Solar-Adjusted Load Shapes for the 2024 IRM Study

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Summary

- As a result of the LFU Phase 2 study, the historical input load shapes used in the IRM study were updated to 2013 (bins 1&2), 2018 (bins 3&4), and 2017 (bins 5 to 7)

- In addition, these historical load shapes are adjusted to reflect the projected behind-the-meter solar capacity level of the study year

- The 2013, 2017, and 2018 historical load shapes have been calibrated to reflect the projected 2024 BTM solar capacity level (for the 2023 IRM study, they reflected the projected 2023 level)

New York ISO

BTM Solar Adjustment

- The NYISO has developed a time series of estimated actual behind-the-meter (BTM) solar generation for the 2012 through 2022 period

- Pre-2017 estimated actuals are modeled values based on historical Global Horizontal Irradiance (GHI) and solar capacity level data

- 2017 through current year estimated actuals are based on sampled inverter data

- Adjusted historical loads were determined by scaling historical estimated actual BTM Solar data to reach the projected 2024 solar capacity level:

$$\text{Load}_{Adjusted} = \text{Load}_{Net} + \text{BTM\_Solar}_{Y, D, H} - \text{BTM\_Solar}_{Y, D, H} * (\text{BTM\_Capacity}_{2024} / \text{BTM\_Capacity}_{Y})$$

Where: Y=Year (2013, 2017, or 2018), D=Date, H=Hour; and BTM_Solar is a positive value reflecting estimated actual generation

New York ISO

2023 and 2024 Solar Adjustments
*Assumed July Capacity (MW DC) and Maximum Impacts on Peak Day (MW AC)*
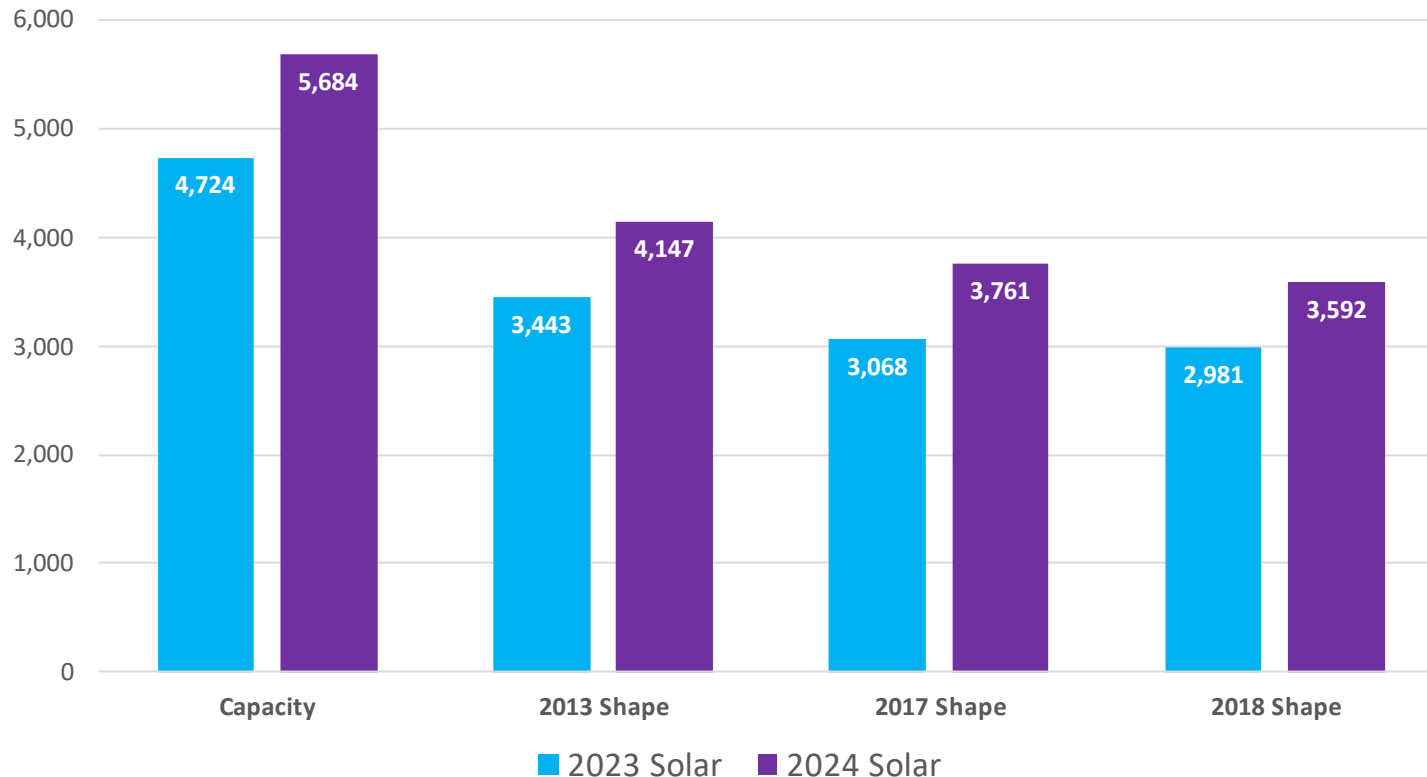
- These bars show the projected BTM solar capacity and maximum generation on the NYCA peak day in the IRM input load shapes

