

# 2022 Gross Peak Forecast

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Demand Forecasting & Analysis

**Load Forecasting Task Force**

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# Agenda

- **Background**
- **Forecast Methodology**
- **Gross Peak Forecast Summary**
- **Supporting Graphs**

# Background

- The gross peak forecast was developed for use in the 2022 RNA resource adequacy simulations
- 2023 to 2032 forecast horizon
- The forecast reflects the projected maximum gross demand (measured load plus BTM solar generation) for each summer
- Provides maximum demand targets for GE MARS modeling, as BTM solar is modeled randomly as a resource in the RNA
- Winter gross peak forecast matches the Gold Book net peak forecast. The gross and net peak hours are the same as the projected gross peak demand hour occurs after sunset over the winter peak

# Forecast Methodology

- **Generate average NYCA peak day net load, BTM solar, and gross load shapes using peak day data from 2012 through 2021**
  - BTM solar values are based on historical sampled inverter data and solar capacity schedule
- **Calibrate these shapes to reflect 2023 conditions, including 2023 forecast net peak load and the projected 2023 solar capacity level**
- **Produce annual peak day solar profiles for 2024 through 2032 reflecting increasing capacity levels from the 2022 Gold Book**
- **Calculate 2024-2032 projected peak day net and gross load shapes**
  - Net load peaks reflect 2022 Gold Book peak forecast
  - The divergence in the net and gross shapes increases over time as BTM solar penetration increases
- **The Gross Peak forecast is the maximum value from the gross load shape**
  - NYCA forecast is apportioned to the zones via net peak forecast levels and shares of BTM solar capacity
  - High load scenario gross peak forecast is calculated using the gross to net peak ratios from the baseline, applied to the high load scenario net peak forecast, and scaled down to reflect the lower BTM solar capacity

# Gross Peak Forecast Summary

# Baseline Coincident Peak Forecast

**Table I-3a-G: Gross Baseline Summer Coincident Peak Demand Forecast**

Reflects Impacts of Energy Saving Programs & Behind-the-Meter Generation

## Coincident Summer Peak Demand by Zone - MW

Gross Forecast (Load plus BTM Solar Generation)

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2023	2,920	2,216	3,009	707	1,489	2,633	2,391	649	1,409	10,979	5,241	33,643
2024	2,959	2,231	3,013	709	1,496	2,640	2,398	648	1,406	10,972	5,174	33,646
2025	2,981	2,244	3,010	711	1,500	2,651	2,414	647	1,404	10,936	5,112	33,610
2026	2,985	2,246	2,984	710	1,489	2,643	2,413	647	1,401	10,934	5,081	33,533
2027	2,985	2,248	2,956	707	1,478	2,635	2,412	647	1,403	10,963	5,104	33,538
2028	2,980	2,249	2,929	705	1,469	2,631	2,413	650	1,409	11,031	5,144	33,610
2029	2,985	2,245	2,910	702	1,466	2,636	2,420	654	1,421	11,159	5,198	33,796
2030	2,990	2,244	2,897	701	1,464	2,645	2,431	661	1,435	11,318	5,253	34,039
2031	2,999	2,249	2,893	698	1,469	2,658	2,448	668	1,451	11,483	5,307	34,323
2032	3,014	2,257	2,899	696	1,475	2,675	2,467	674	1,465	11,622	5,362	34,606

# Zonal Baseline Non-Coincident Peak Forecasts

**Table I-4a-G: Gross Baseline Summer Non-Coincident Peak Demand Forecast**

Reflects Impacts of Energy Saving Programs & Behind-the-Meter Generation

## Non-Coincident Summer Peak Demand by Zone - MW

Gross Forecast (Load plus BTM Solar Generation)

Year	A	B	C	D	E	F	G	H	I	J	K
2023	3,080	2,283	3,076	723	1,545	2,671	2,428	658	1,428	11,127	5,321
2024	3,118	2,298	3,079	725	1,551	2,678	2,434	657	1,425	11,119	5,252
2025	3,139	2,311	3,075	727	1,554	2,688	2,450	655	1,423	11,083	5,189
2026	3,142	2,313	3,048	726	1,542	2,680	2,449	655	1,419	11,081	5,157
2027	3,142	2,315	3,019	723	1,530	2,672	2,448	655	1,421	11,110	5,181
2028	3,136	2,316	2,991	721	1,520	2,667	2,449	658	1,428	11,179	5,221
2029	3,141	2,312	2,971	718	1,517	2,672	2,456	663	1,440	11,308	5,276
2030	3,146	2,311	2,958	717	1,515	2,682	2,467	670	1,454	11,470	5,332
2031	3,155	2,316	2,954	714	1,520	2,695	2,485	677	1,470	11,637	5,387
2032	3,171	2,324	2,960	712	1,526	2,712	2,504	683	1,484	11,778	5,443

