New York ISO
Independent System Operator

NYISO Summer 2024 Hot Weather Operations

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VICE PRESIDENT, OPERATIONS

NYSRC EC

November 15, 2024, Albany, NY

Agenda

- Key Observations from Summer 2024 Operations
- Operations during Hot Weather Periods in Summer 2024
  - Tuesday, June 18 – Sunday, June 23
  - Monday, July 8 – Wednesday, July 10
  - Monday, July 15 – Wednesday, July 17
  - Tuesday, August 1– Friday, August 2
- Summer Weather & Loads
- Supply Data
- Loads & Peaks
- Intermittent Production

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Key Observations from Summer 2024 Operations

Summer 2024 Key Observations

- May-early August were characterized by several extended warm and humid stretches. Overall, the average August temperature was below 20-year average
- While there were no statewide heat waves, there were more localized events. The Albany regions experienced three such heat waves (i.e., periods of three consecutive days or more with a high-temperature above 90 ^{o}F) while NYC experienced four heat waves over the course of the summer
- BTM solar has shifted the net load peaks to later in the afternoon and results in rapidly changing conditions as the solar ramps down and the system approaches the net load peak hour
- Continue to observe beneficial impacts of more operational flexibility and lower congestion from the Western NY, Segment A and Segment B public policy projects
- Continue to observe lower levels of surplus capacity in real time due to the retirement of over 1000 MW of peaking capability in NYC

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Operations during Hot Weather Periods in 2024

June 18 - 23 Operations

- The Governor's Office issued an extreme heat advisory on Thursday June 13 due to high heat and humidity expected to impact most of the state in the following week
- Peak load of the period occurred on Friday June 21 HB 15 28,245 MW (89.6% of the baseline forecast of 31,541 MW)
  - Peak load was reduced due to activation of utilities' demand response programs
- Y50 Dunwoodie-Shore Rd 345 kV tripped out of service on June 17 and would remain out for the remainder of the Summer
- 7040 Chateaguay-Massena 765 kV tripped and was out of service ~June 18 22:00- June 19 11:00
- NYISO issued a supplemental resource evaluation call (SRE) for Danskammer 4 and Ravenswood 2 on June 19 due to an increase in load forecasts after the Day-Ahead Market (DAM) run and DAM interchange schedule uncertainty for statewide capacity
- NYISO initiated in-day activation of EDRP and SCR resources and called external capacity resources for Zone K due to capacity concerns as a result of interchange uncertainty on June 20

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July 8 – 10 Operations

- Peak load of the period and summer occurred on Monday July 8 HB17- 28,990 MW (91.9% of the baseline forecast of 31,541 MW)
  - Peak load was reduced due to activation of utility demand response programs
- NYISO issued a SRE for Oswego 6 on July 9 due to generator derates and an increase in load forecasts after the DAM run for statewide capacity

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July 15 – 17 Operations

- **Peak load of the period occurred on Monday July 15 HB17- 28,669 MW (90.9% of the baseline forecast of 31,541 MW)**
  - Peak load was reduced due to activation of NYISO SCR/EDRP programs on July 15 and 16 in all zones 15:00-20:00 as well as utility demand response programs
  - Scarcity pricing triggered in 12 real time intervals on July 15 and 11 intervals on July 16
- **On July 16, severe storms including 10 confirmed tornadoes occurred as the remnants of Hurricane Beryl passed though the state. Several trip and reclose events occurred on the 115 kV system and three trip and lock out events occurred on the 230 & 115 kV system during the storms**
  - 7/16 NYISO issued a SRE for Ravenswood 1 & Oswego 5 due to generator derates, an increase in load forecasts after the DAM run and DAM interchange schedule uncertainty for statewide capacity

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August 1 - 2 Operations

- **Peak load of the period occurred on Thursday August 1 HB17- 28,444 MW (90.2% of the baseline forecast of 31,541 MW)**
  - Peak load was reduced due to activation of NYISO SCR/EDRP programs on August 1 in all zones 15:00-20:00 as well as utility demand response programs
  - Scarcity pricing triggered in 20 real time intervals on August 1

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Summer 2024 Hot Weather Operations

(Applicable to prior periods and the entire season)

- Operations participated in regional coordination and NYCA Transmission Owner conference calls
- Coordinated with Transmission and Generation Owners to restore out of service equipment to support peak loads
- Transmission Owners activated utility (retail) demand response programs
- NYISO did not initiate emergency actions such as emergency purchases or statewide voltage reduction
- Natural Gas Pipeline and LDC Operational Flow Orders (OFOs) were observed during high load periods

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Summer Weather & Loads

Summer Weather & Loads

- **Daily mean temperatures were above the 20-year average in May, June and July and below average in August**
  - Highest Temperatures: 95 ºF at NYC - Central Park and 96 ºF at Albany
  - 21 days with highs at or above 90 ºF at NYC - Central Park (average is 16 days/year from 1991 – 2020) (Source: /www.ncdc.noaa.gov)
  - 13 days with highs at or above 90 ºF at Albany (average is 9 days/year from 1991 – 2020) (Source: /www.ncdc.noaa.gov)
- **Seasonal Rainfall Varied (Albany)**
  - August rainfall (8.13 in.) well above normal (3.76 in)
  - May to July below normal rainfall
  - Source: National Weather Service – Albany Office
- **Total net energy (GWh) was above 50/50 projections**
  - May and July were above expected load levels (+2.2%, +3.7%, respectively)
  - June was well above expected load levels (+7.3%)
  - August load levels were lower than forecast (-2.0%)
- **Peak net load was below the Gold Book Baseline projection**
  - Summer 2024 Gold Book Baseline forecast was 31,541 MW
  - Summer 2024 actual peak load was 28,990 MW (July 8th)
    - Summer 2023 actual peak load was 30,206 MW (September 6th)
- **No days with peak loads over 30,000 MW**
  - Loads net of BTM solar and NYISO/TO Demand Response
  - Five days with NYCA peak demands in excess of 28,500 MW (all in July)

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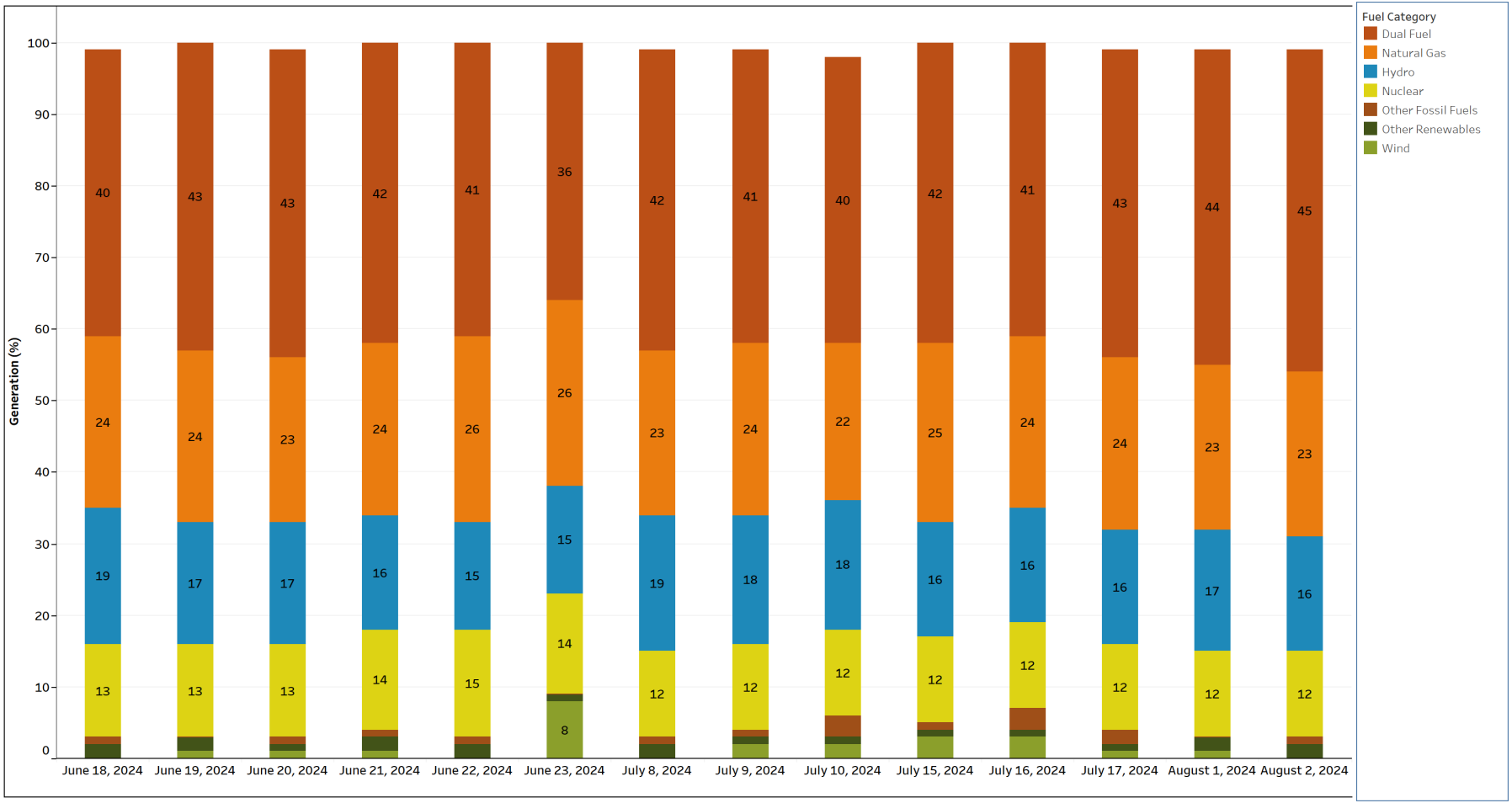
Supply Data

