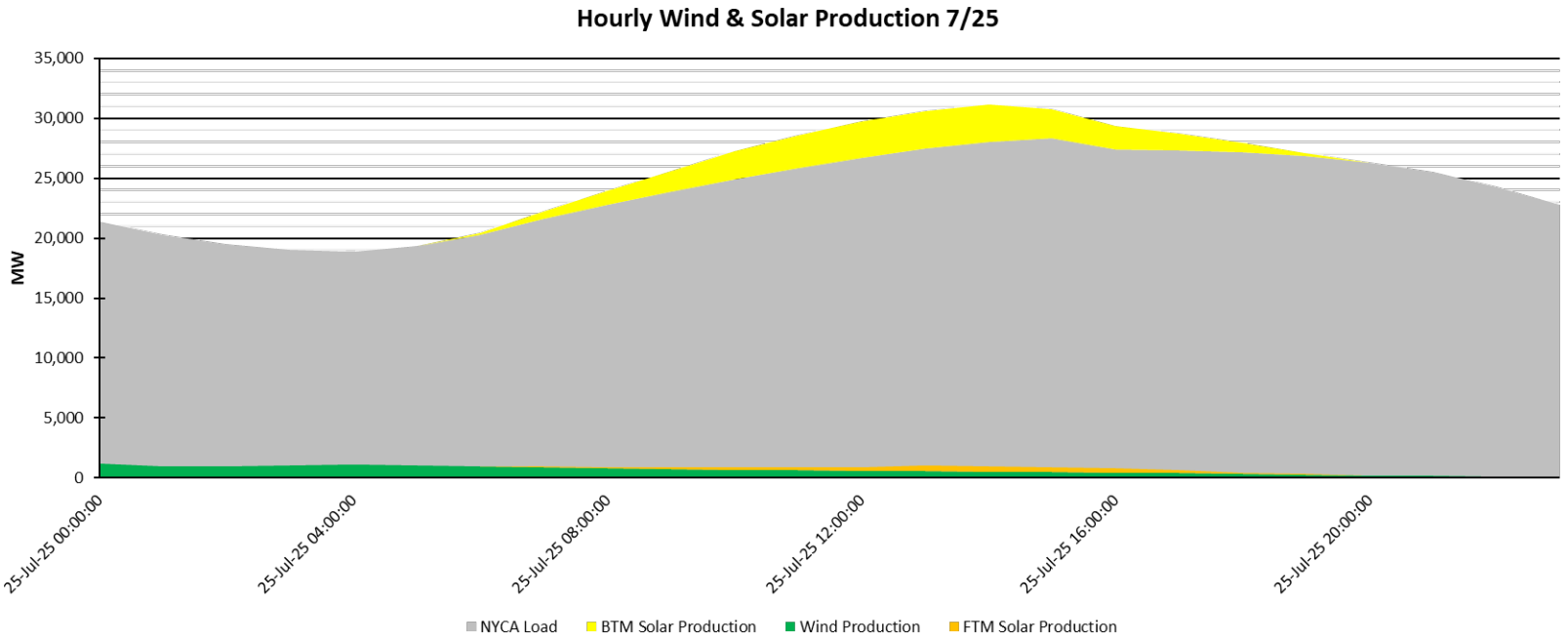
7/25 System Load vs. Renewables



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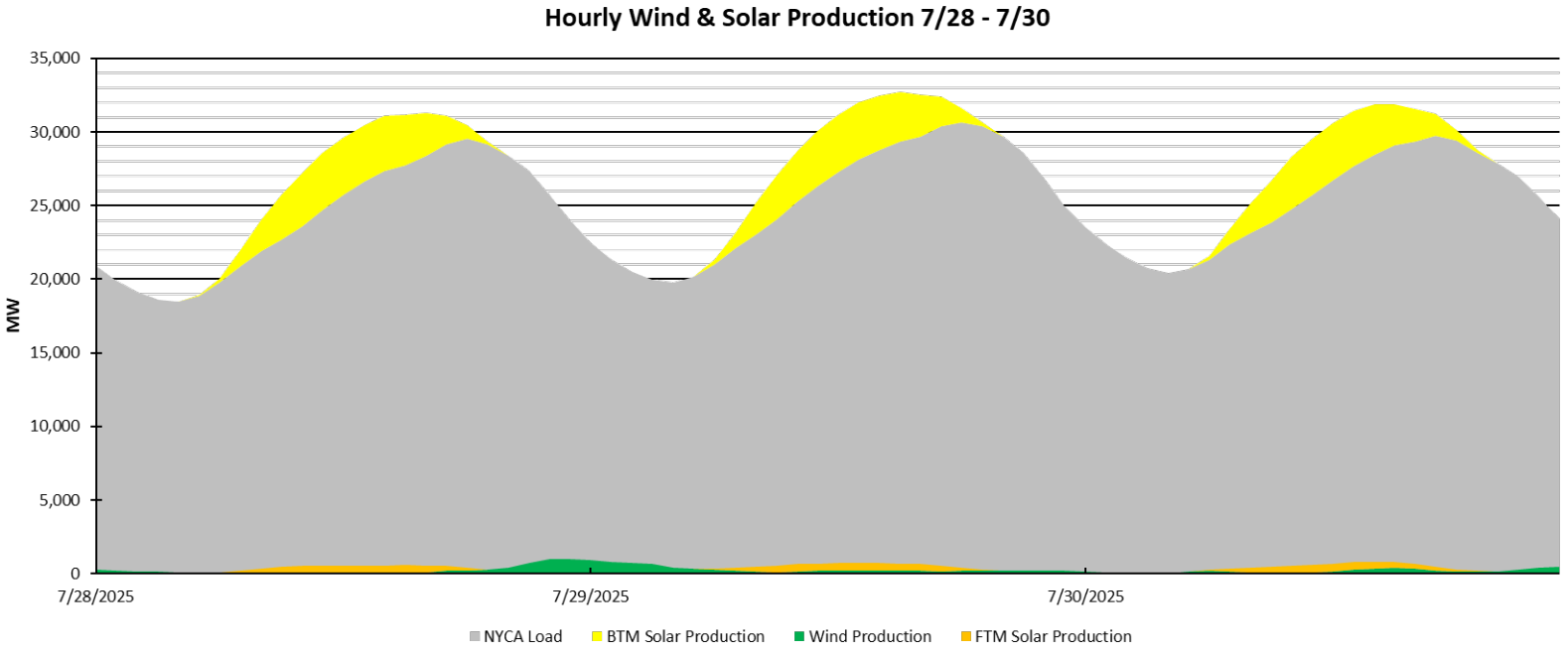
7/28–7/30 System Load vs. Renewables



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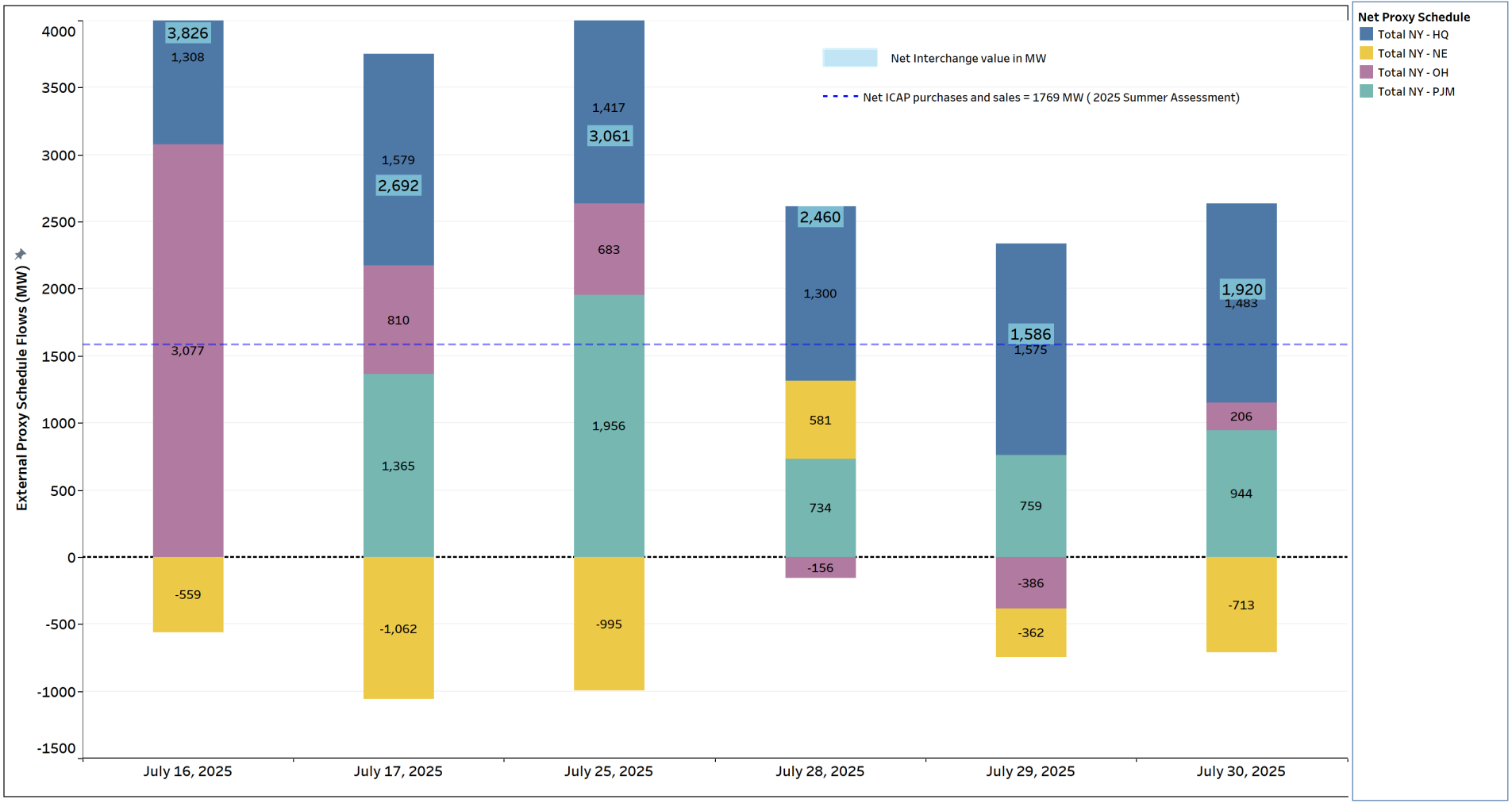
External Proxy Schedules During Peak Load Hour



July 2025 Utility Retail Demand Response Program Activations Snapshot

Date	Transmission Owner
07/14/2025	N.Grid, NYSEG
07/15/2025	N.Grid, NYSEG, RG&E
07/16/2025	**Central Hudson, Con Edison, N.Grid, NYSEG, RG&E**
07/17/2025	**Central Hudson, Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG**
07/19/2025	Con Edison
07/24/2025	N.Grid, NYSEG, RG&E
07/25/2025	**Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG**
07/26/2025	Con Edison
07/28/2025	**Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG, RG&E**
07/29/2025	**Central Hudson, Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG, RG&E**
07/30/2025	**Central Hudson, Con Edison, LIPA/PSEG-LI, N.Grid, NYSEG**

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Questions?