# High Load Scenario Forecast

**Table I-3a-H-G: Gross Summer Coincident Peak Demand Forecast - High Load Scenario**

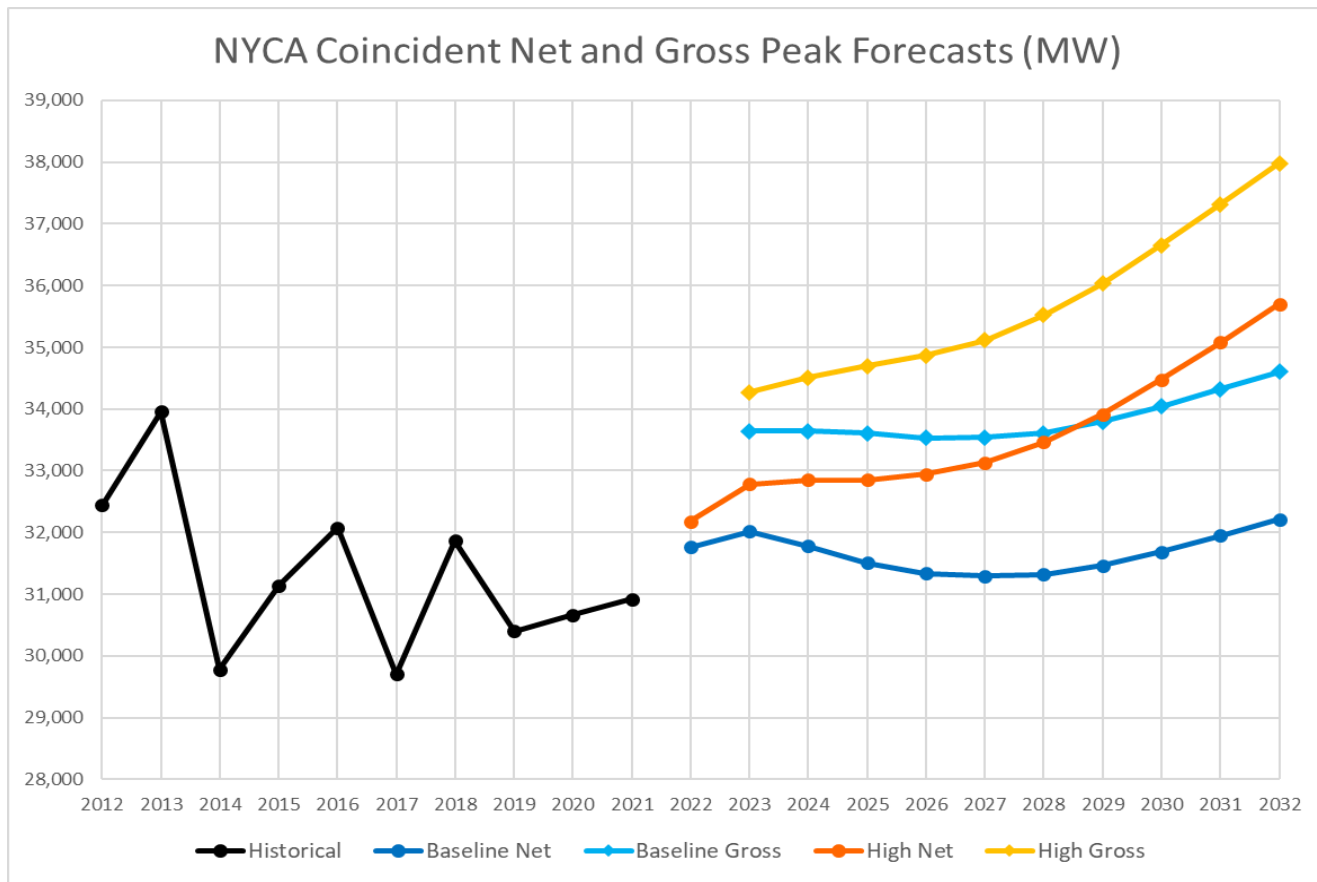
Reflects Impacts of Energy Saving Programs & Behind-the-Meter Generation