Resource Fuel Mix (%) for Peak Load Hour



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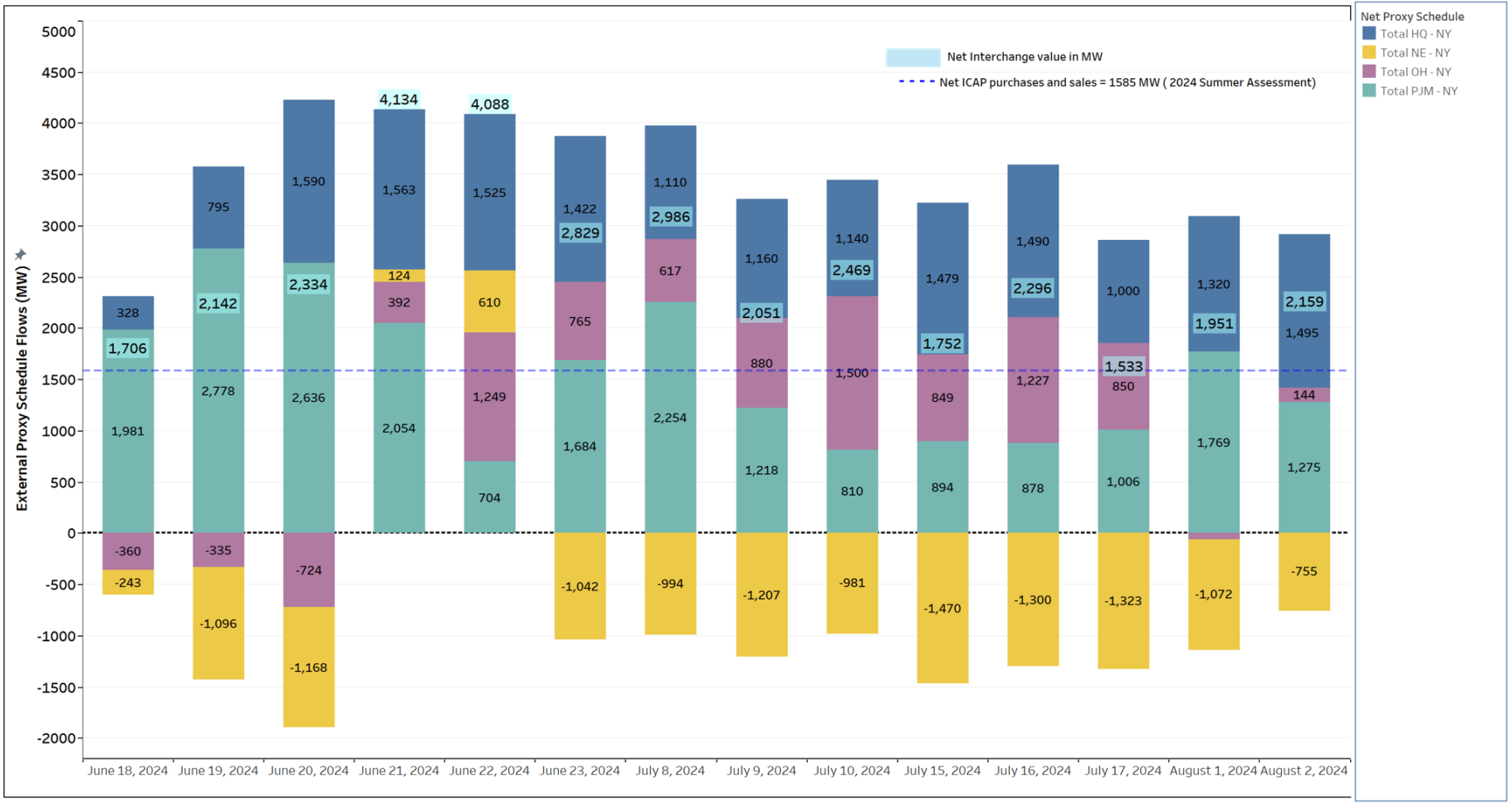
External Proxy Schedules During Peak Load Hour



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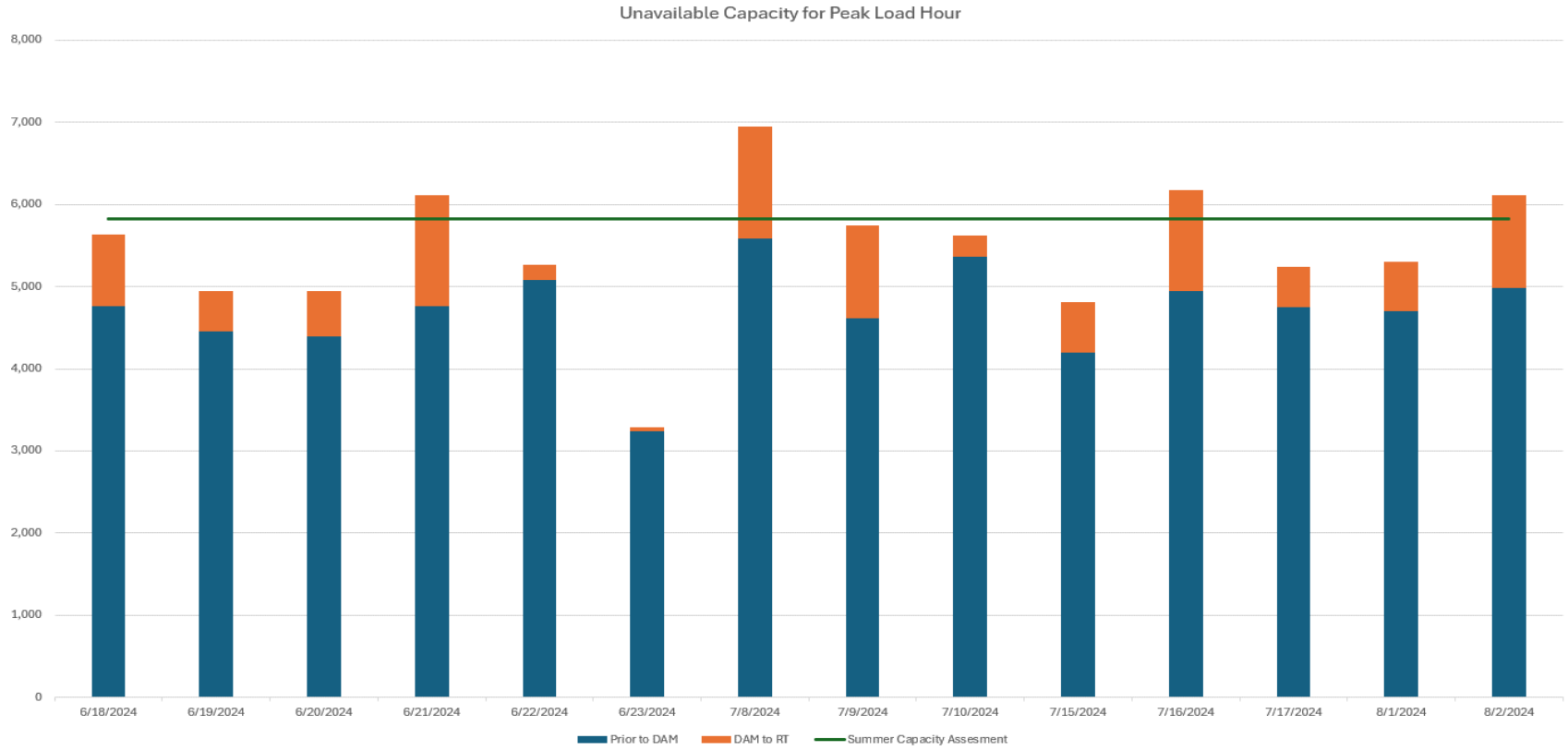

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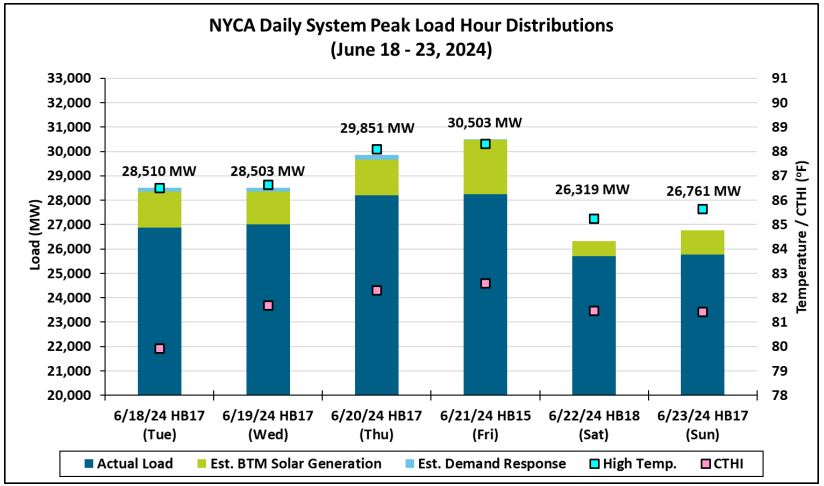
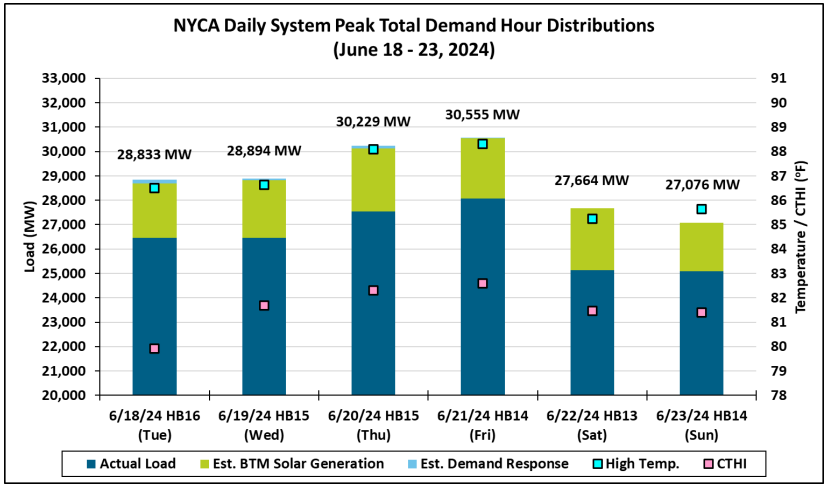
Loads & Peaks