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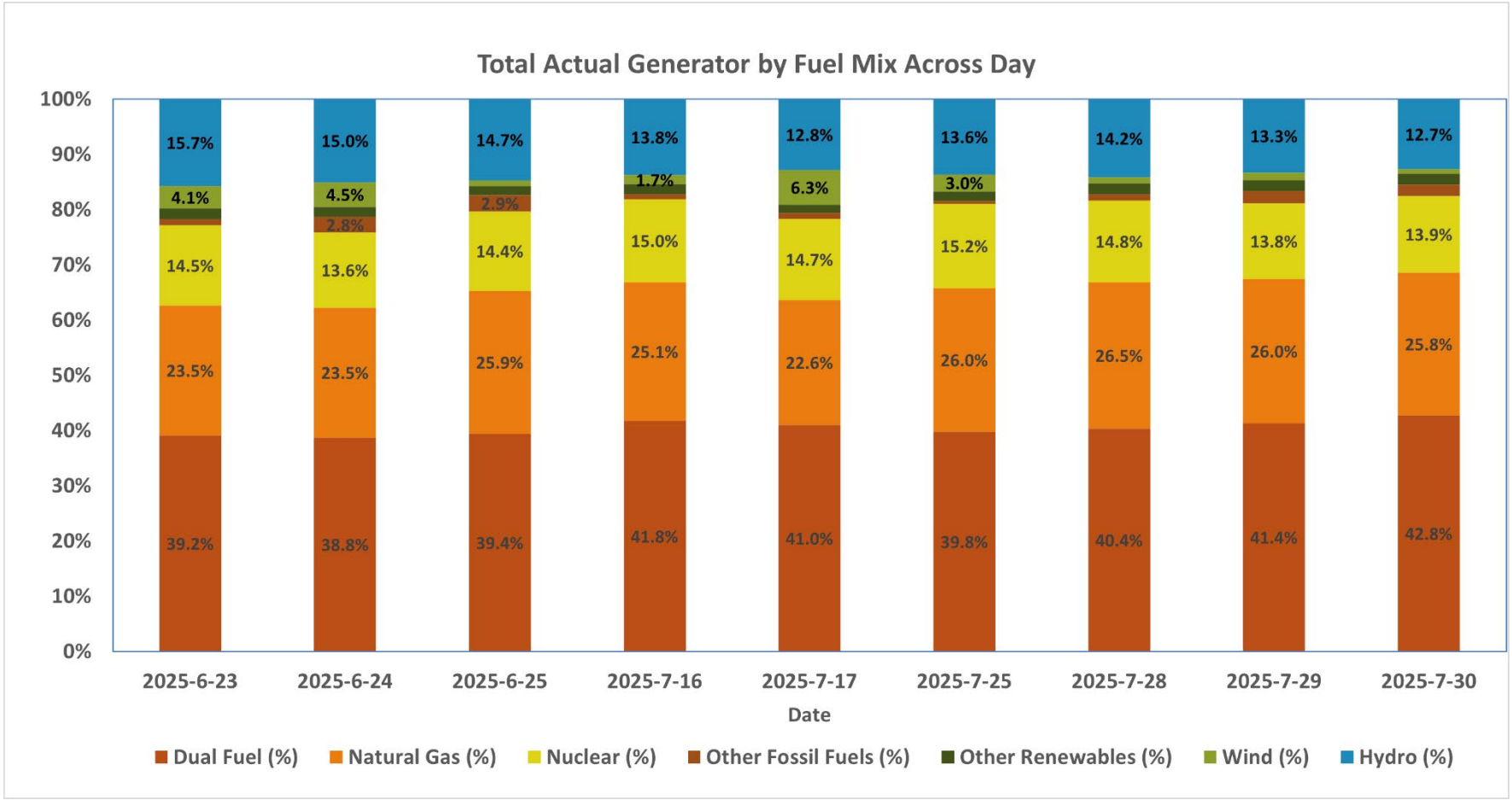
Appendix



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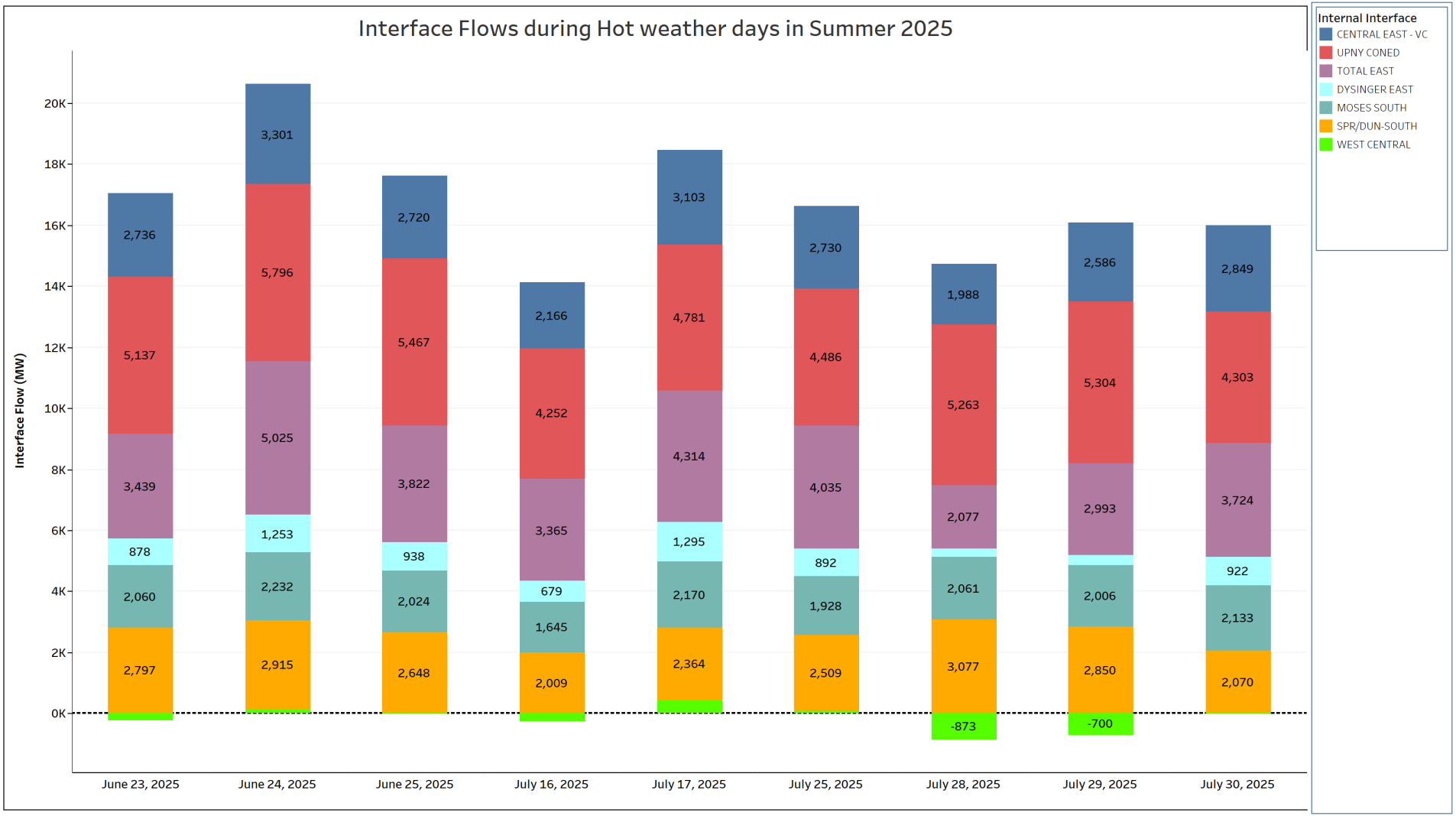
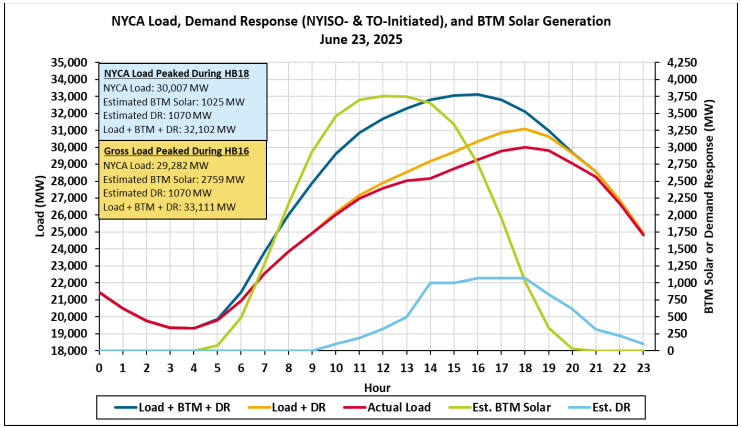
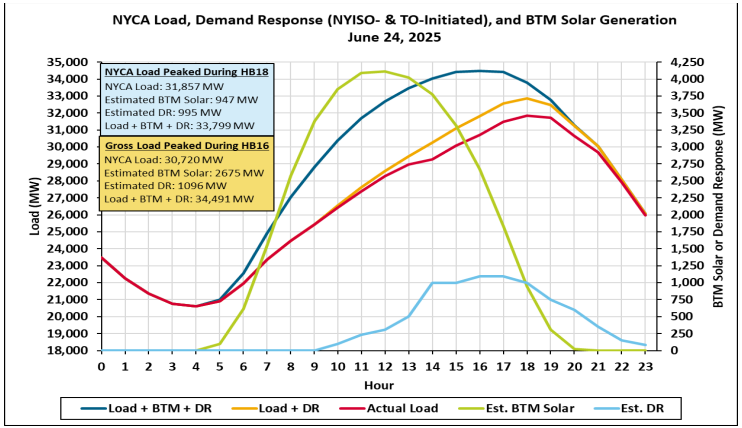
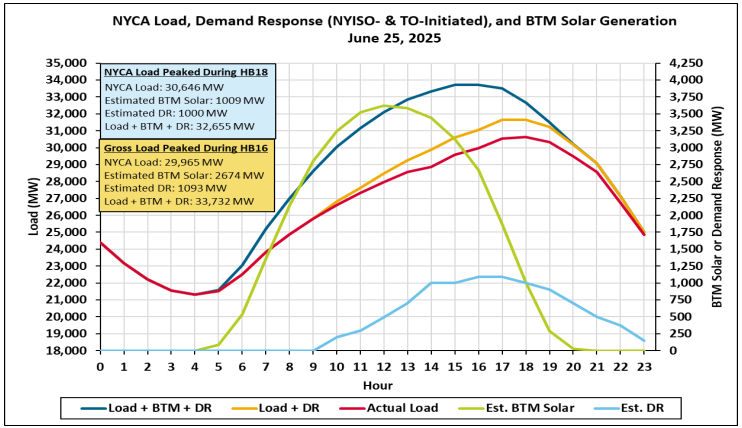

Interface Flows during Hot weather days in Summer 2025
Interface Flow (MW)
20K
18K
16K
14K
12K
10K
8K
6K
4K
2K
0K
June 23, 2025
June 24, 2025
June 25, 2025
July 16, 2025
July 17, 2025
July 25, 2025
July 28, 2025
July 29, 2025
July 30, 2025
2,736
5,137
3,439
878
2,060
2,797
3,301
5,796
5,025
1,253
2,232
2,915
2,720
5,467
3,822
938
2,024
2,648
2,166
4,252
3,365
679
1,645
2,009
3,103
4,781
4,314
1,295
2,170
2,364
2,730
4,486
4,035
892
1,928
2,509
1,988
5,263
2,077
2,061
3,077
-873
2,586
5,304
2,993
2,006
2,850
-700
2,849
4,303
3,724
922
2,133
2,070
Internal Interface
CENTRAL EAST - VC
UPNY CONED
TOTAL EAST
DYSINGER EAST
MOSES SOUTH
SPR/DUN-SOUTH
WEST CENTRAL