## Coincident Summer Peak Demand by Zone - MW

Gross Forecast (Load plus BTM Solar Generation)

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2023	2,954	2,240	3,046	709	1,507	2,660	2,414	654	1,422	11,321	5,347	34,274
2024	3,006	2,265	3,066	711	1,522	2,681	2,429	657	1,426	11,423	5,322	34,508
2025	3,042	2,291	3,080	715	1,535	2,702	2,453	662	1,433	11,472	5,311	34,696
2026	3,064	2,308	3,081	716	1,537	2,710	2,468	668	1,443	11,543	5,328	34,866
2027	3,082	2,324	3,080	716	1,540	2,720	2,482	673	1,454	11,653	5,391	35,115
2028	3,105	2,348	3,085	716	1,548	2,741	2,505	684	1,476	11,818	5,495	35,521
2029	3,138	2,366	3,099	717	1,562	2,769	2,532	696	1,502	12,029	5,625	36,035
2030	3,176	2,388	3,125	718	1,582	2,805	2,569	710	1,533	12,279	5,773	36,658
2031	3,221	2,417	3,158	719	1,605	2,847	2,615	724	1,563	12,533	5,919	37,321
2032	3,271	2,449	3,199	722	1,632	2,891	2,663	739	1,595	12,765	6,055	37,981