June 18th – 23rd 2024





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

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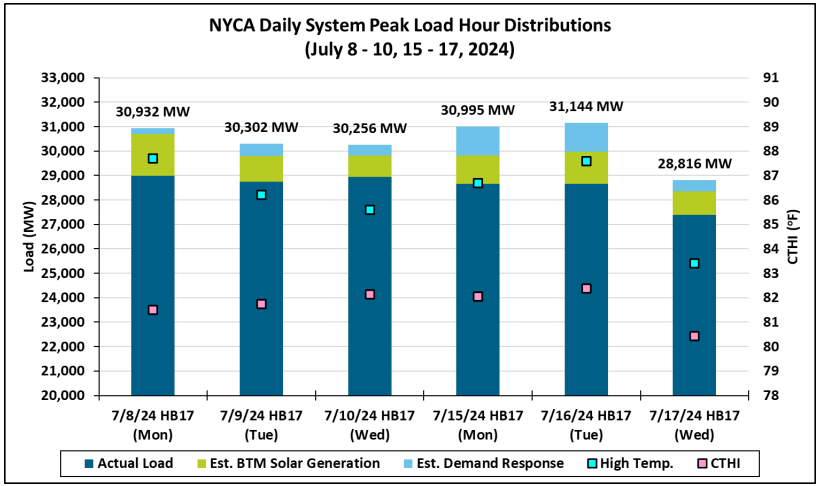
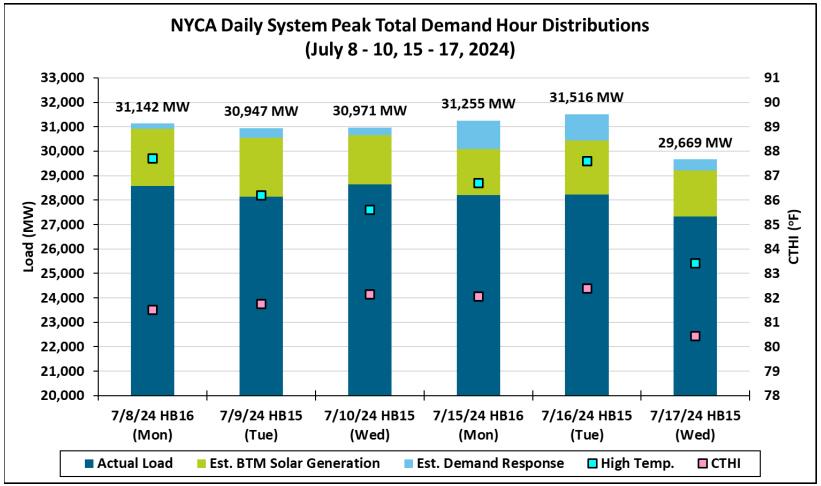
July 2024





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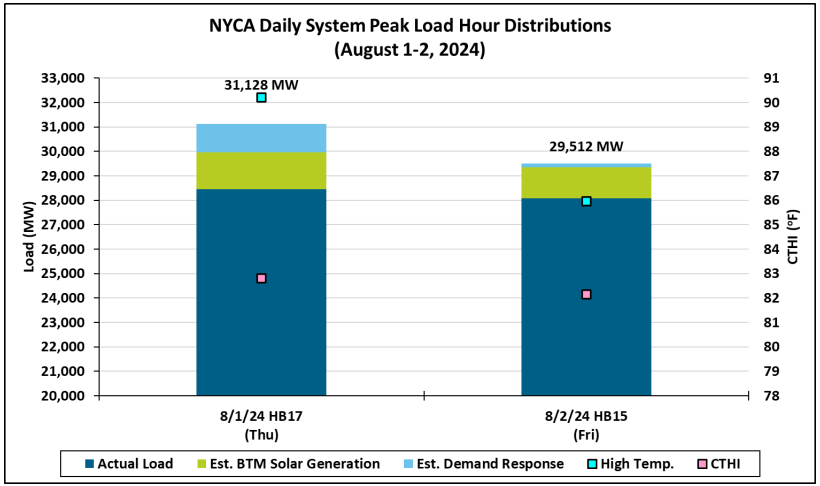
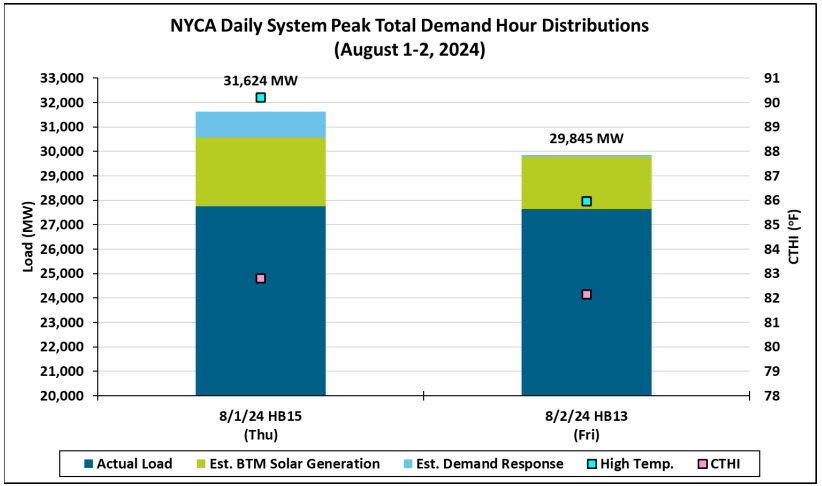
August 1st – 2nd 2024





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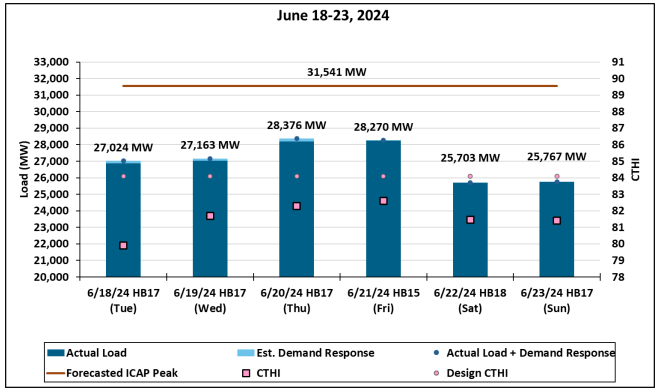
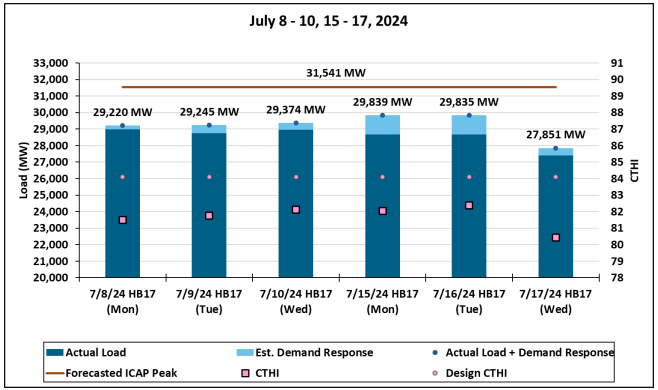
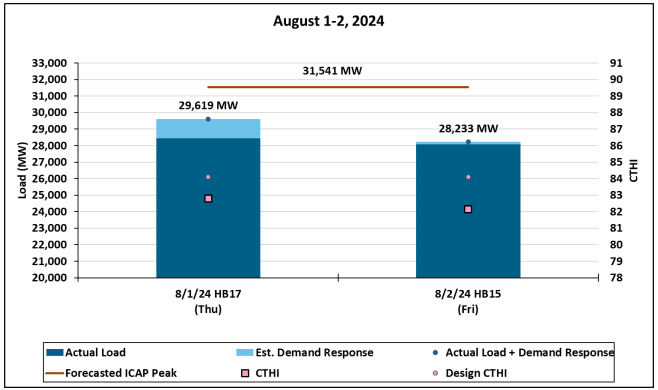
Summer 2024: Forecast and Experience







Retail Demand Response Program Activations

Date	Transimission Owner
6/14/2024	Con Edison
6/18/2024	N.Grid, NYSEG, RG&E
6/19/2024	N.Grid, NYSEG, RG&E
6/20/2024	Central Hudson, Con Edison, N.Grid, NYSEG, O&R, RG&E
6/21/2024	Con Edison, N.Grid, NYSEG
6/22/2024	Con Edison
6/23/2024	Con Edison
7/7/2024	Con Edison
7/8/2024	Con Edison, N.Grid
7/9/2024	Con Edison, N.Grid, NYSEG, RG&E
7/10/2024	Con Edison, N.Grid
7/15/2024	Central Hudson, Con Edison, N.Grid, NYSEG, O&R
7/16/2024	Central Hudson, Con Edison, LIPA~PSEG, N.Grid, NYSEG, O&R
7/17/2024	Con Edison, LIPA~PSEG
7/31/2024	NYSEG
8/1/2024	Con Edison, N.Grid, NYSEG, O&R, RG&E
8/2/2024	Con Edison, N.Grid, NYSEG
8/3/2024	Con Edison