June 23–25, 2025







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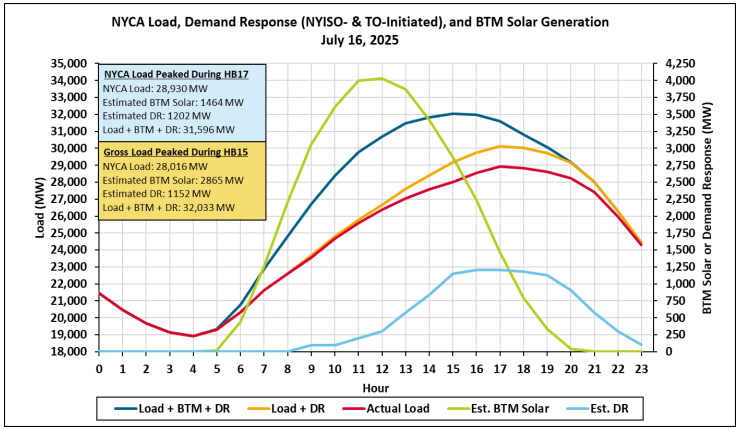
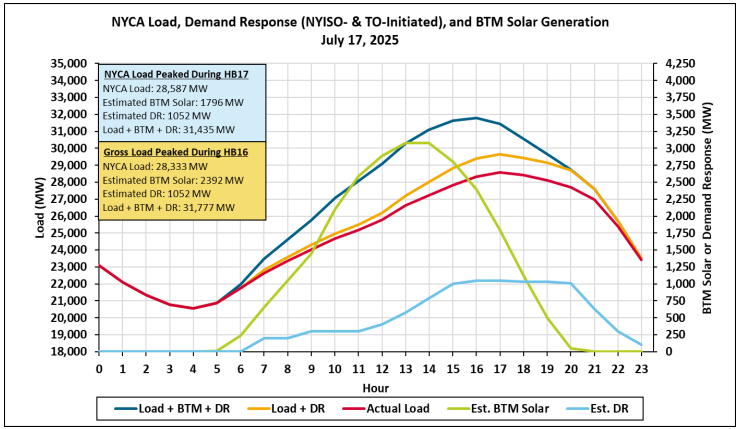
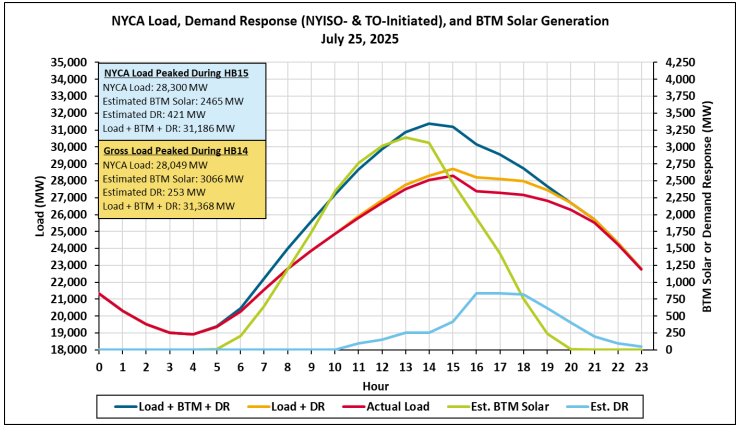
July 16–17 & 25, 2025







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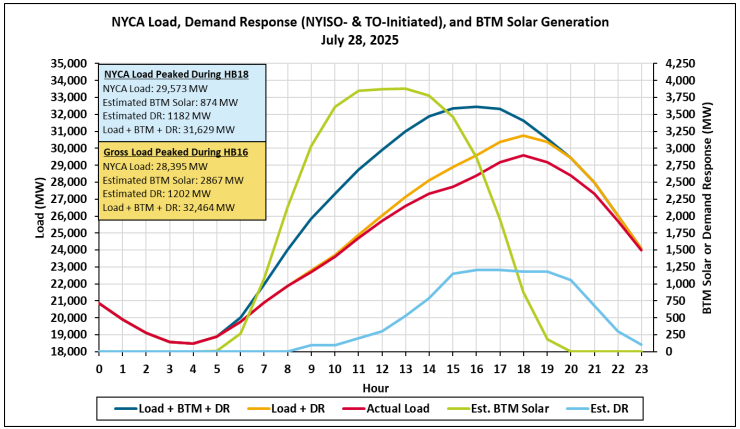
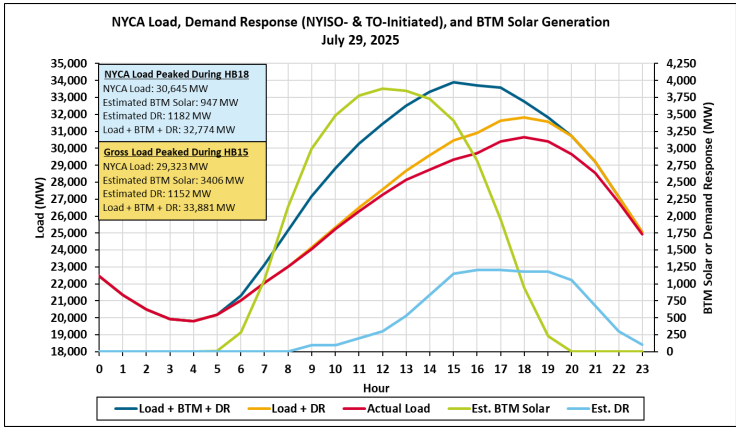
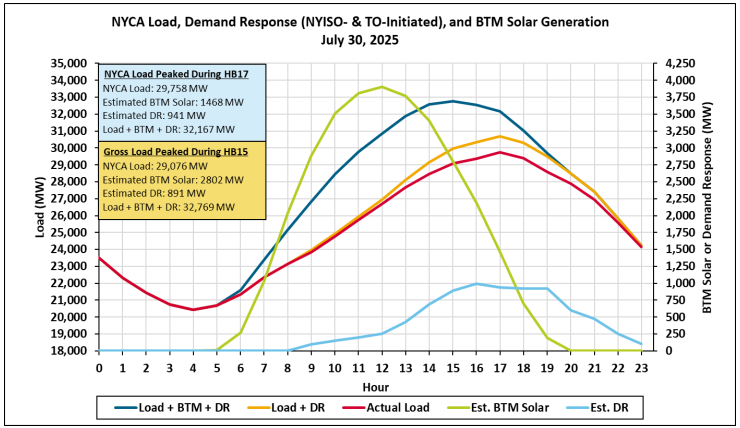
July 28–30, 2025







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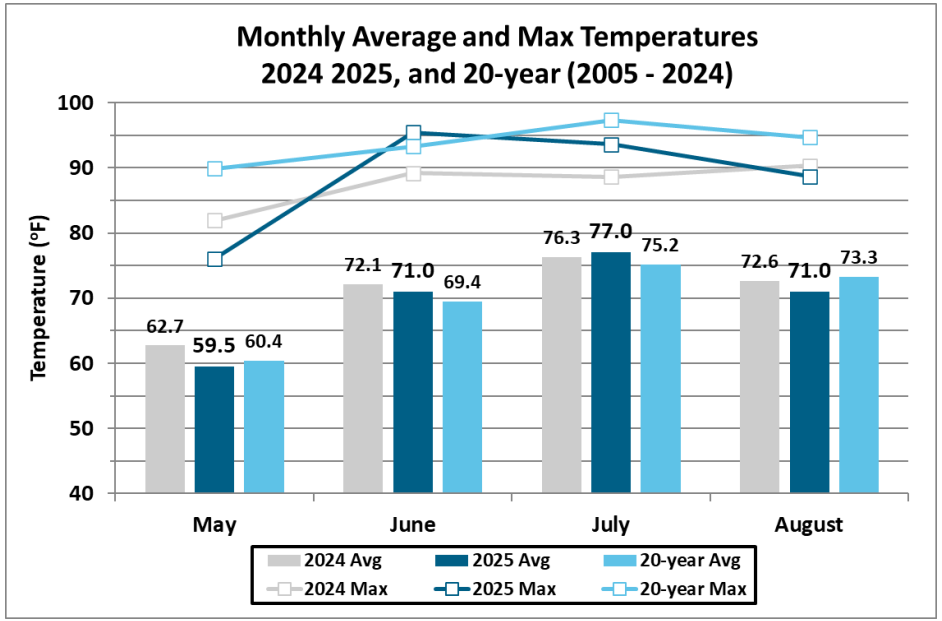
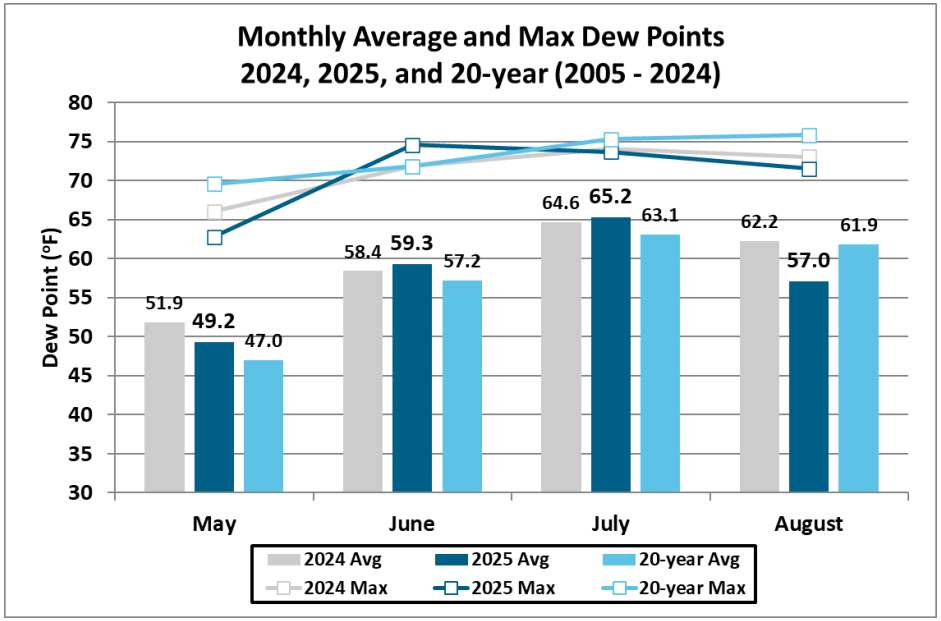
Historical Comparison of Temperature and Dew Point





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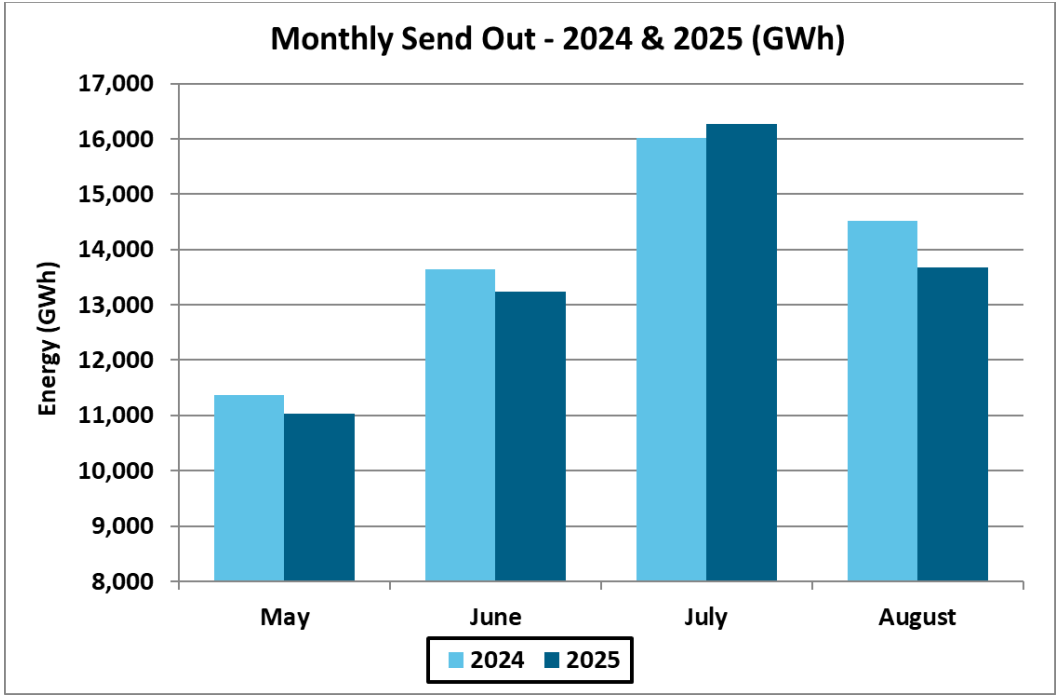
2024 & 2025 Total Energy Demand Comparison