- July capacity is the MW DC forecast used as an input to scale the solar adjustment

- Historical year shape impacts show the resulting projected maximum solar generation on the peak load day (in MW AC)

- 2013 load shape is used in LFU bins 1&2

- 2018 load shape is used in LFU bins 3&4

- 2017 load shape is used in LFU bins 4 to 7

2013 Peak Week Loadshapes (MW)
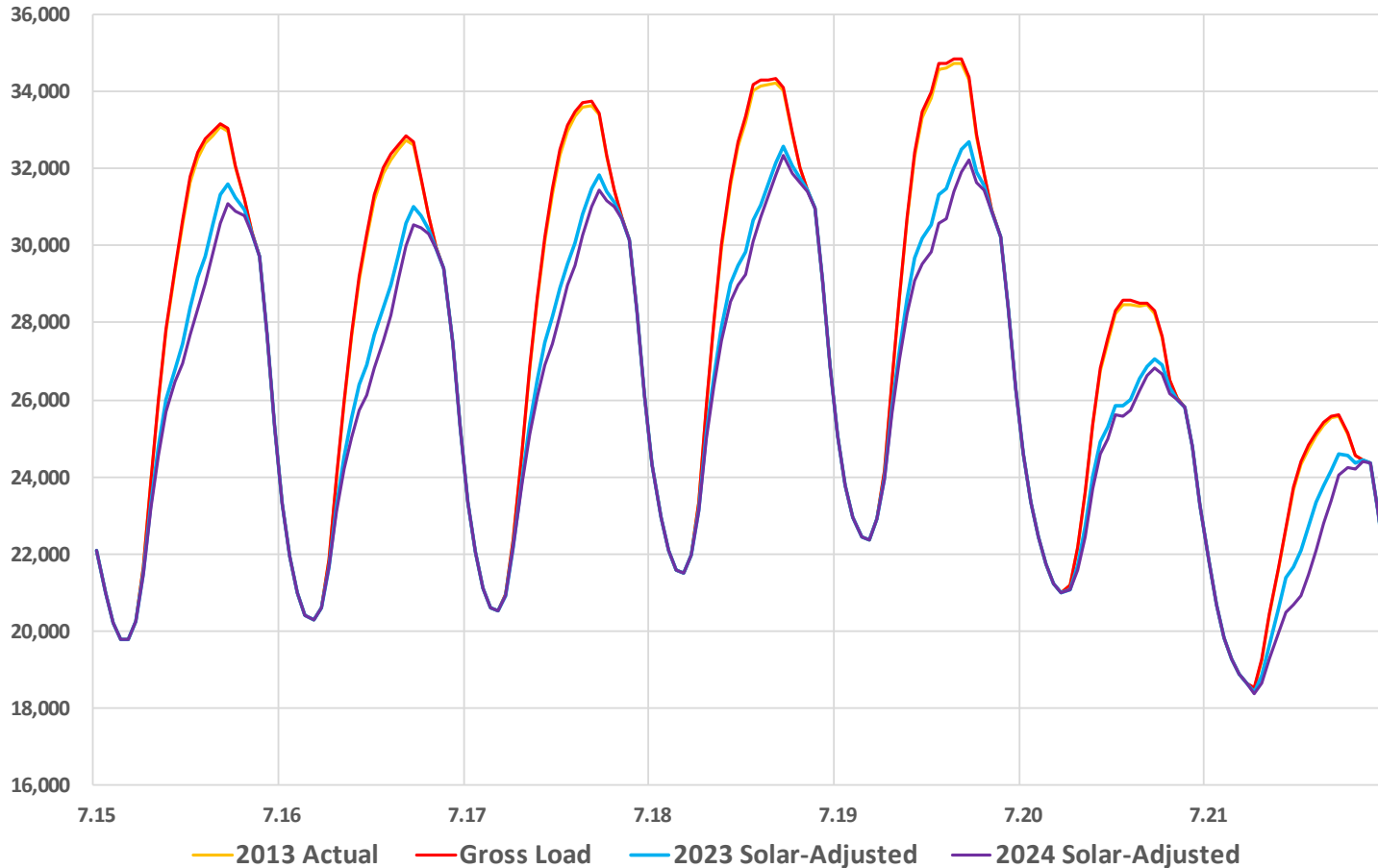
- All load shapes include demand response impacts added back