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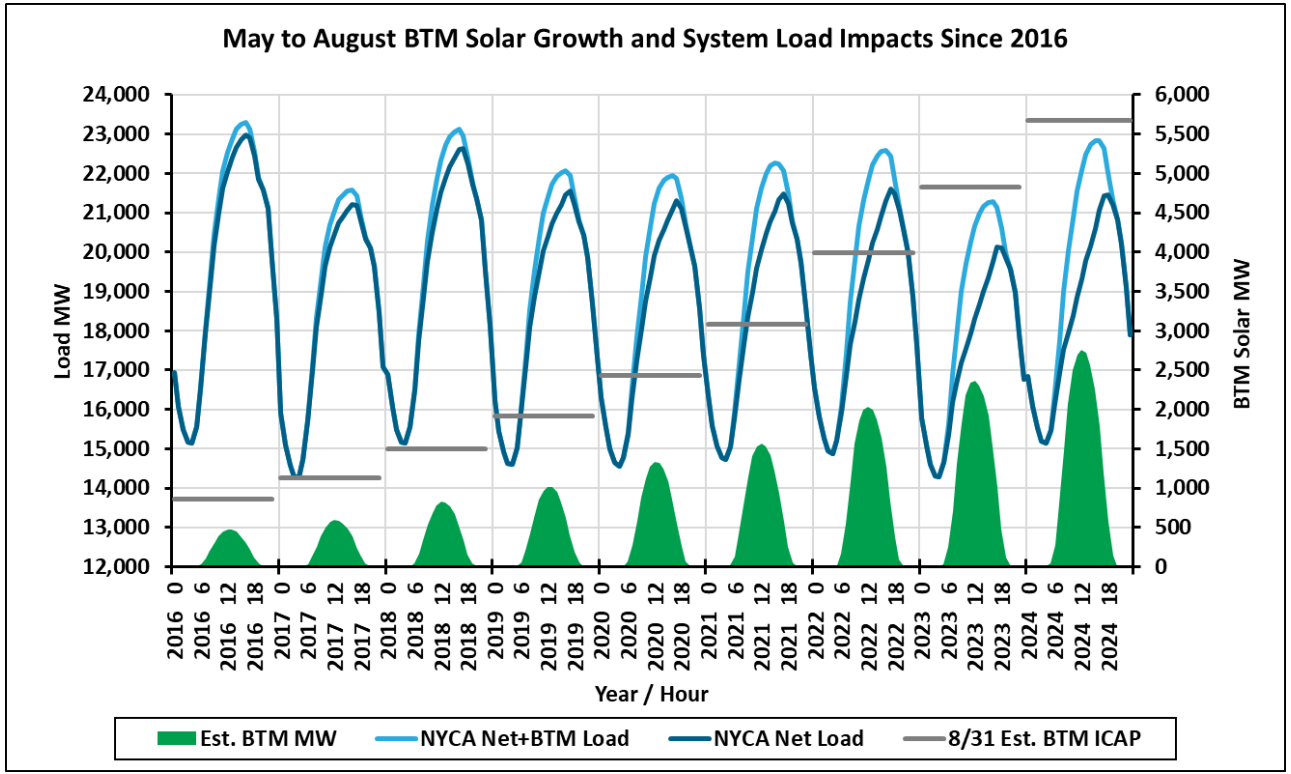
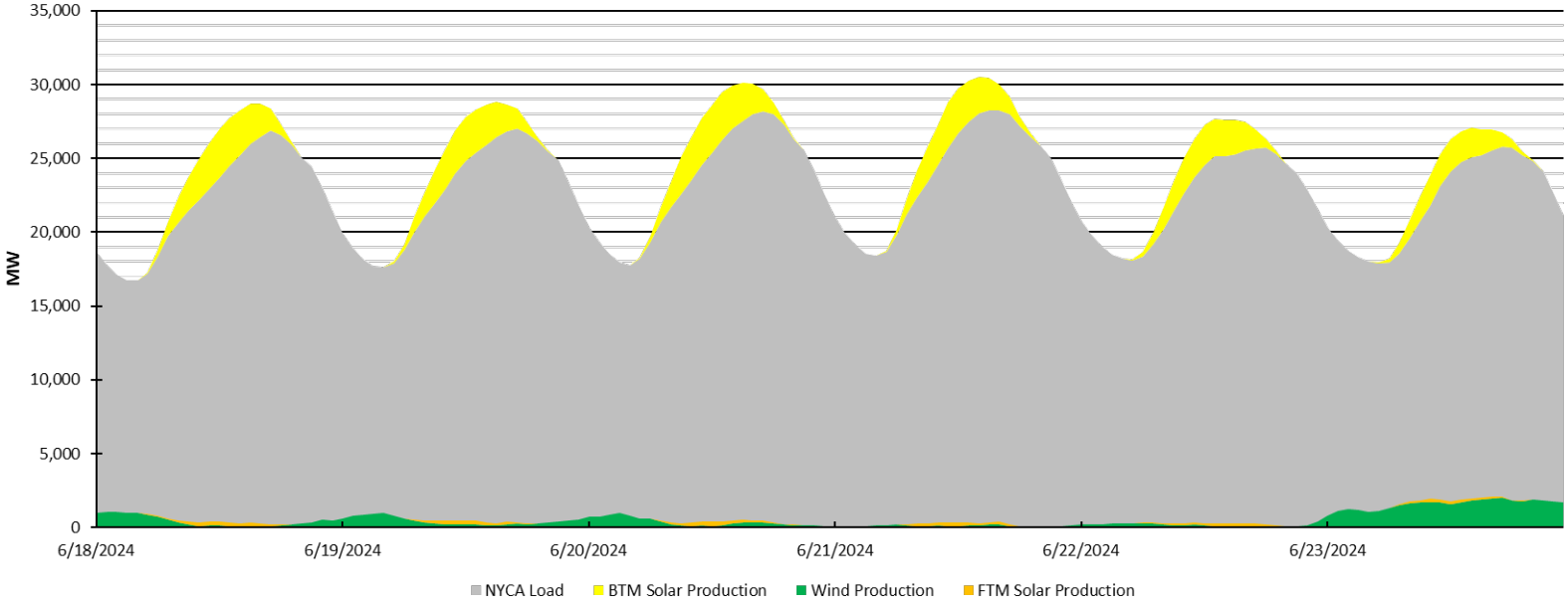
Intermittent Production



Hourly Wind & Solar Production 6/18 - 6/23



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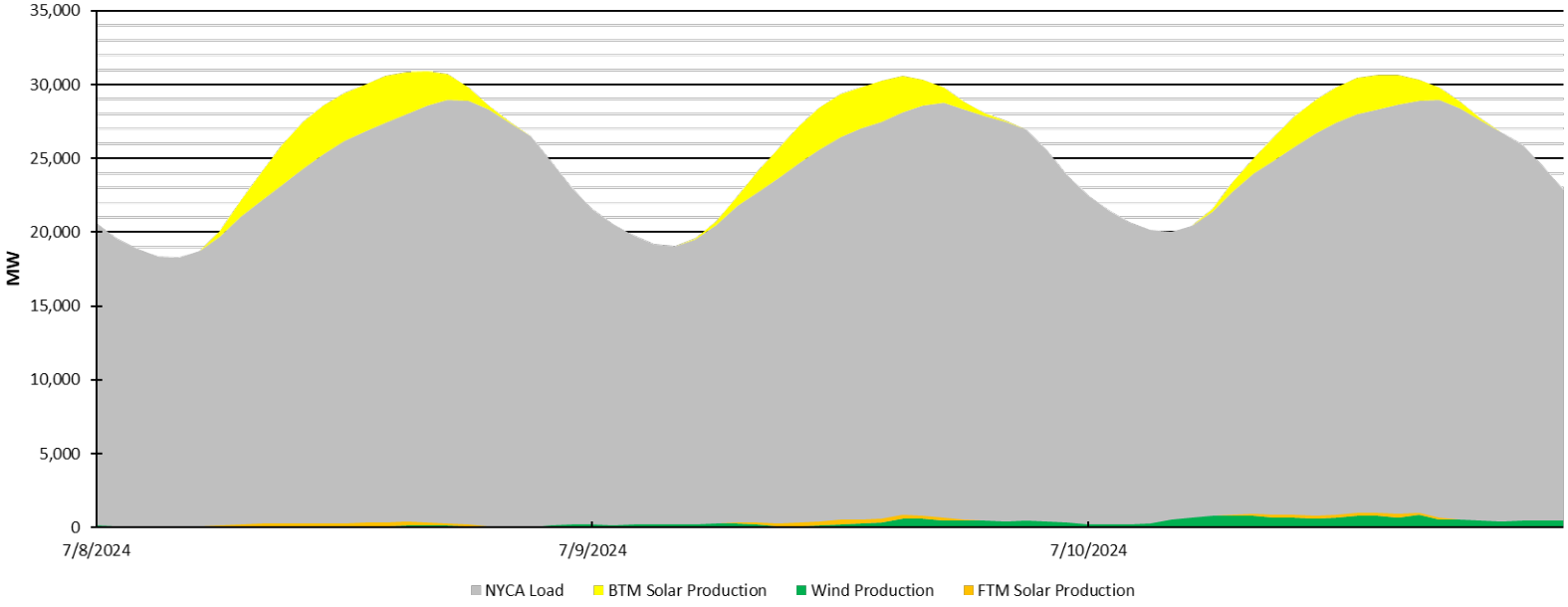
Hourly Wind & Solar Production 7/8 - 7/10



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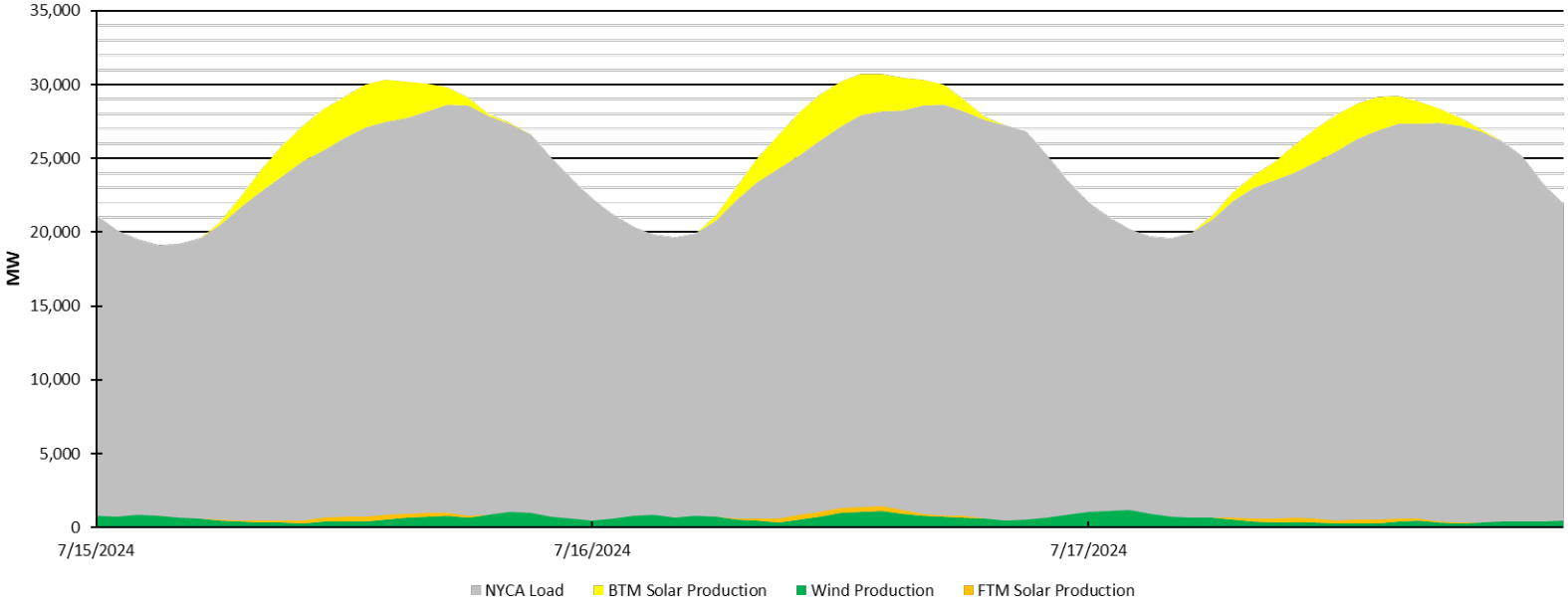
Hourly Wind & Solar Production 7/15 - 7/17