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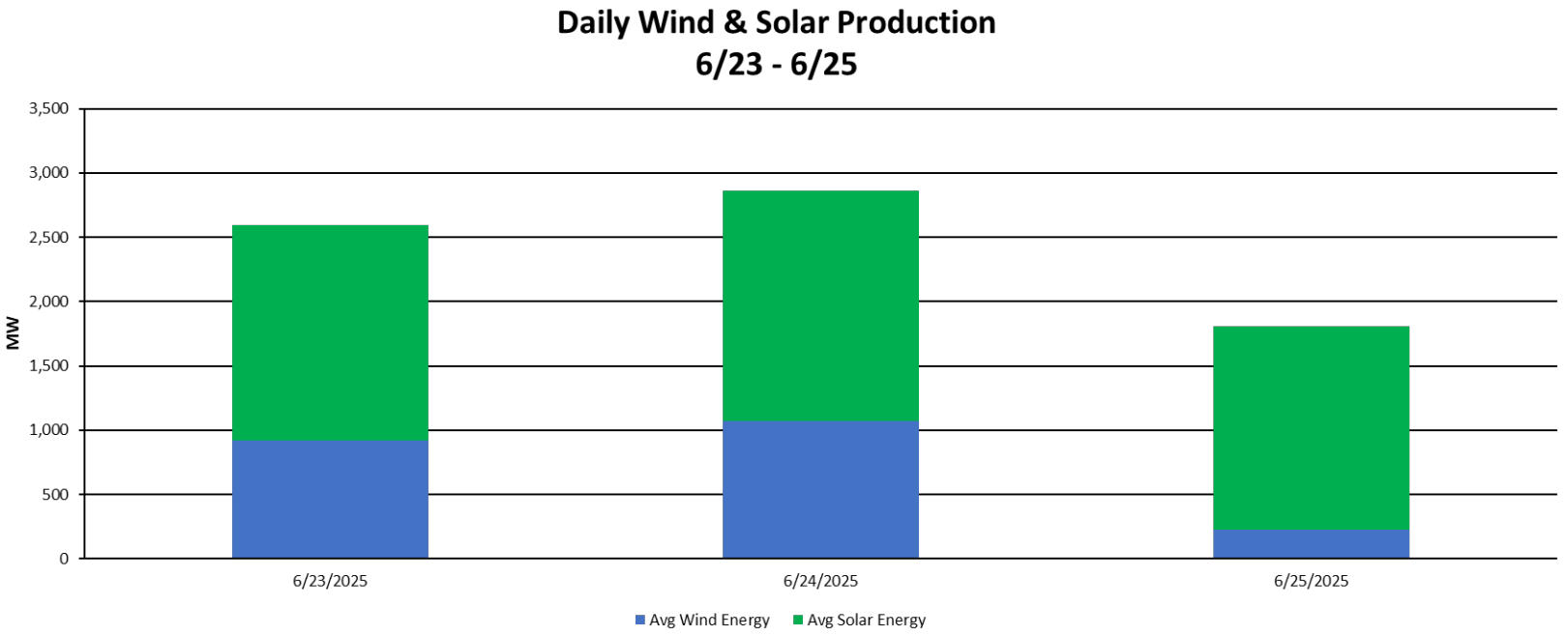
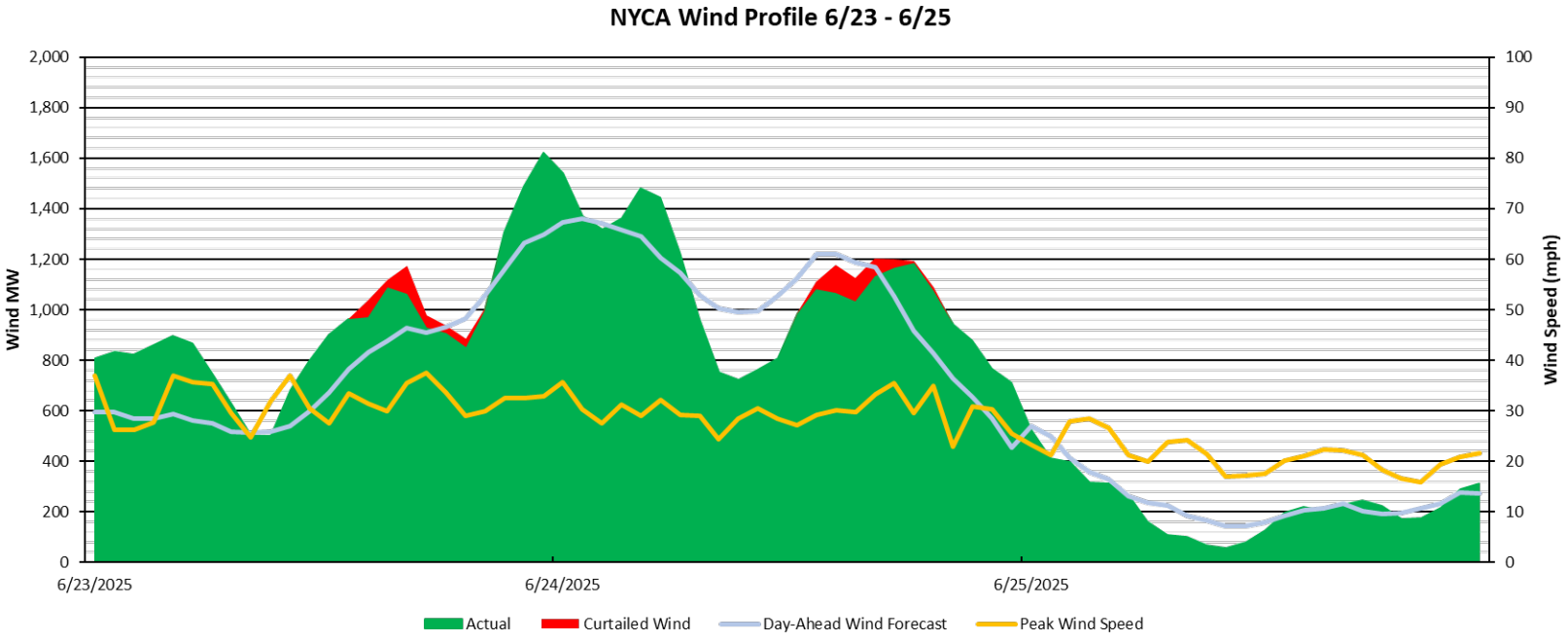
6/23–6/25 Renewable Production