- 2023 solar-adjusted shape was the input shape for the 2023 IRM study

- 2024 solar-adjusted shape is the input shape for the 2024 IRM study

- Move from blue to purple line reflects the updated input load shape solar calibration made for the 2024 IRM study

- 2013 load shape is used in LFU bins 1&2

- The input shape will be scaled to the IRM forecast, with bin multipliers applied in MARS

Legend: 2013 Actual — Gross Load — 2023 Solar-Adjusted — 2024 Solar-Adjusted

New York ISO

NYCA Peak Date Loadshapes (MW)
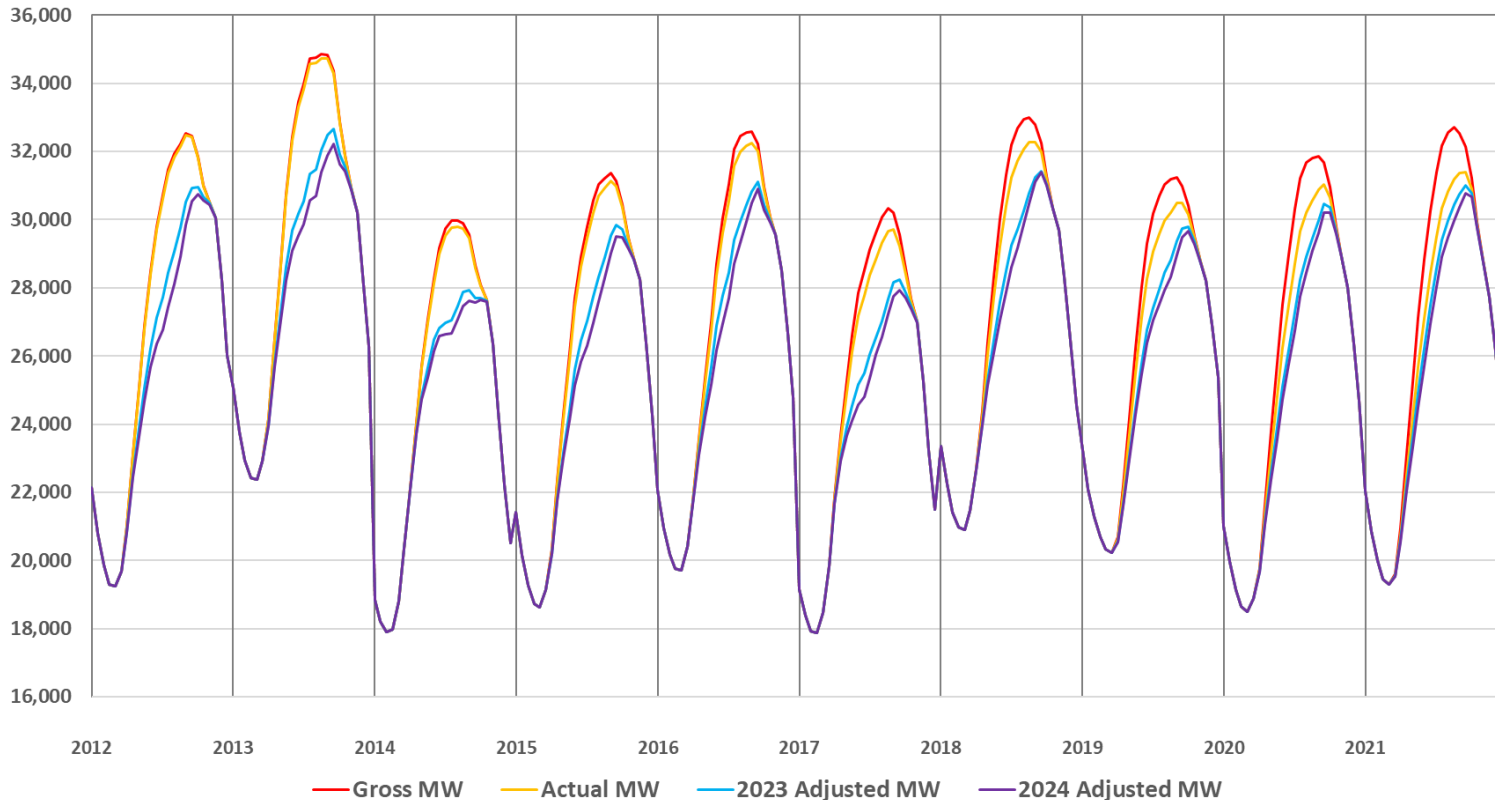
- All load shapes include demand response impacts added back

- Move from blue to purple line reflects the updated input load shape solar calibration made for the 2024 IRM study

- 2013 load shape is used in LFU bins 1&2

- 2018 load shape is used in LFU bins 3&4

- 2017 load shape is used in LFU bins 4 to 7

Legend: Gross MW, Actual MW, 2023 Adjusted MW, 2024 Adjusted MW

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Questions?

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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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