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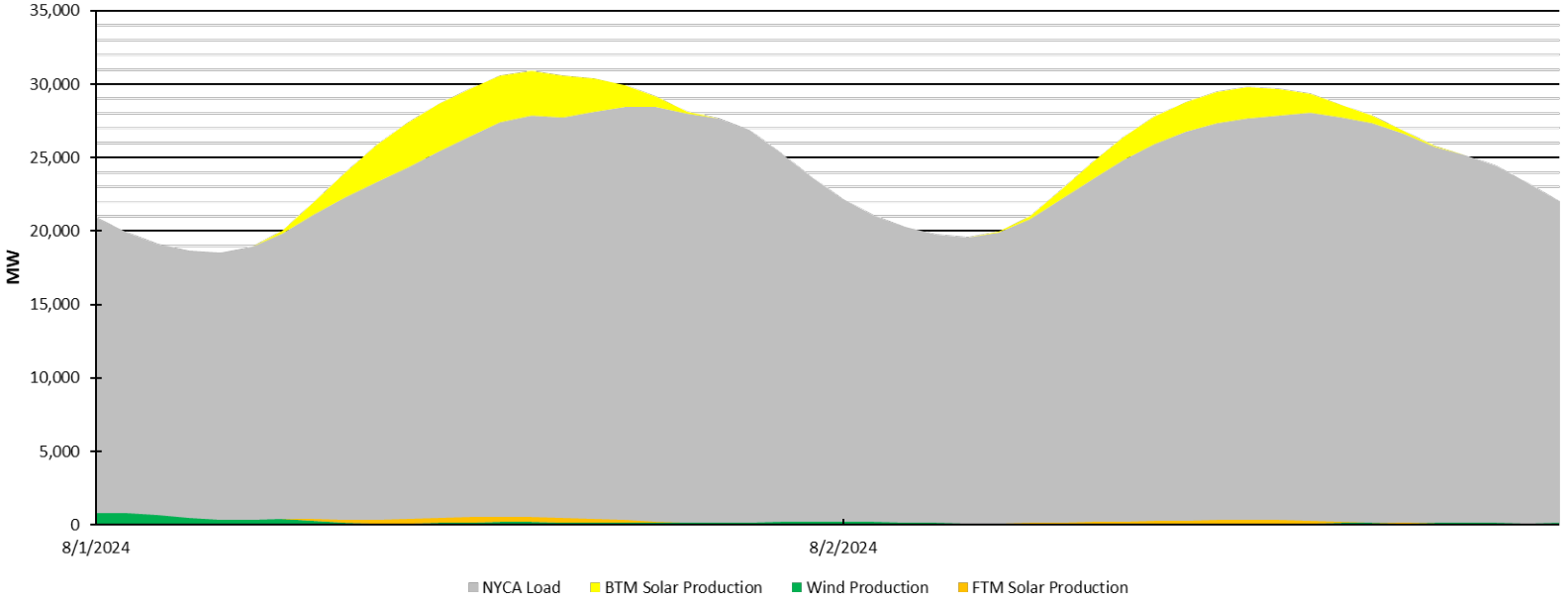
Hourly Wind & Solar Production 8/1 - 8/2



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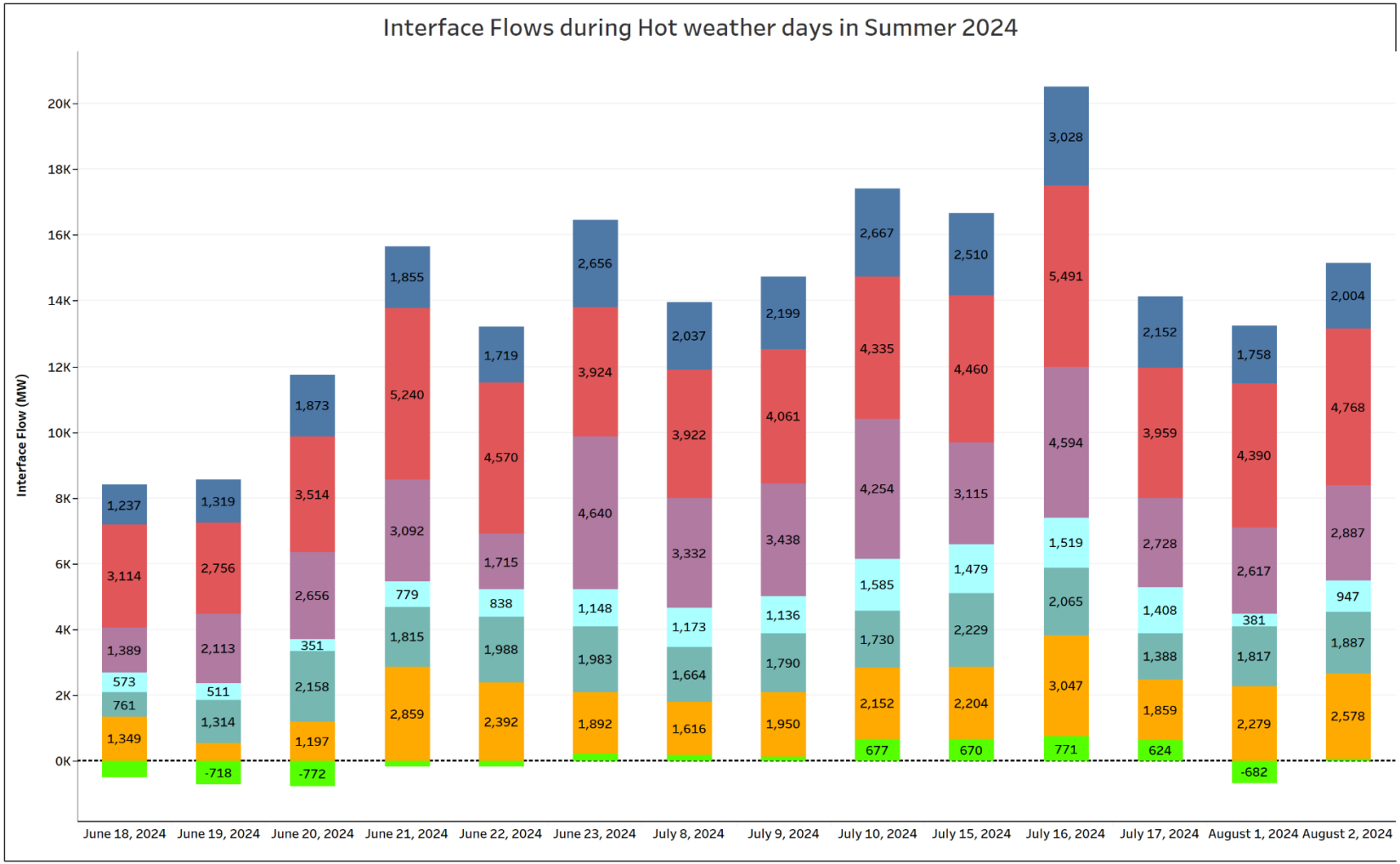
Questions?

Appendix



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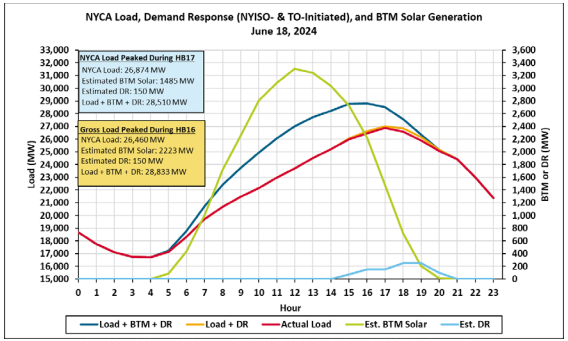
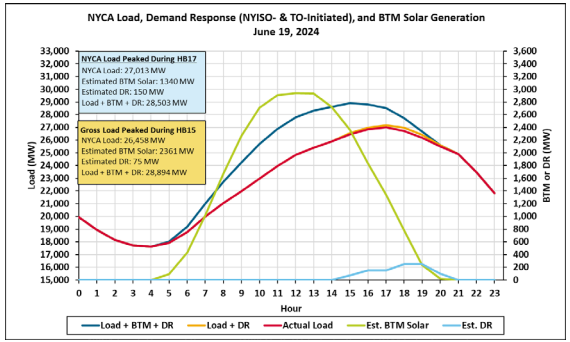
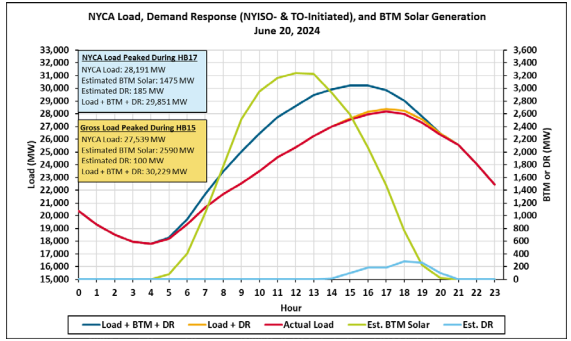
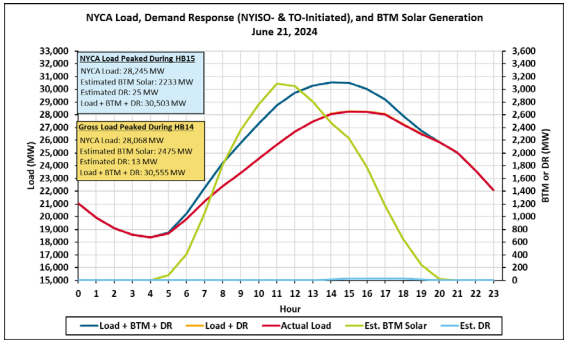
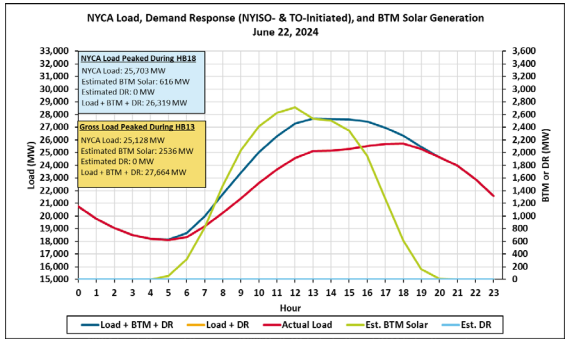
June 18th – 23rd 2024