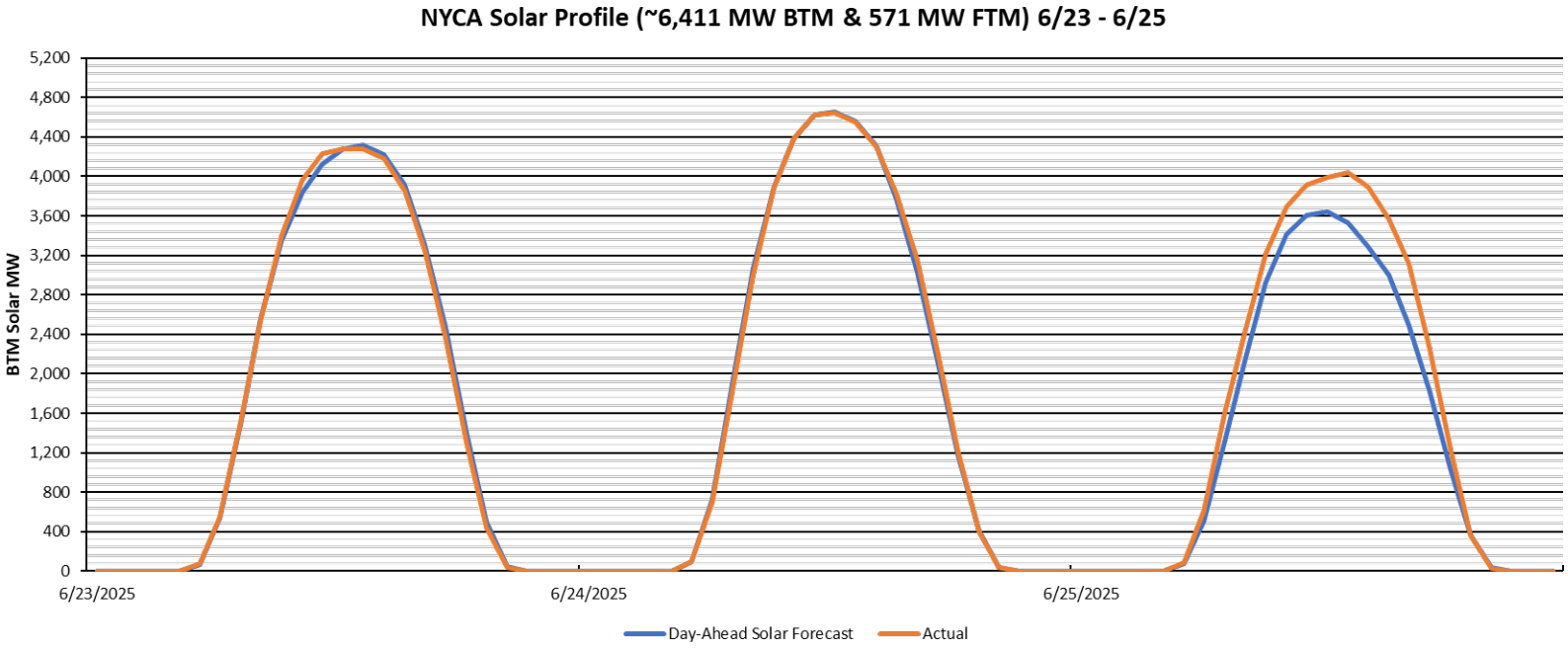
New York ISO

6/23–6/25 Wind Production



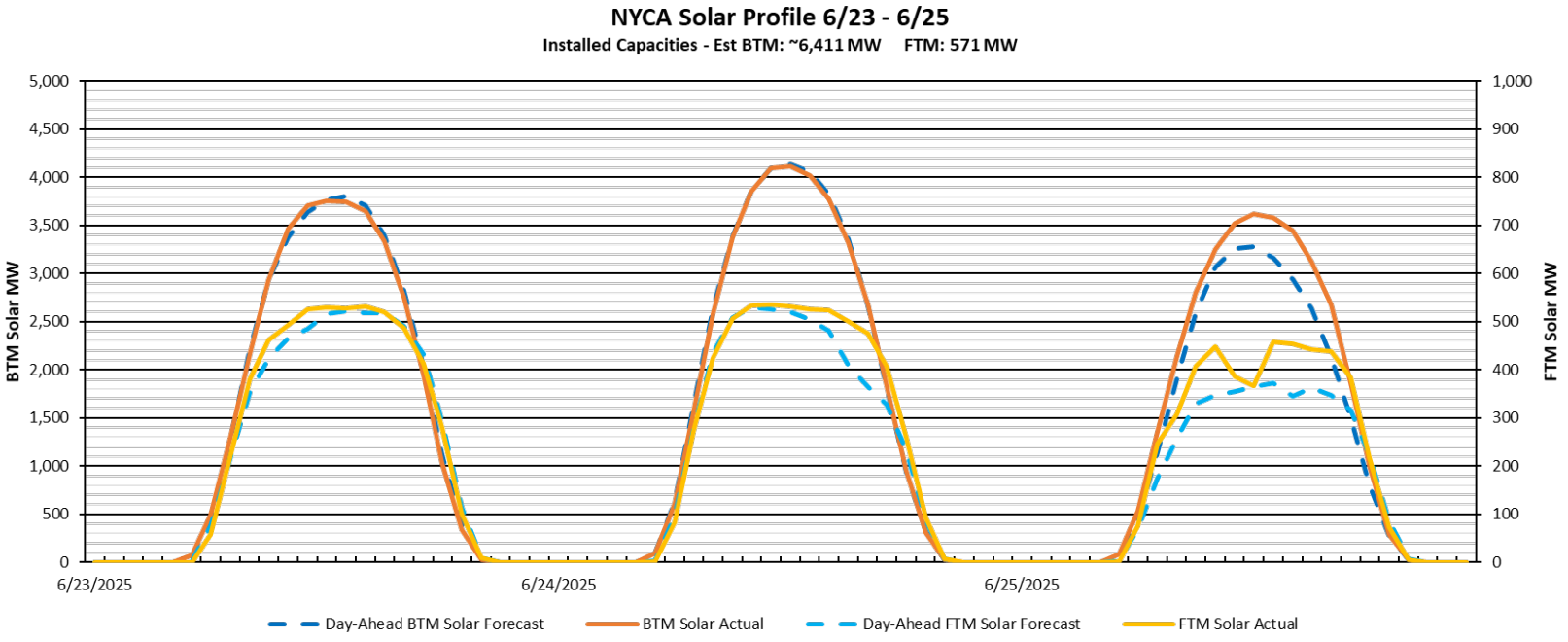
New York ISO

6/23–6/25 Total Solar Production



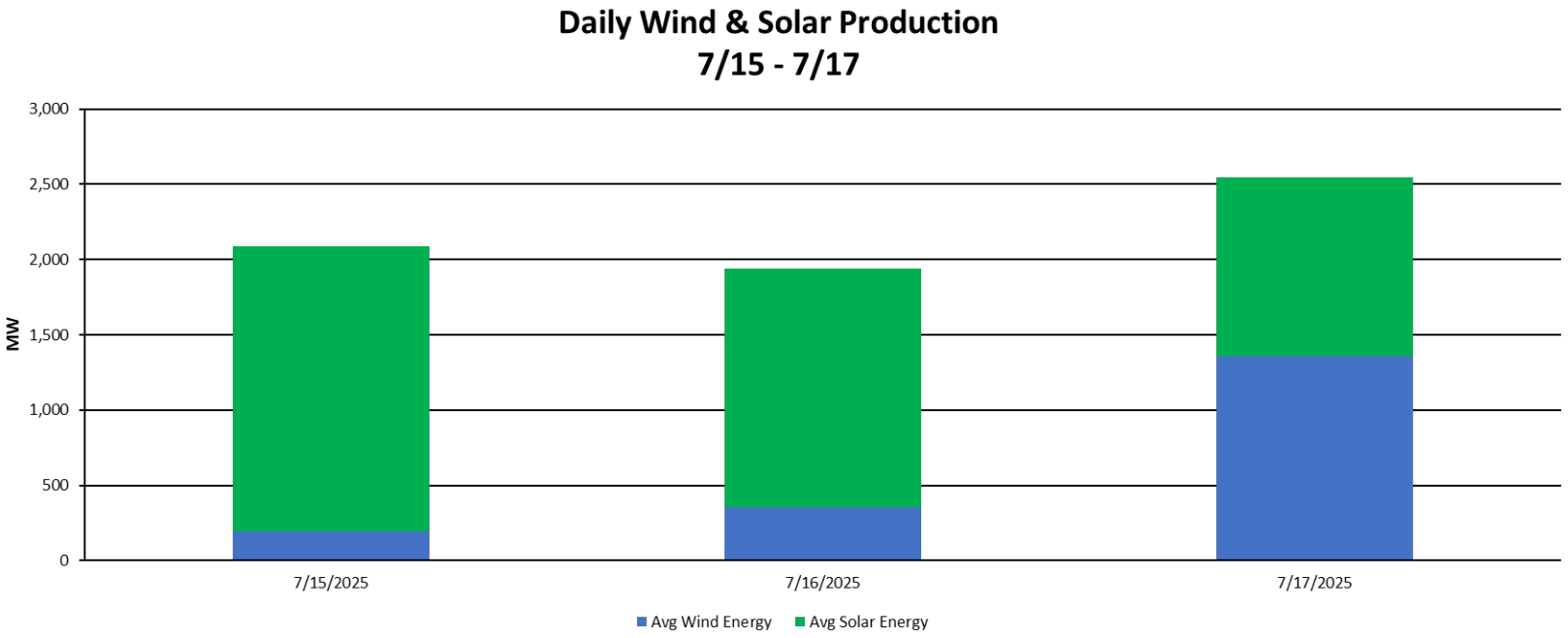
New York ISO

6/23–6/25 Disaggregated Solar Production



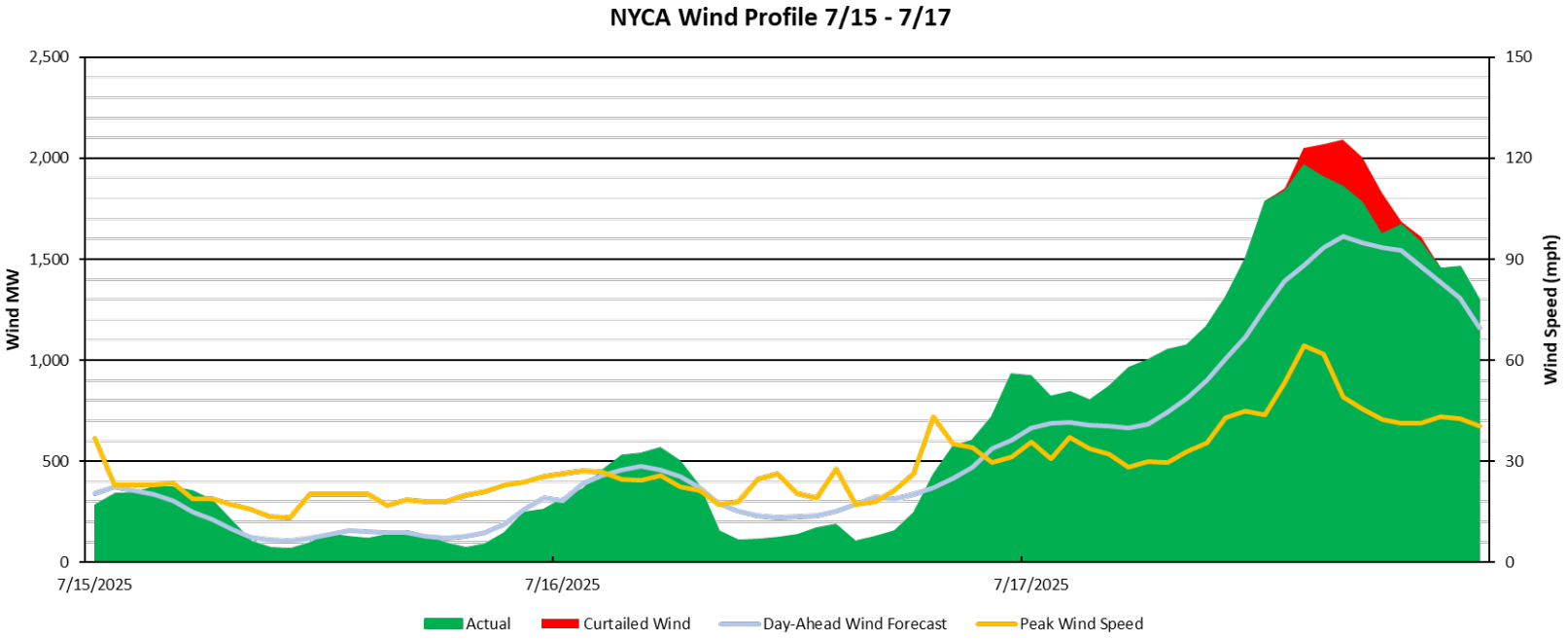
New York ISO

7/15–7/17 Renewable Production



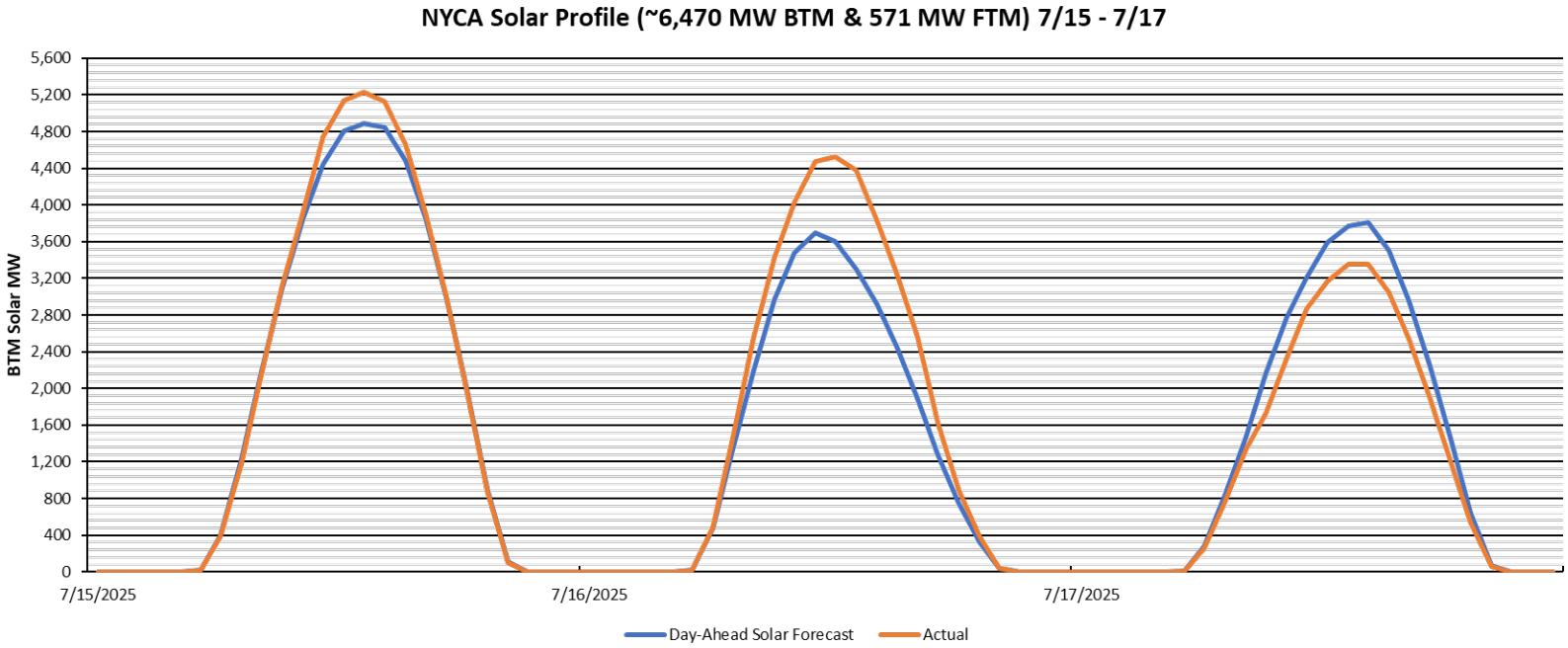