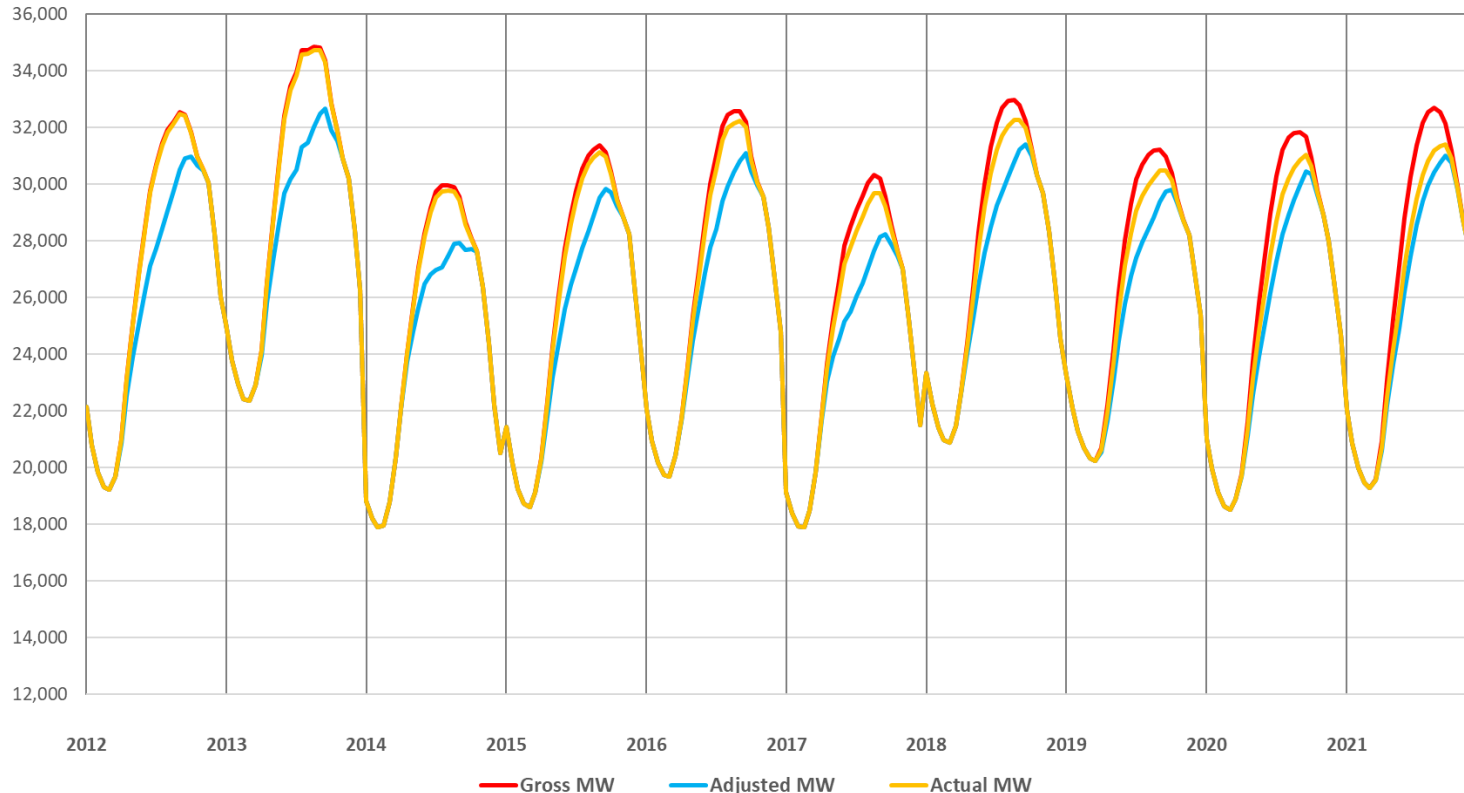
# Forecast Graph



# Supporting Graphs

# Historical Peak Day Load Shapes

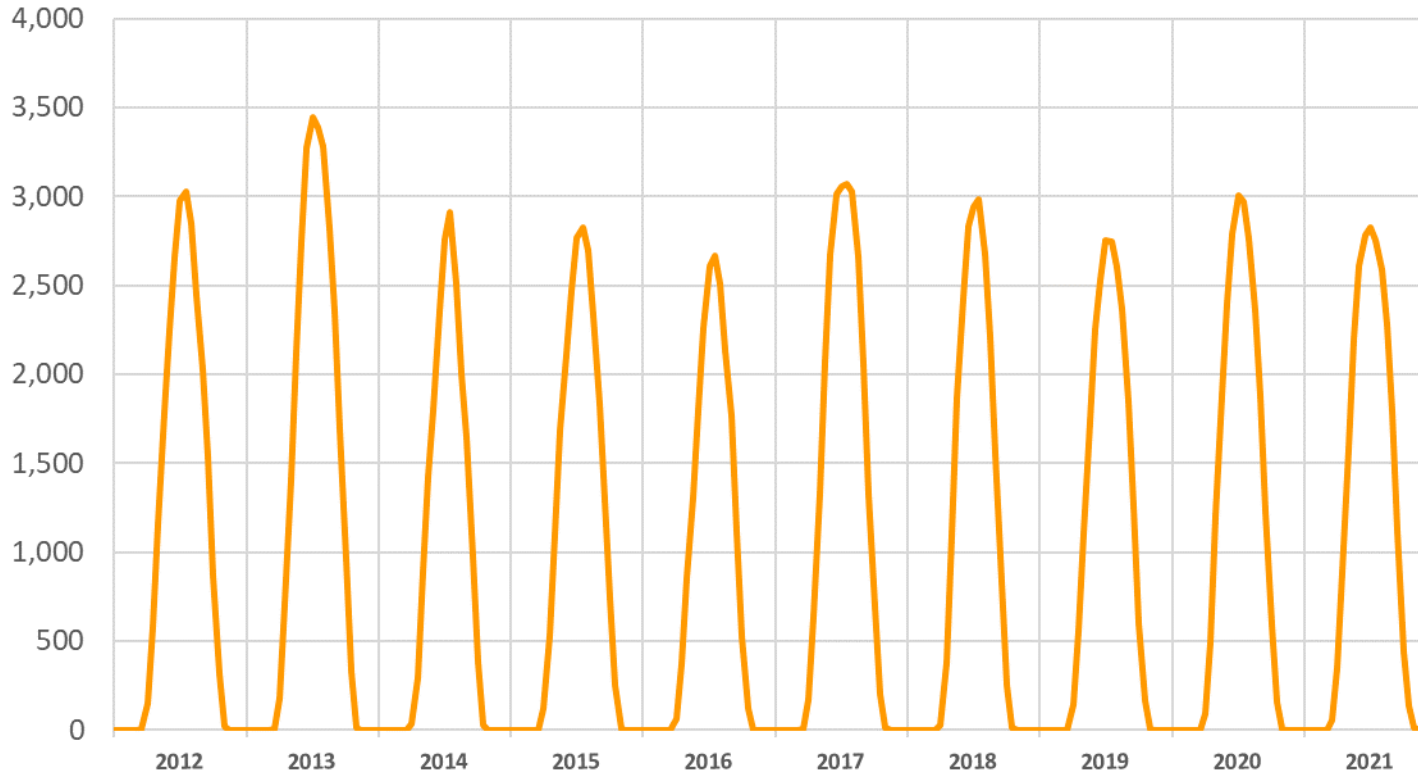
NYCA Peak Date Loadshapes



- Actual MW reflects metered load
- Gross MW reflects metered load plus estimated actual solar added back
- Adjusted MW reflects net load with historical solar shape scaled up to reflect projected 2023 solar capacity
- All loads include estimated demand response impacts added back

# BTM Solar on NYCA Peak Day

Peak Day BTM Solar Generation at 2023 Capacity (MW AC)