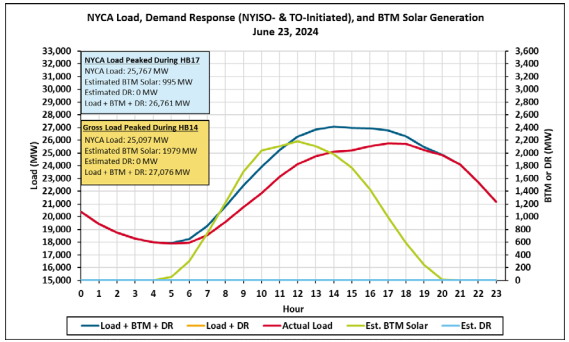












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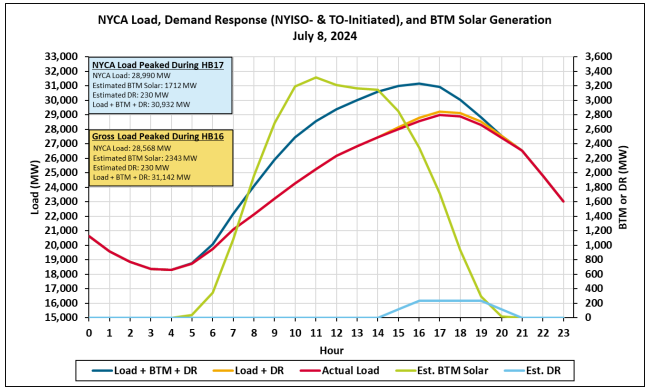
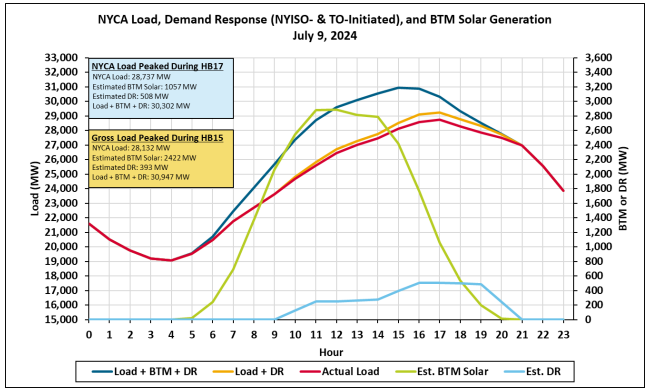
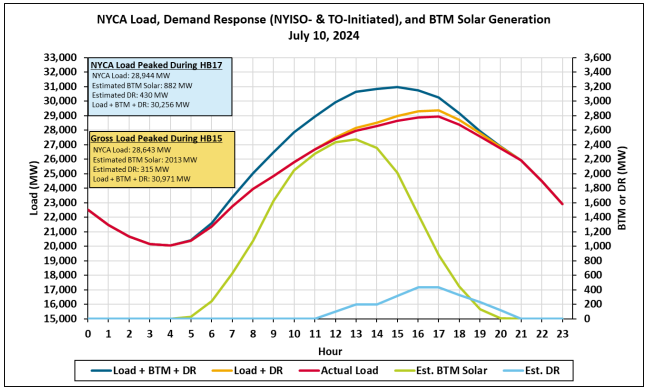
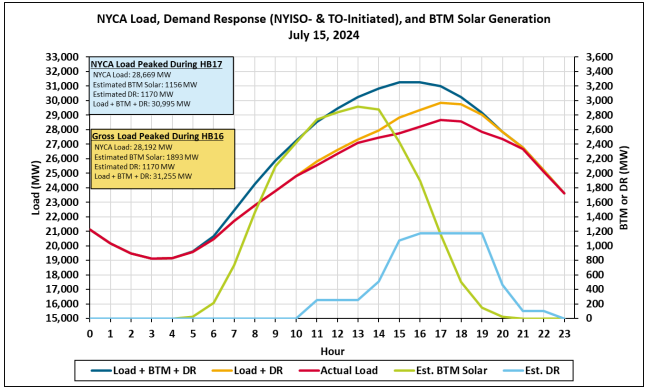
July 8th – 10th 2024