New York ISO

7/15–7/17 Wind Production



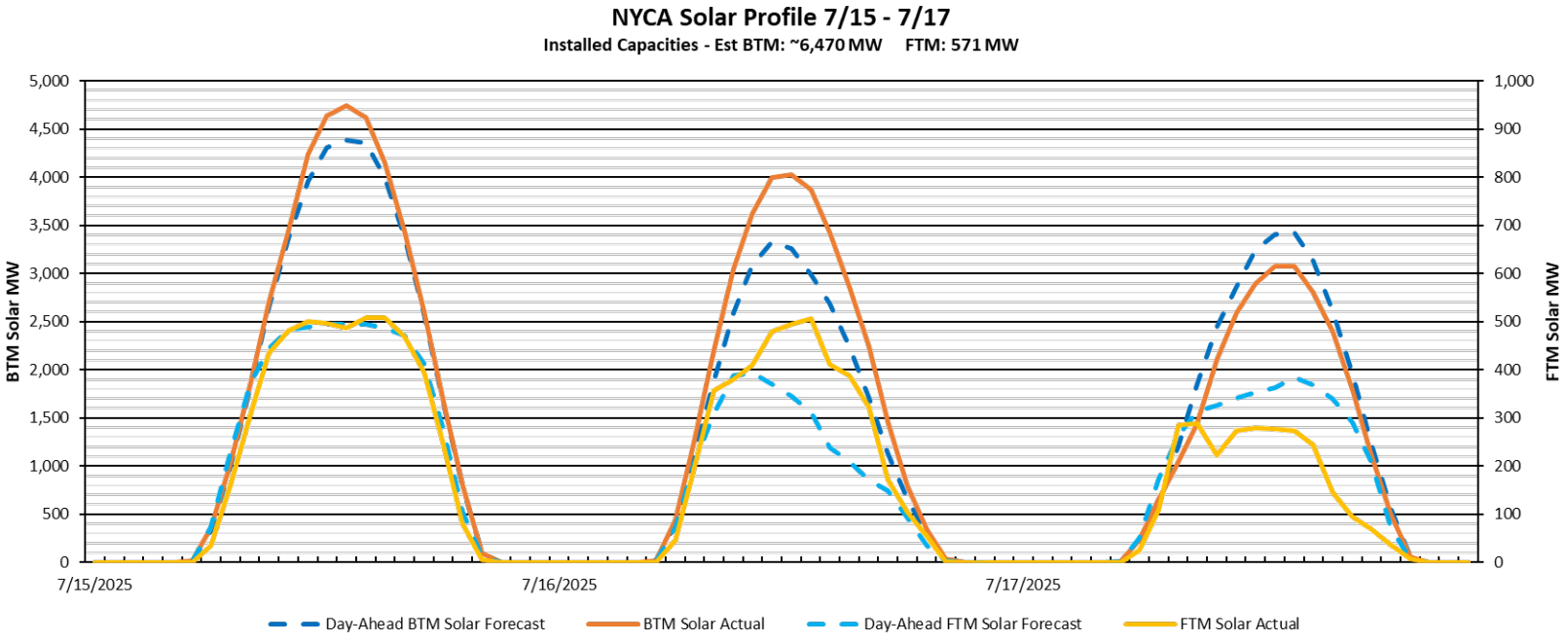
New York ISO

7/15–7/17 Total Solar Production



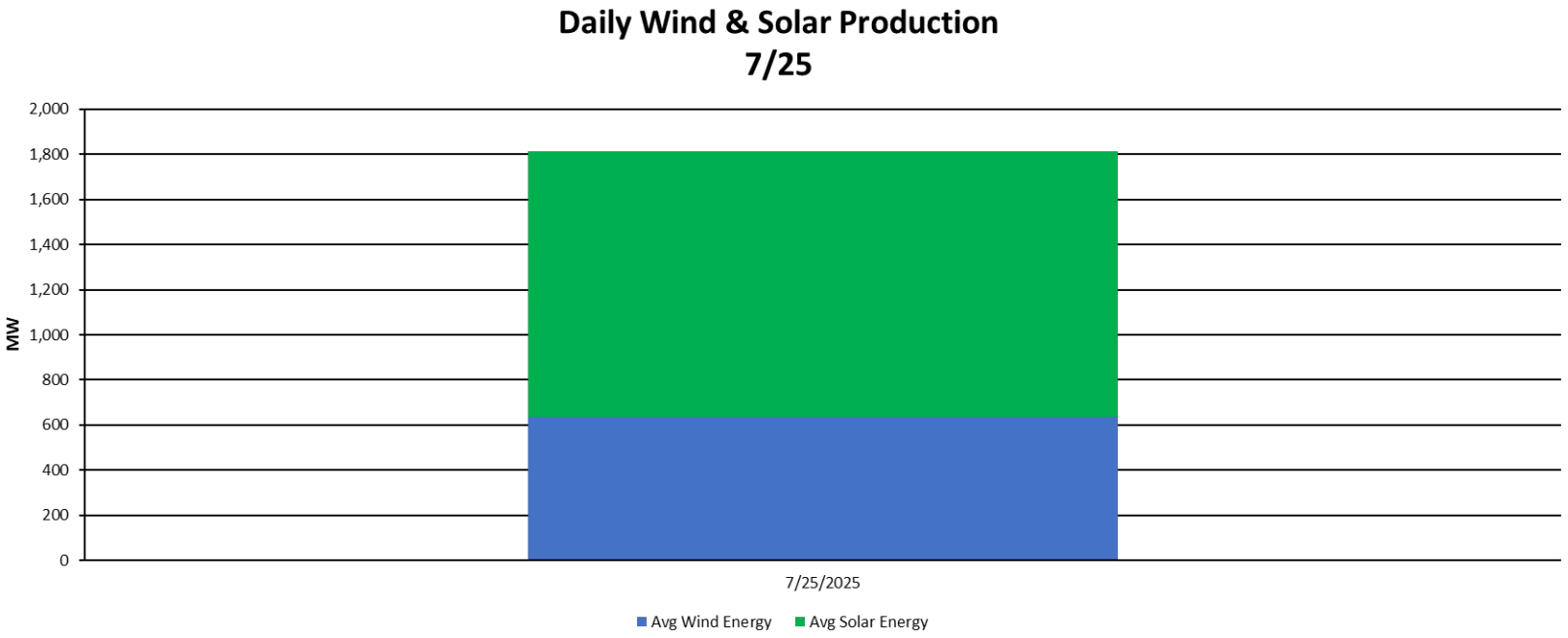
New York ISO

7/15–7/17 Disaggregated Solar Production



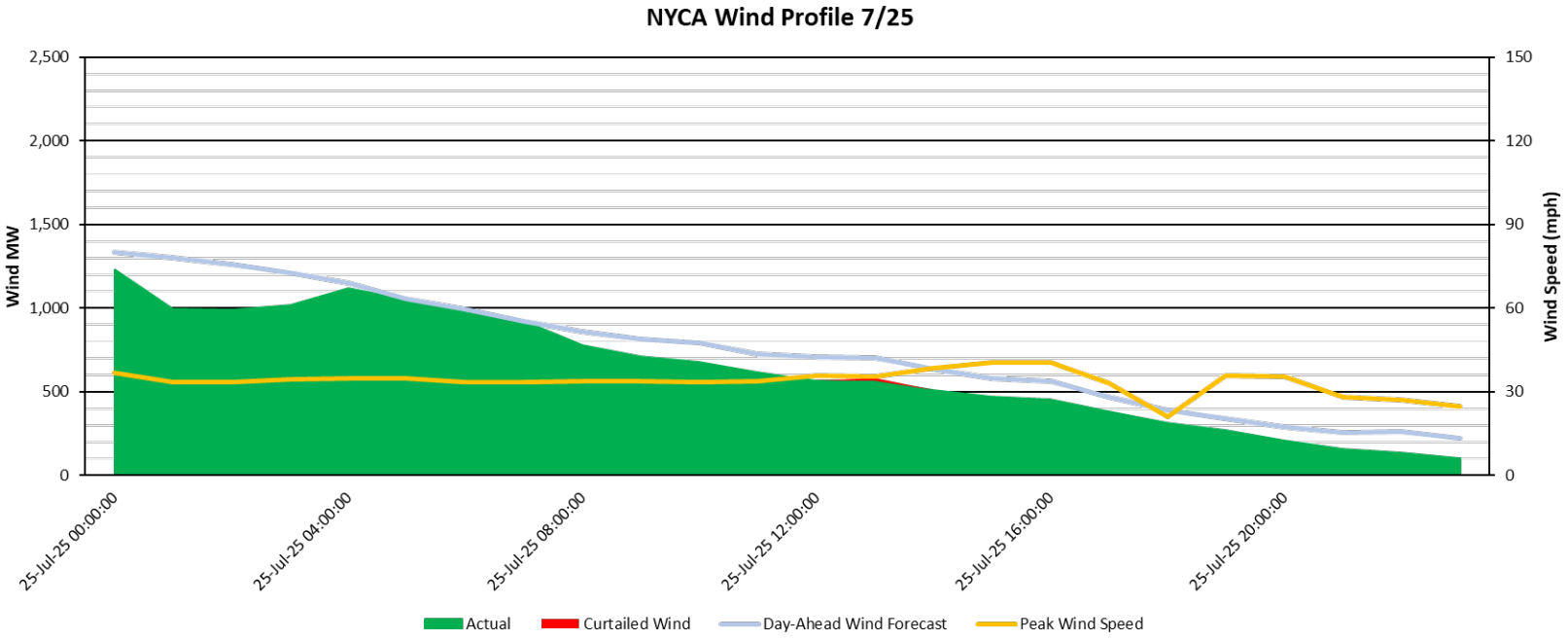
New York ISO

7/25 Renewable Production



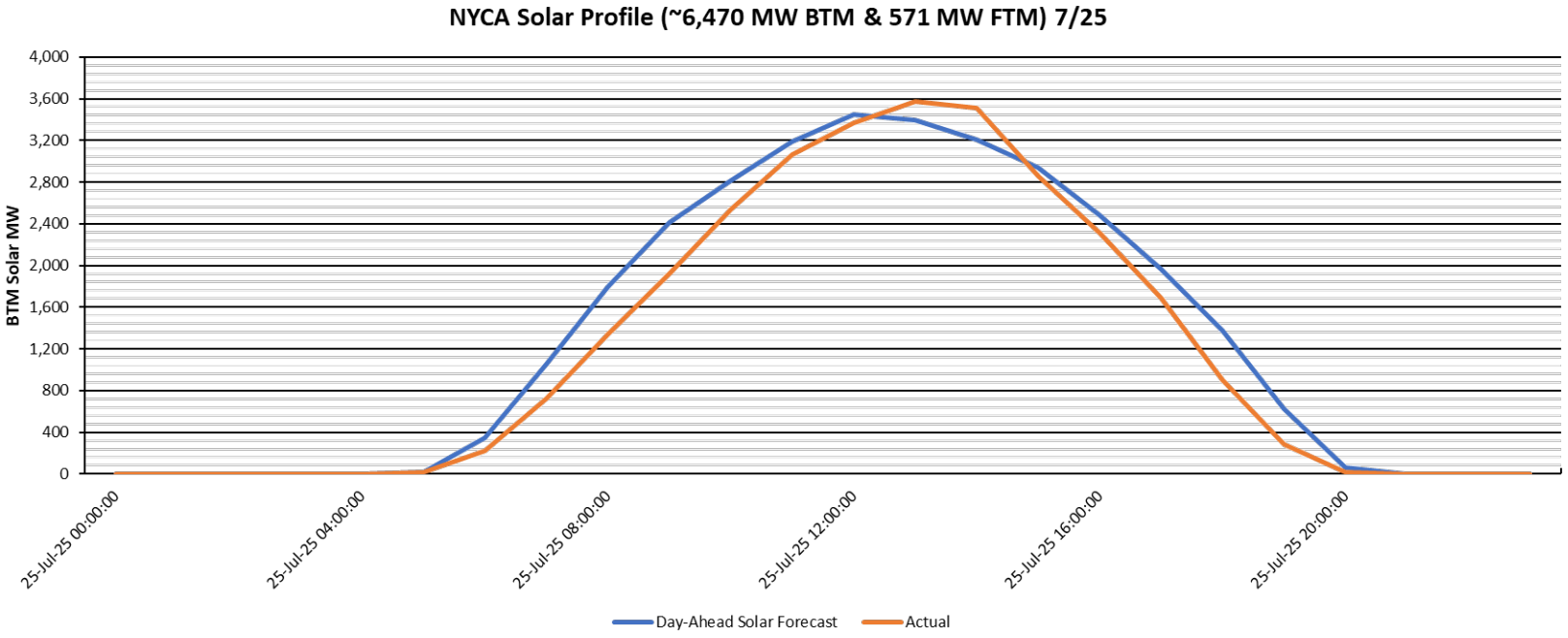
New York ISO

7/25 Wind Production