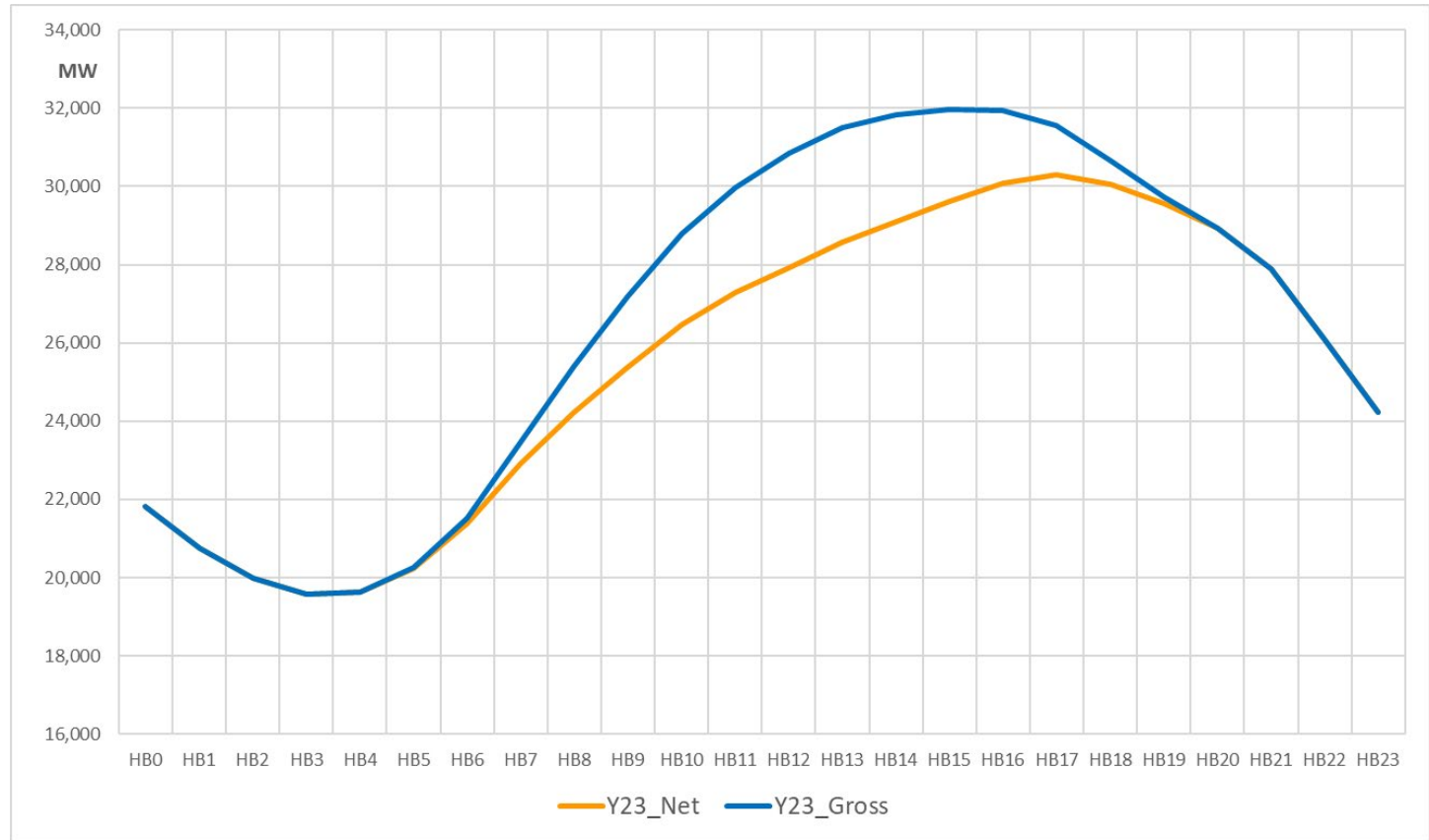


Summer 2023 BTM PV  
Capacity:  
**~ 4,700 MW DC**