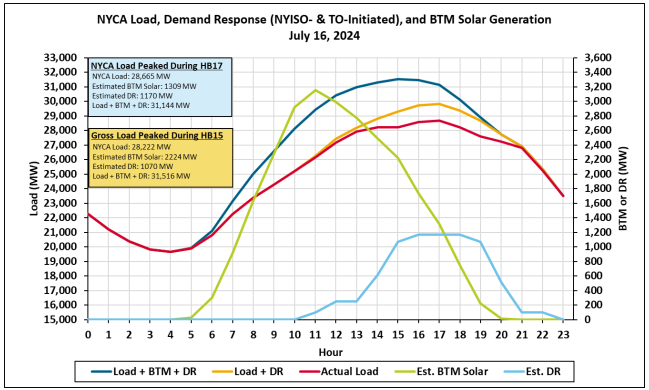


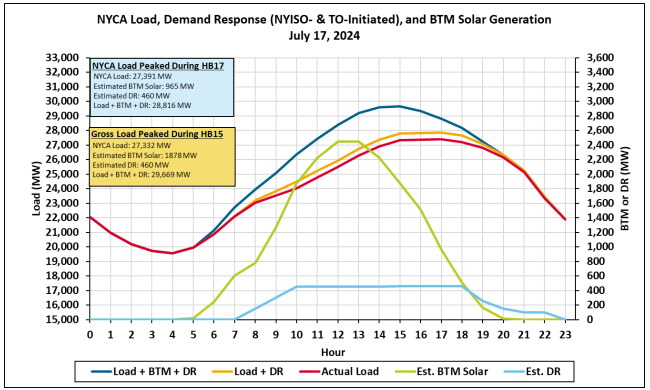




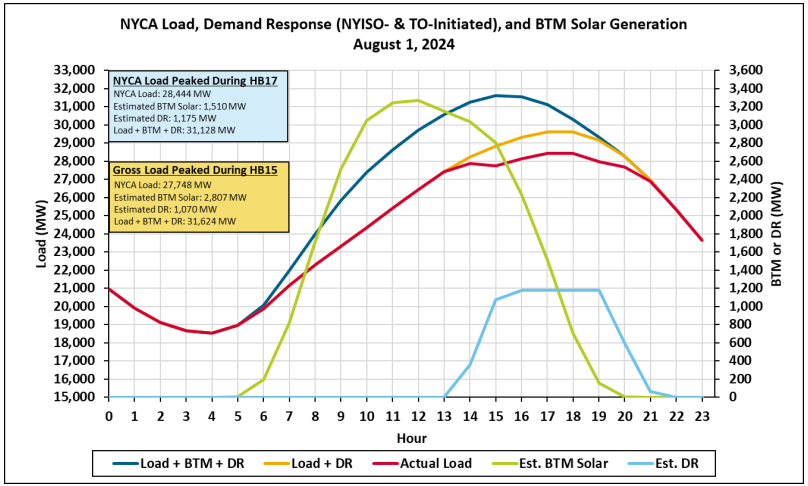
July 15th – 17th 2024

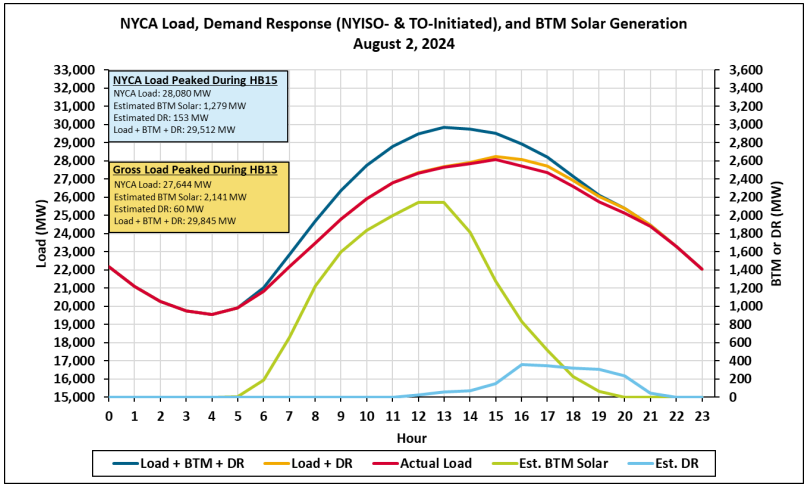


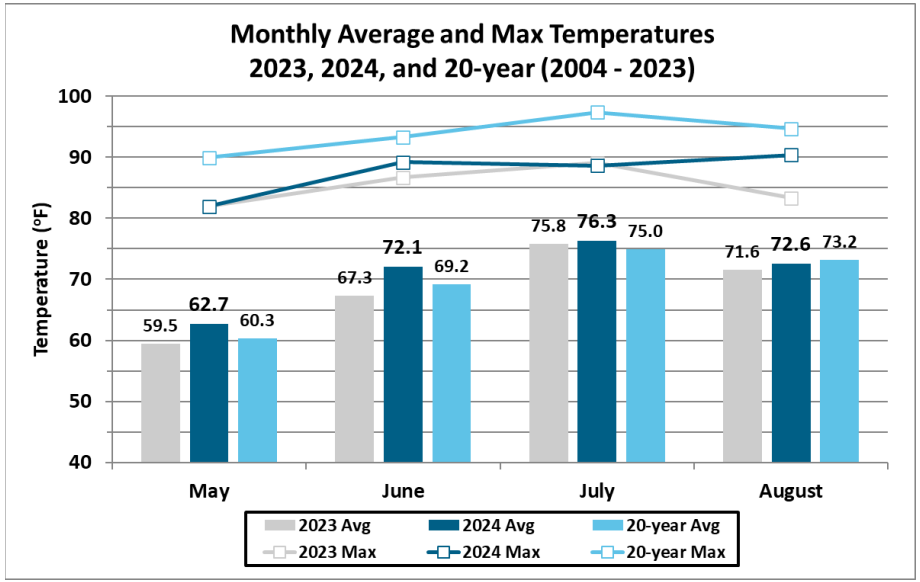


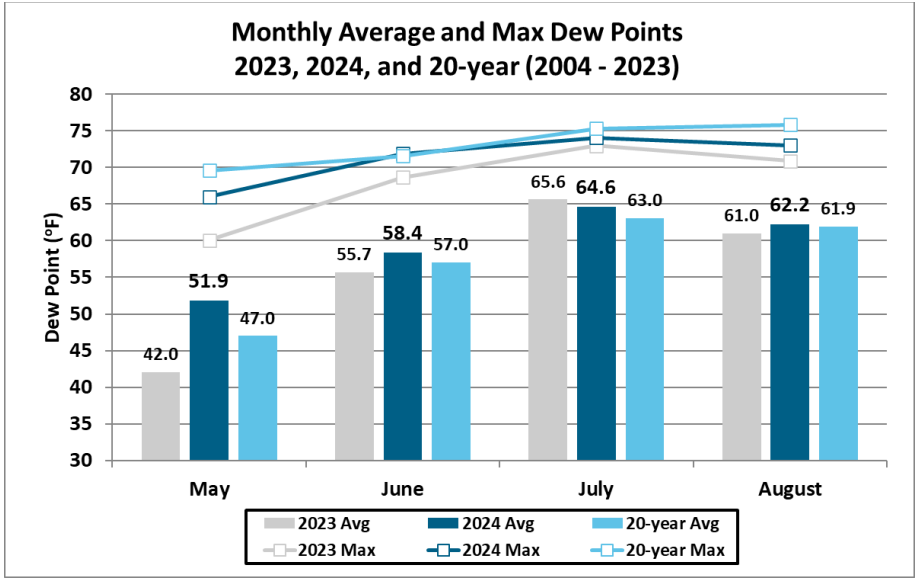


August 1st – 2nd 2024









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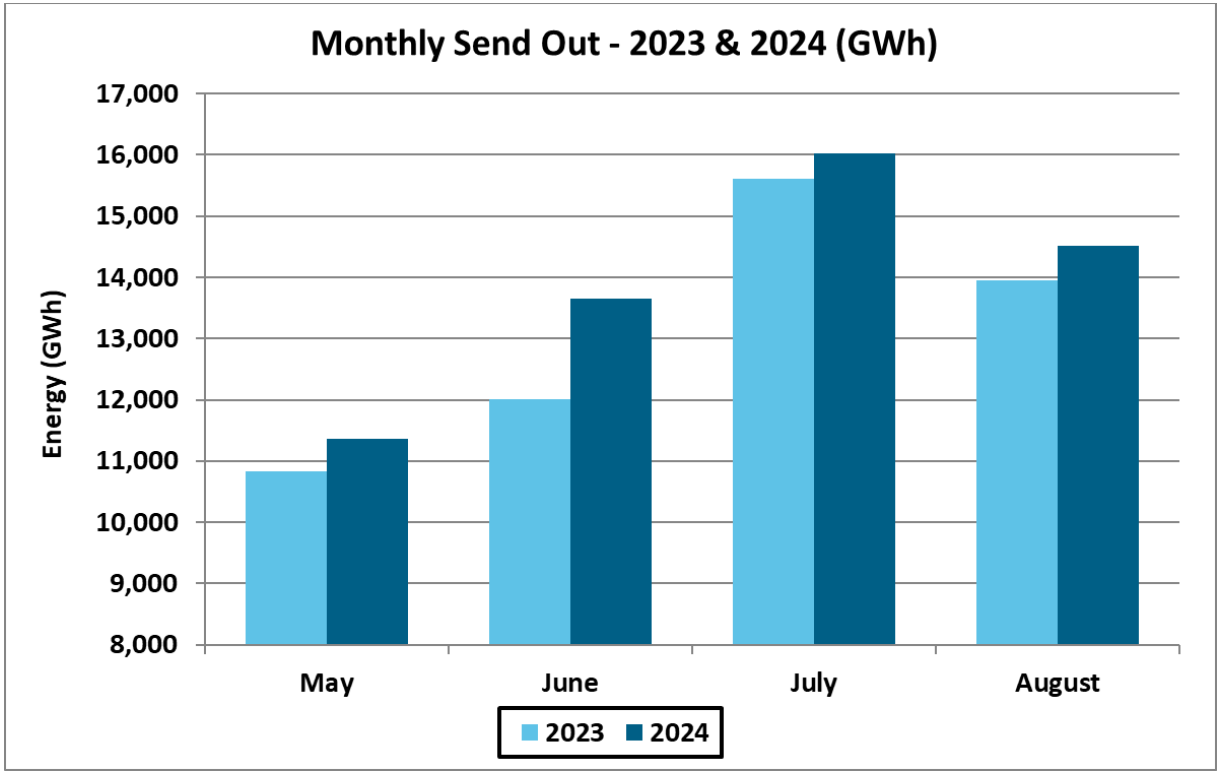
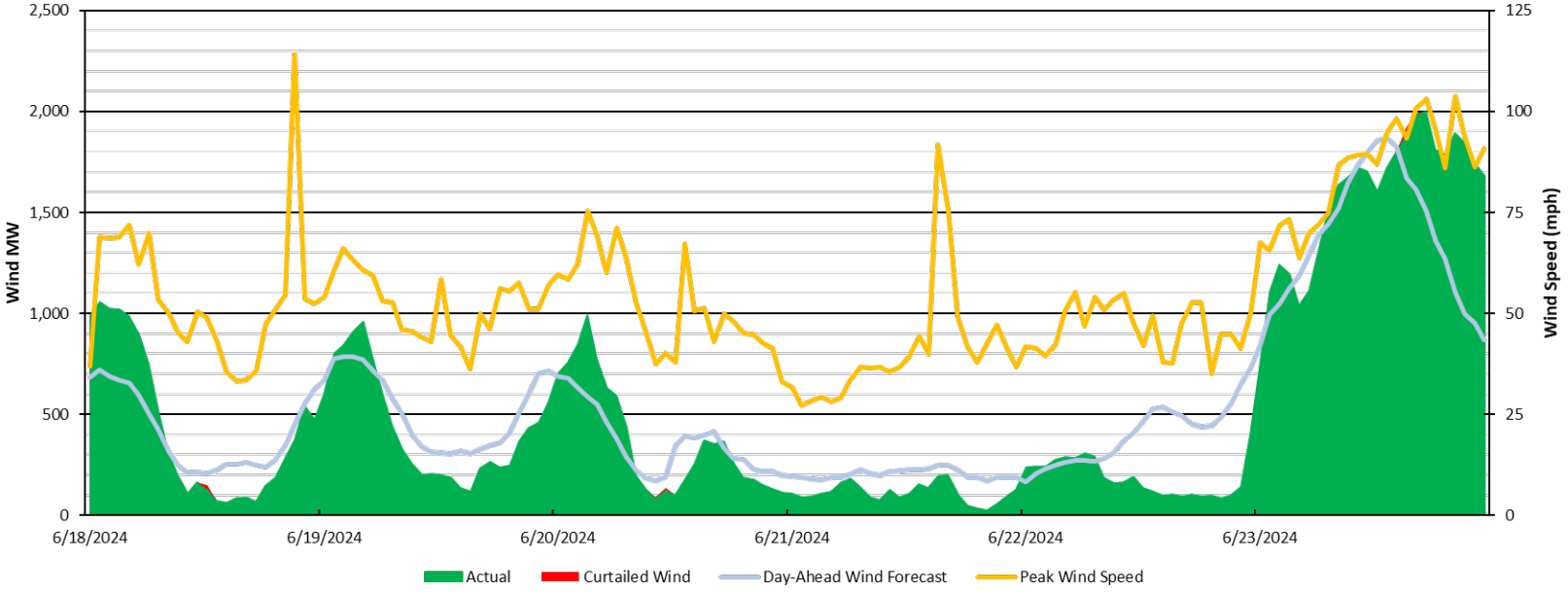


NYCA Wind Profile 6/18 - 6/23



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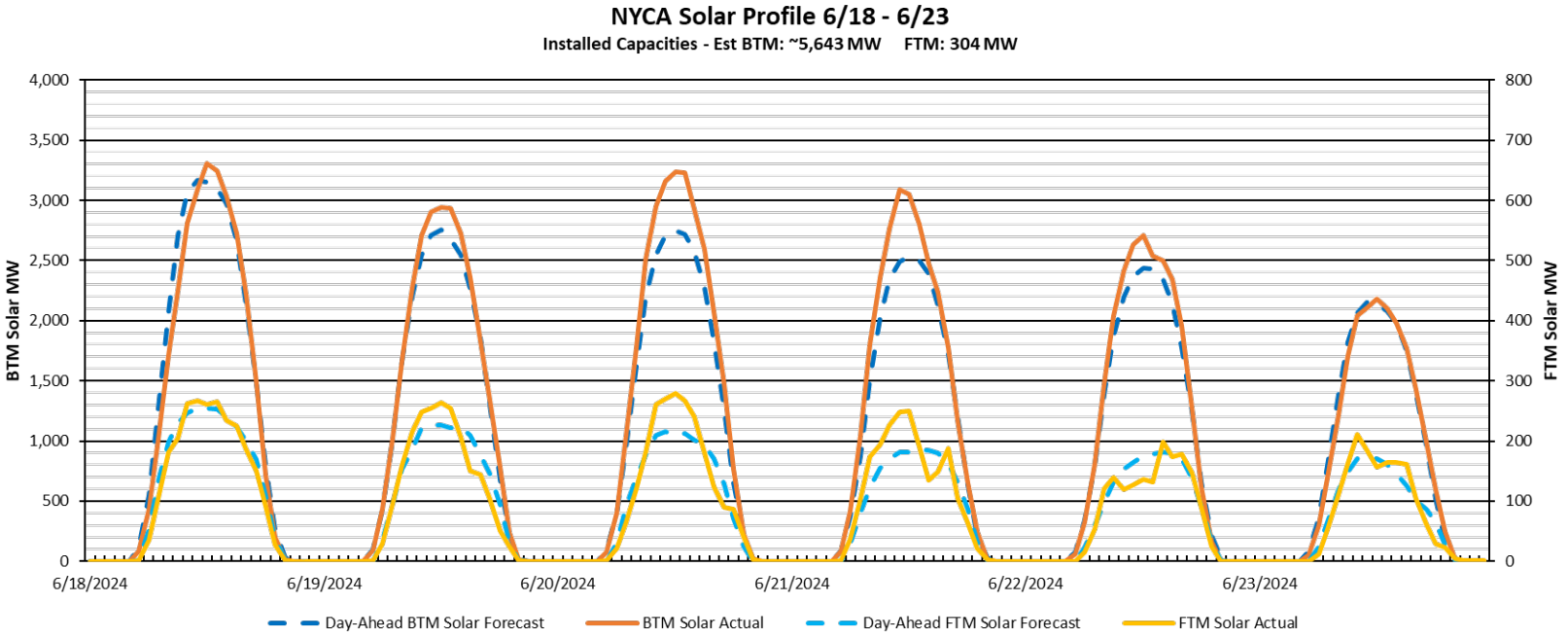