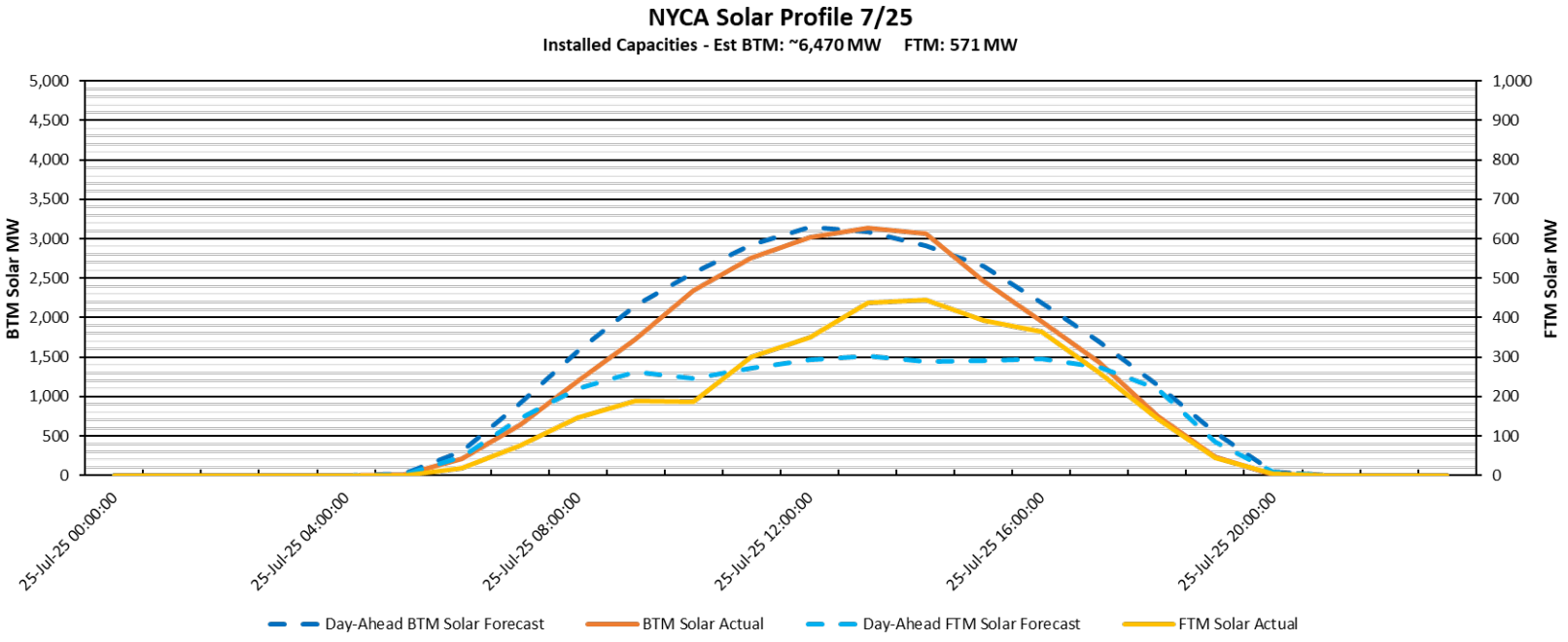
New York ISO

7/25 Total Solar Production



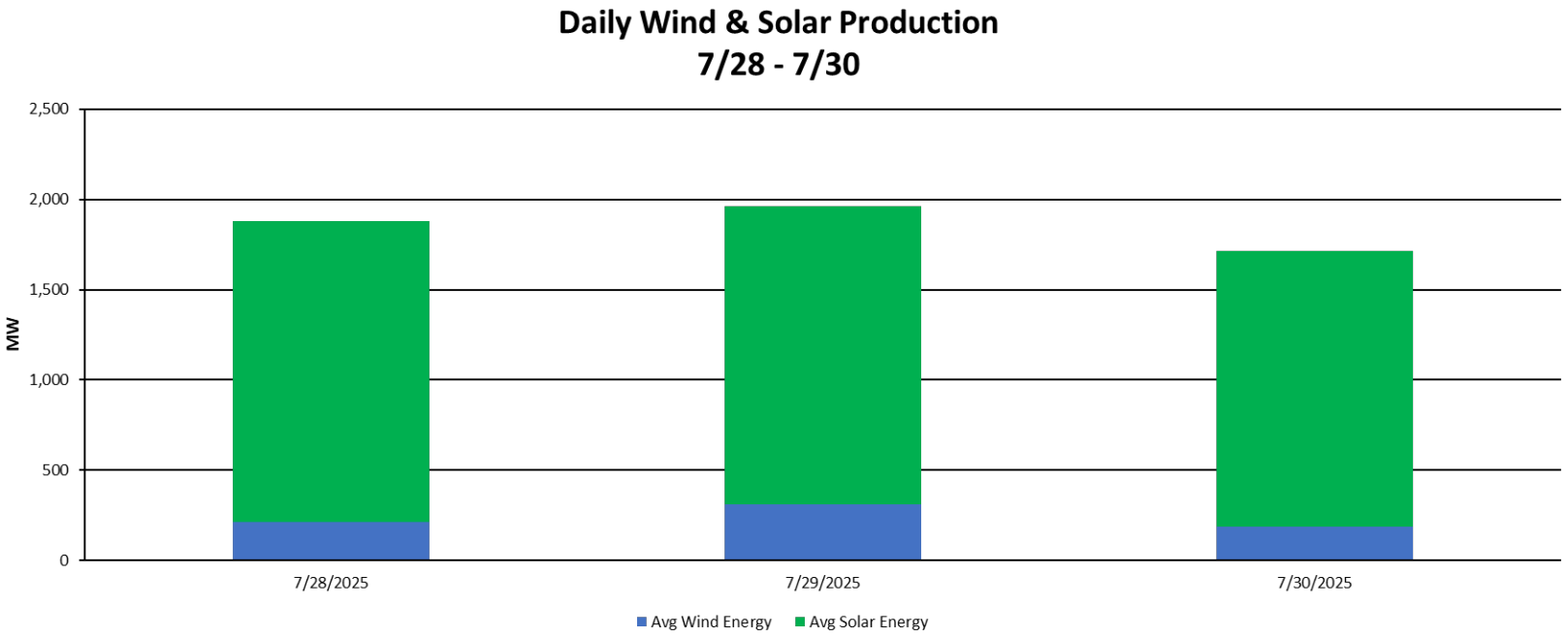
New York ISO

7/25 Disaggregated Solar Production



New York ISO

7/28–7/30 Renewable Production



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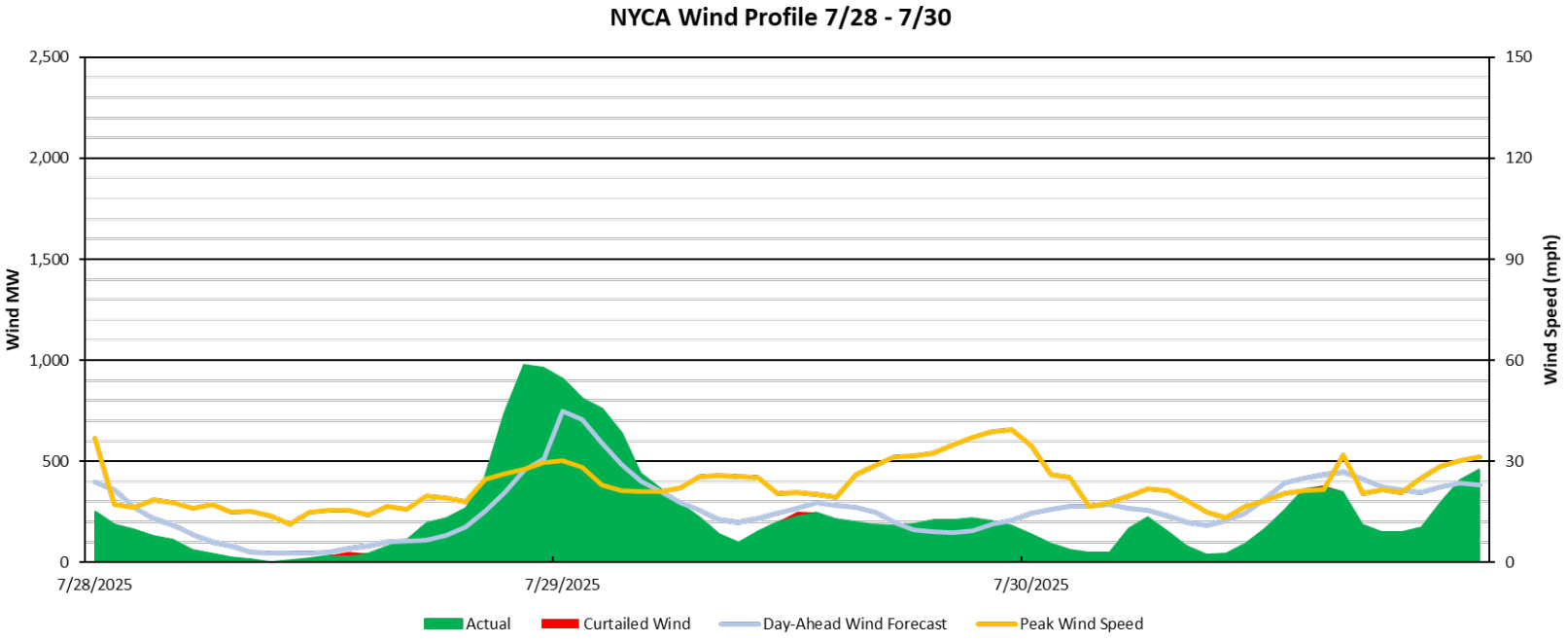
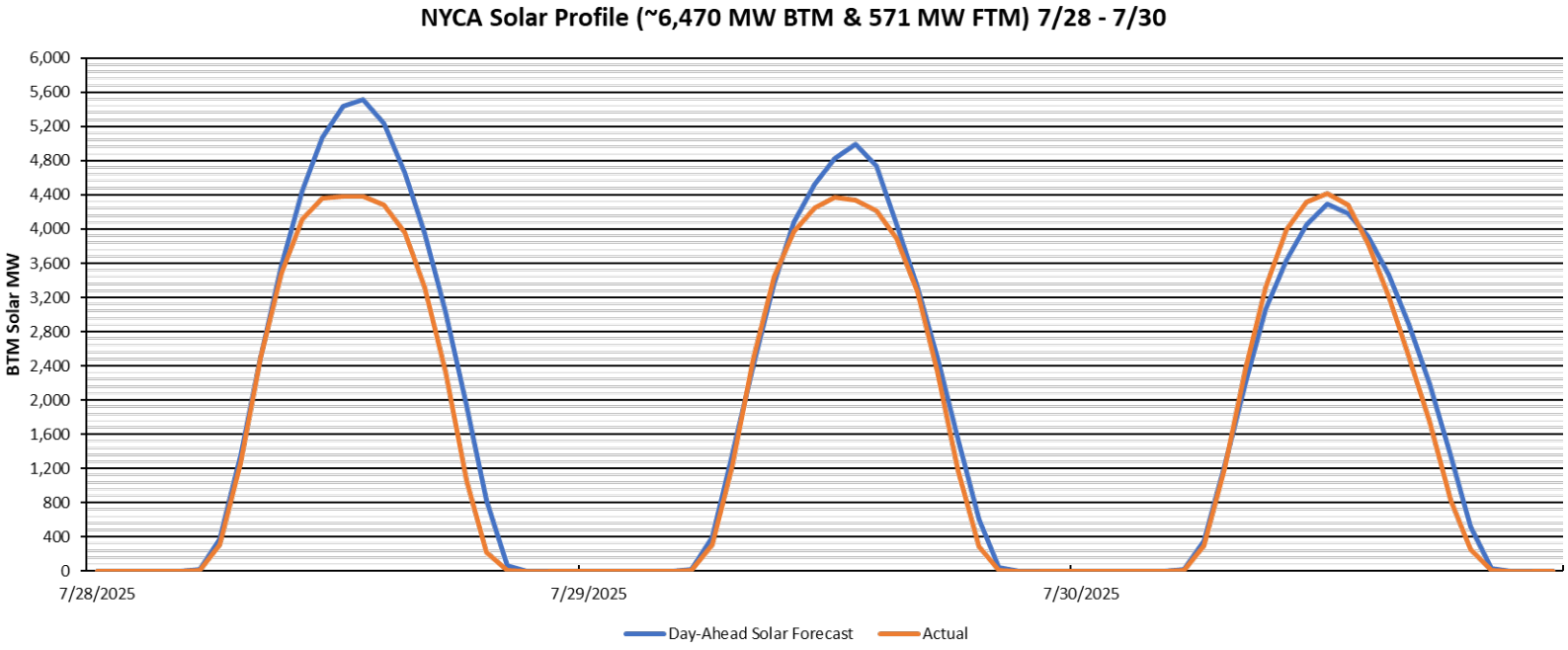
7/28–7/30 Wind Production