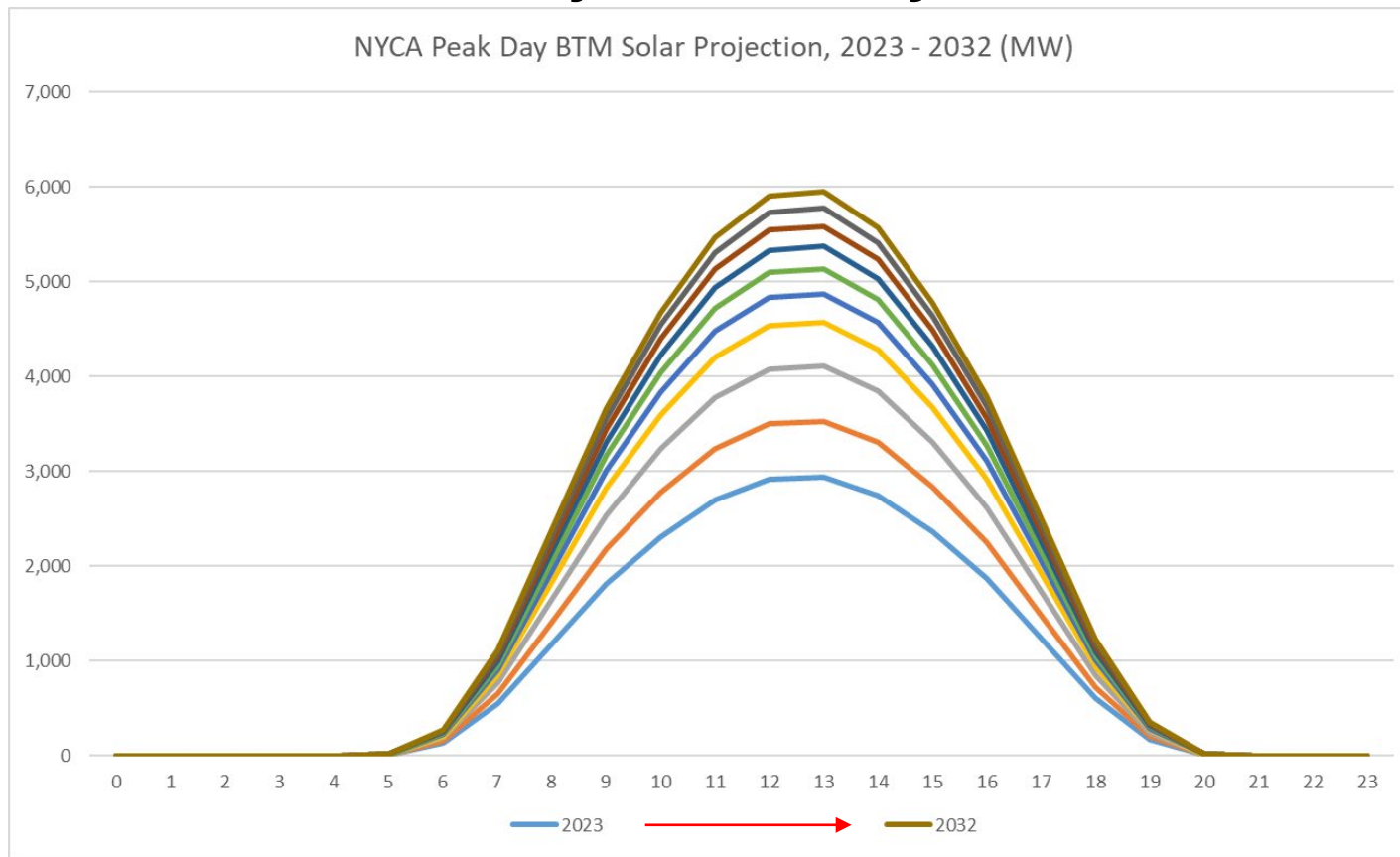
Historical Peak Day  
Capacity Factor Range  
(Max Solar Hour):  
**57% - 73%**