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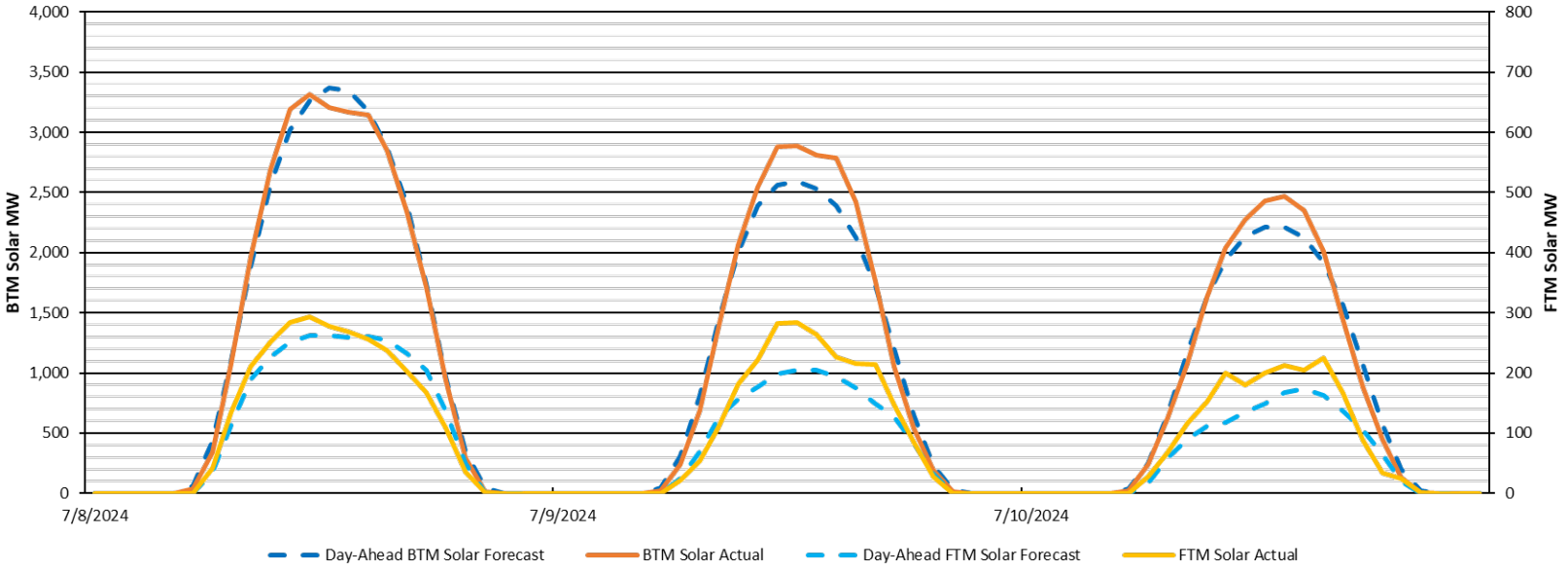
NYCA Solar Profile 7/8 - 7/10

Installed Capacities - Est BTM: ~5,709 MW FTM: 394 MW



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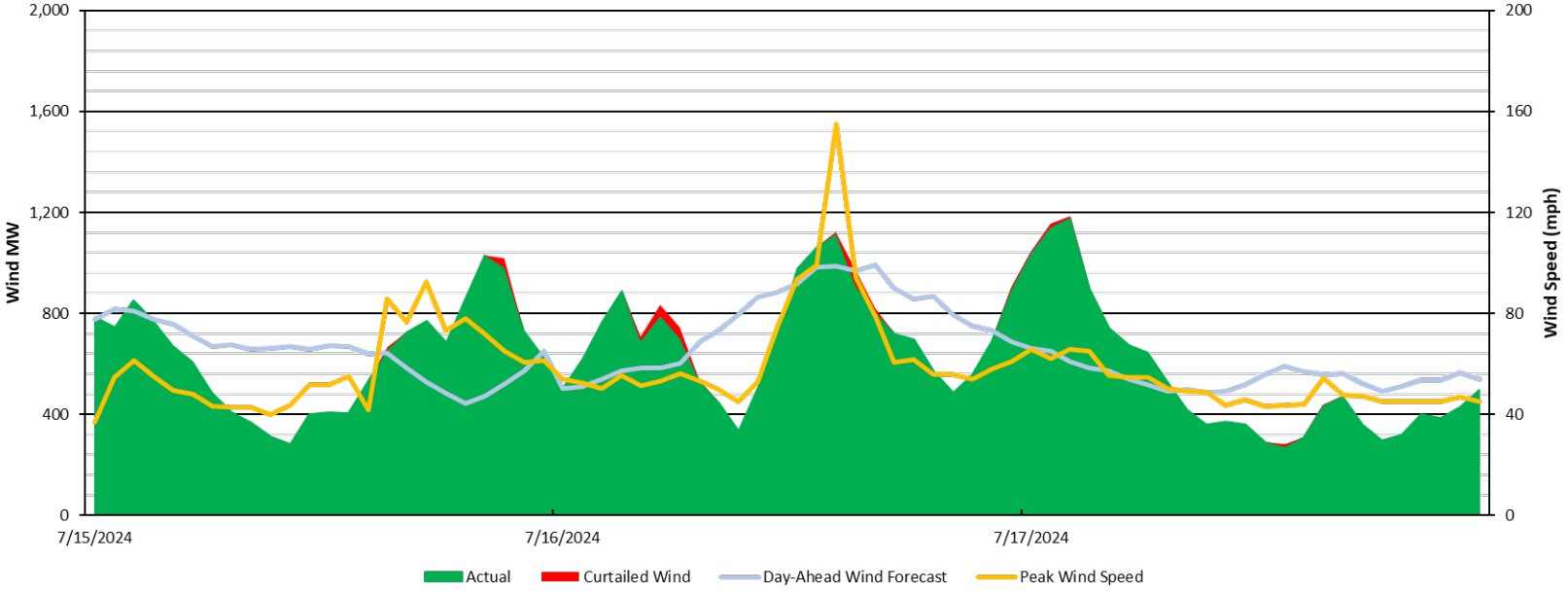
NYCA Wind Profile 7/15 - 7/17



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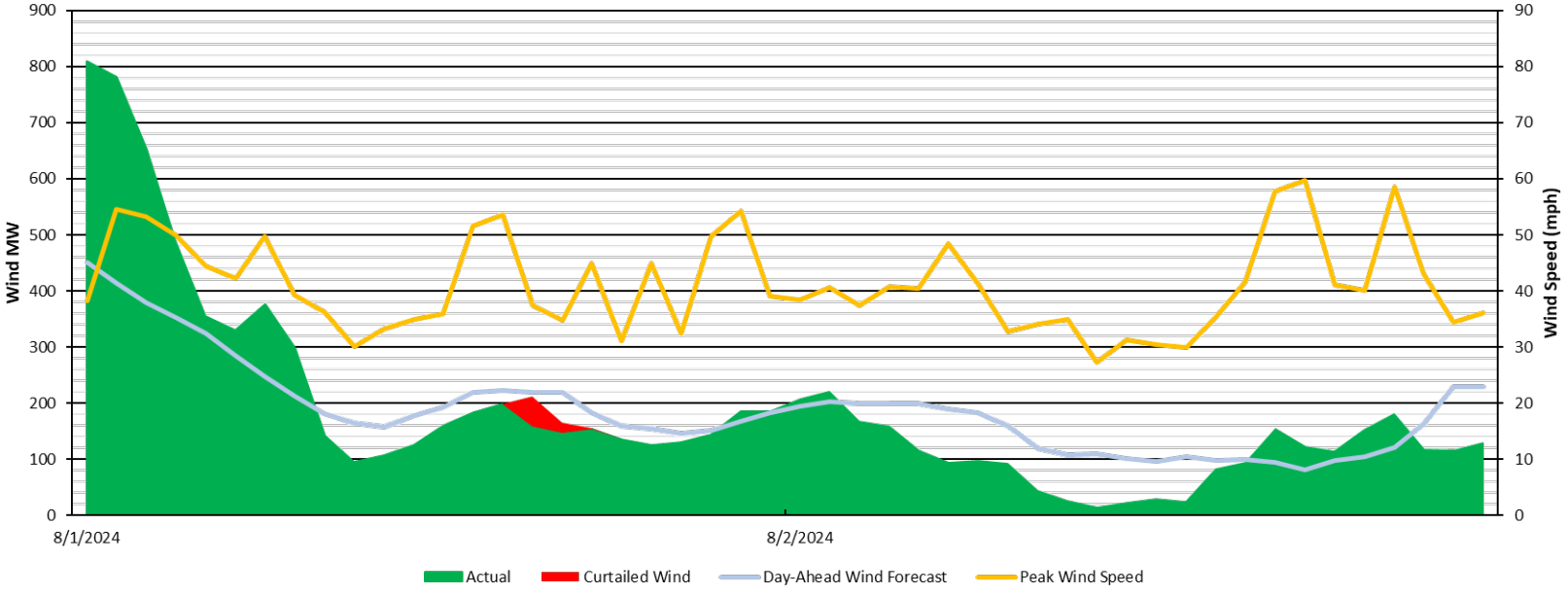
NYCA Wind Profile 8/1 - 8/2



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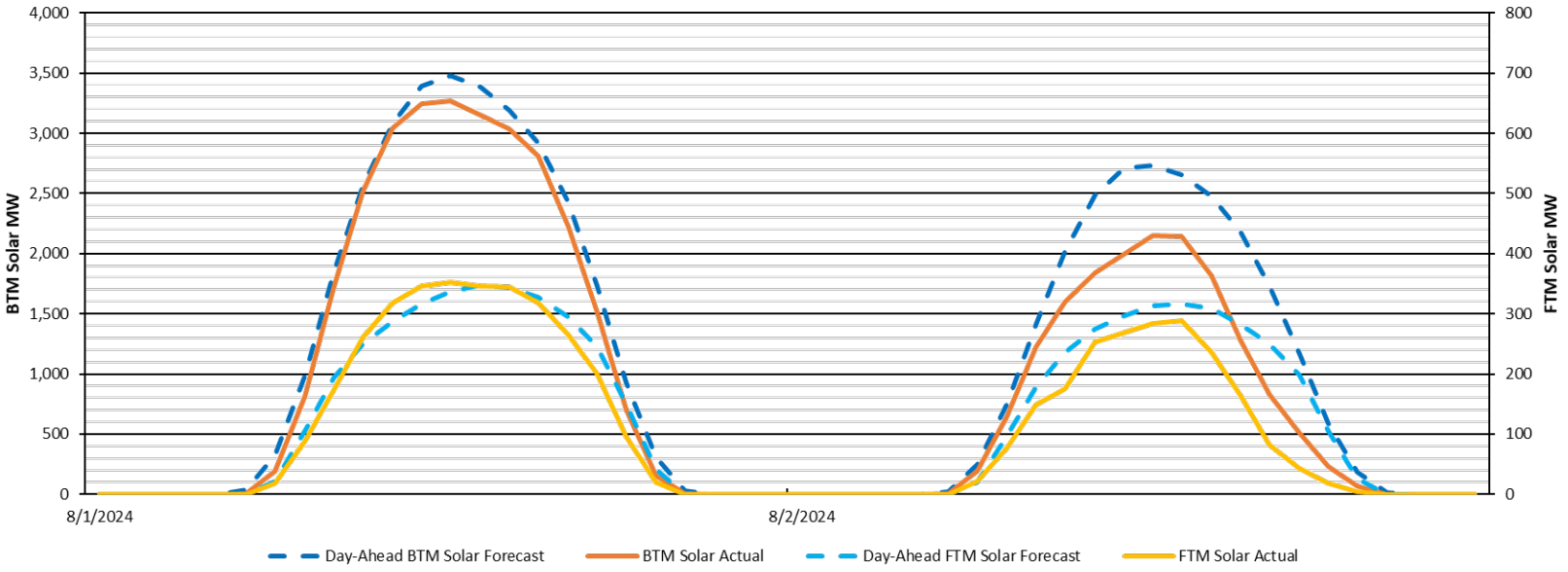

New York ISO

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

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