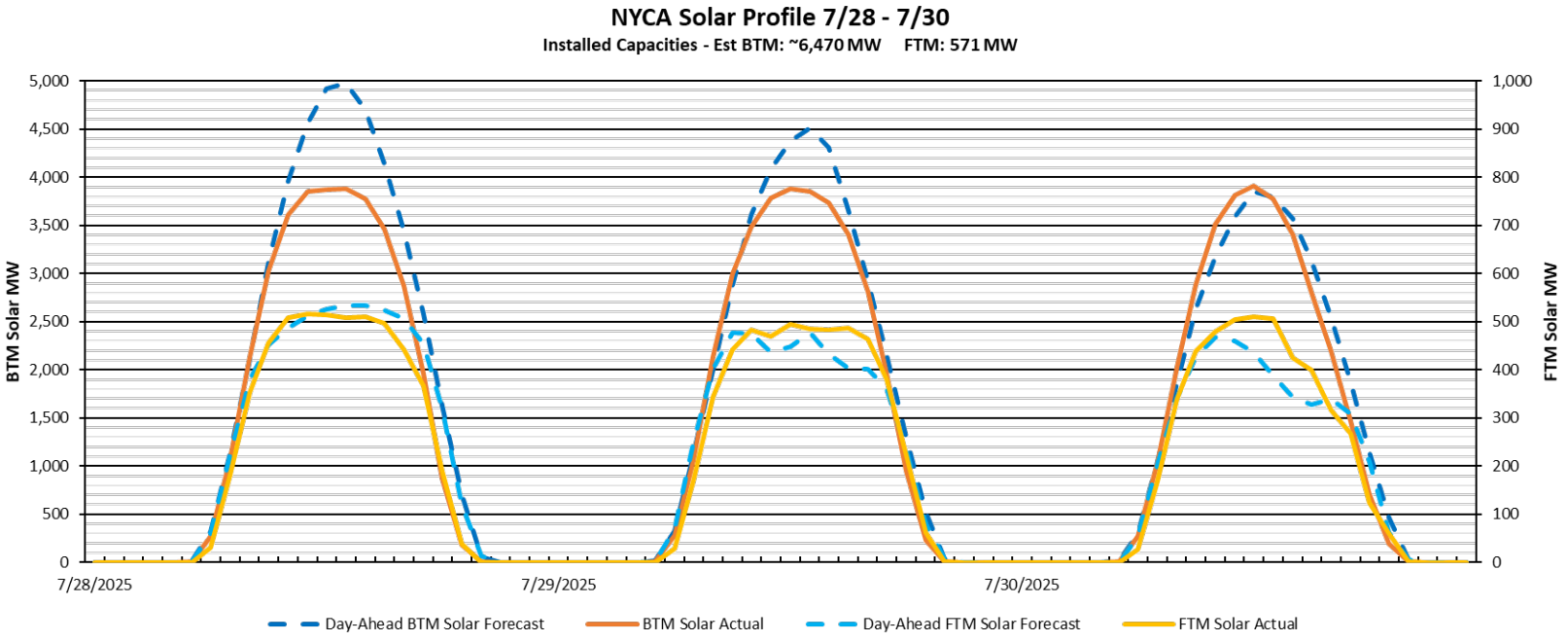
New York ISO

7/28–7/30 Total Solar Production

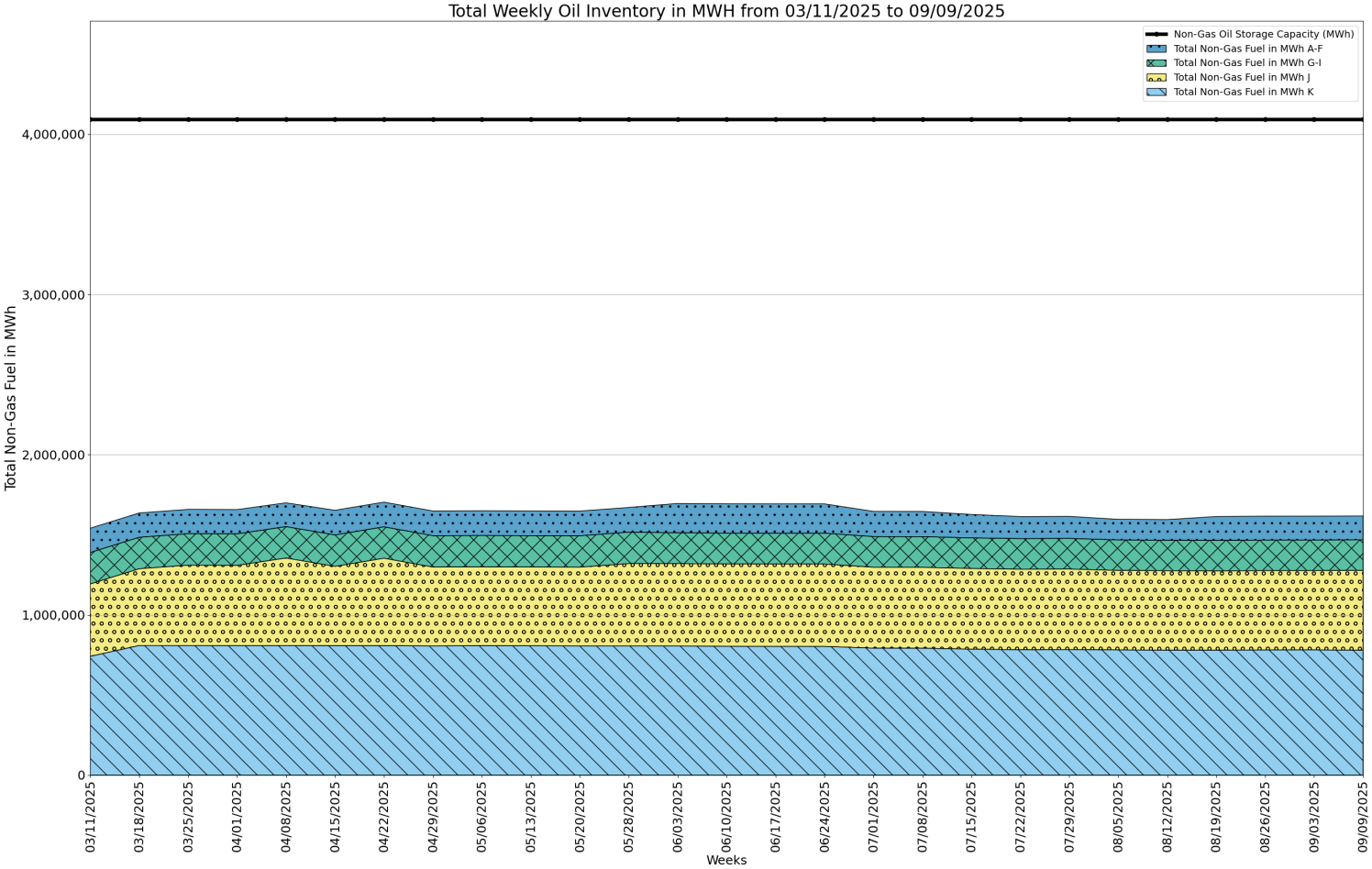


New York ISO

7/28–7/30 Disaggregated Solar Production



New York ISO



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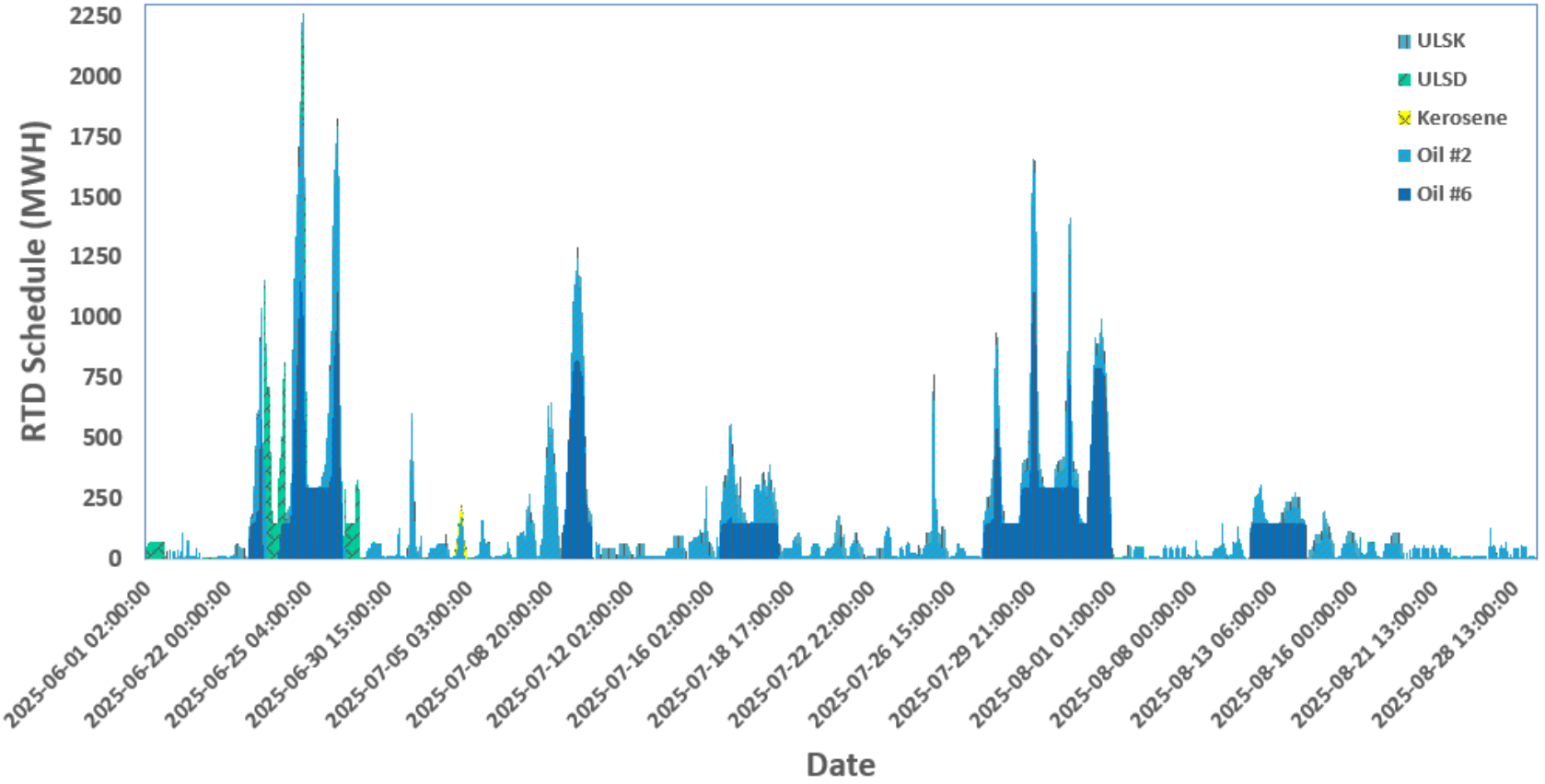
Alternative Fuel Mix Plot for 06-01-2025 to 08-31-2025



New York ISO

Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

New York ISO