Average historical  
shape assumed for  
gross peak forecast

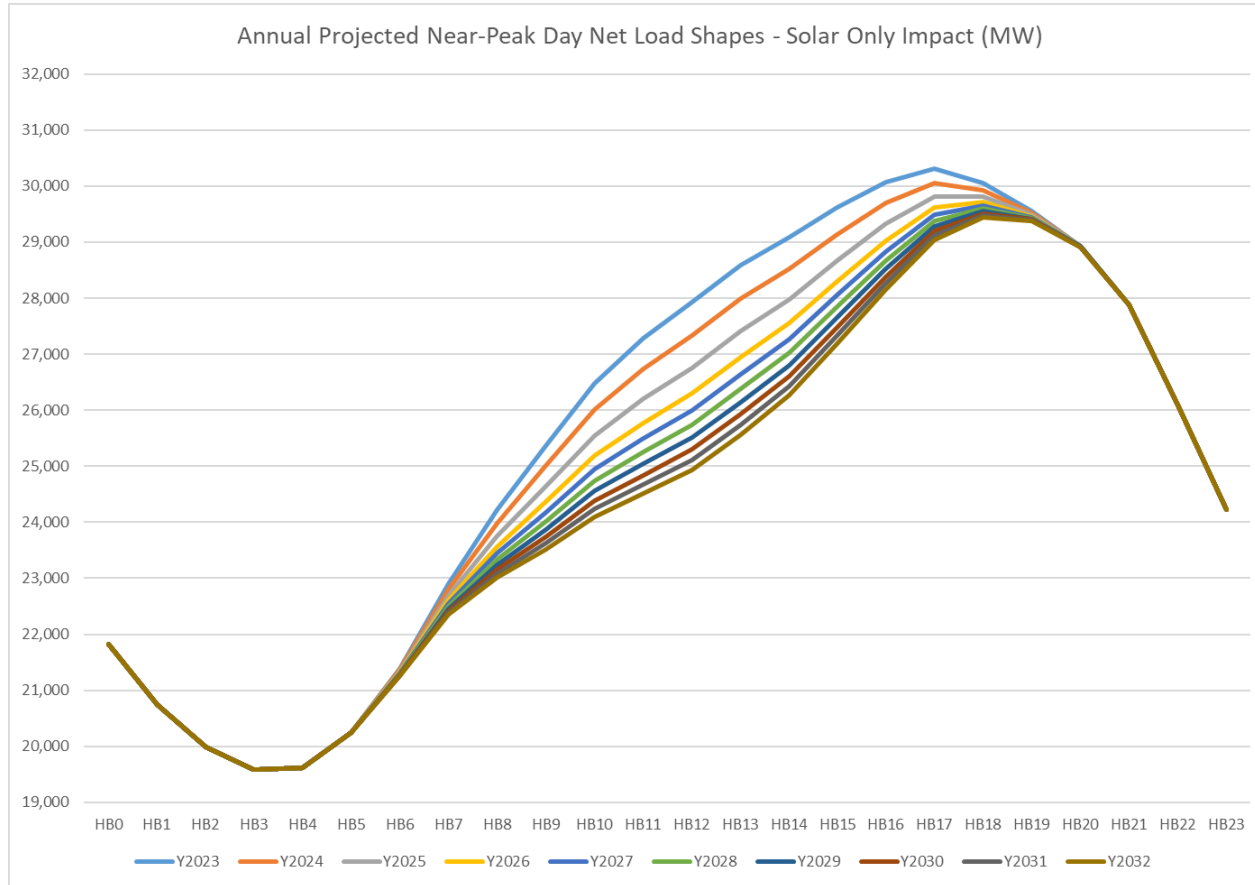
# 2023 Representative Shapes



# Peak Day Solar Projection

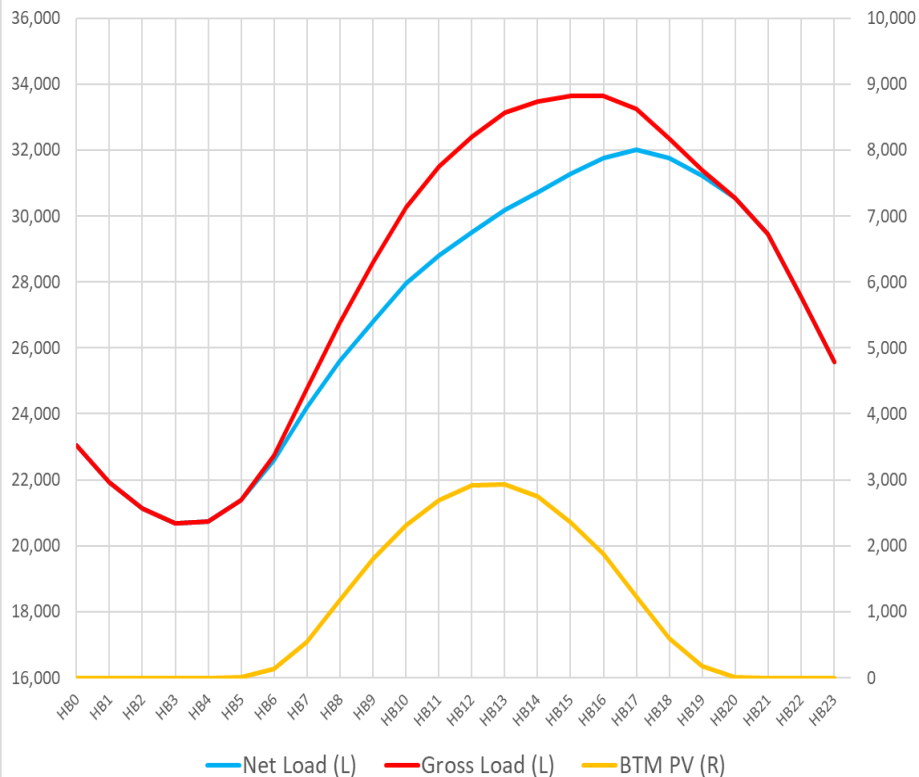


# Solar Impact on Summer Load Shape

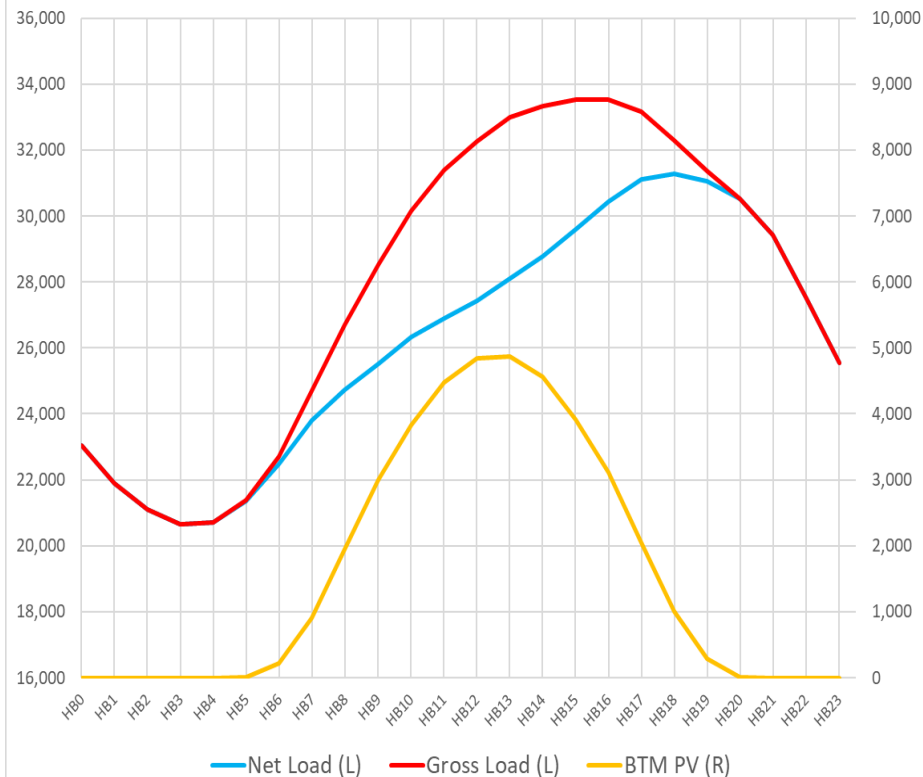


# Peak Day Net and Gross Shapes (MW)

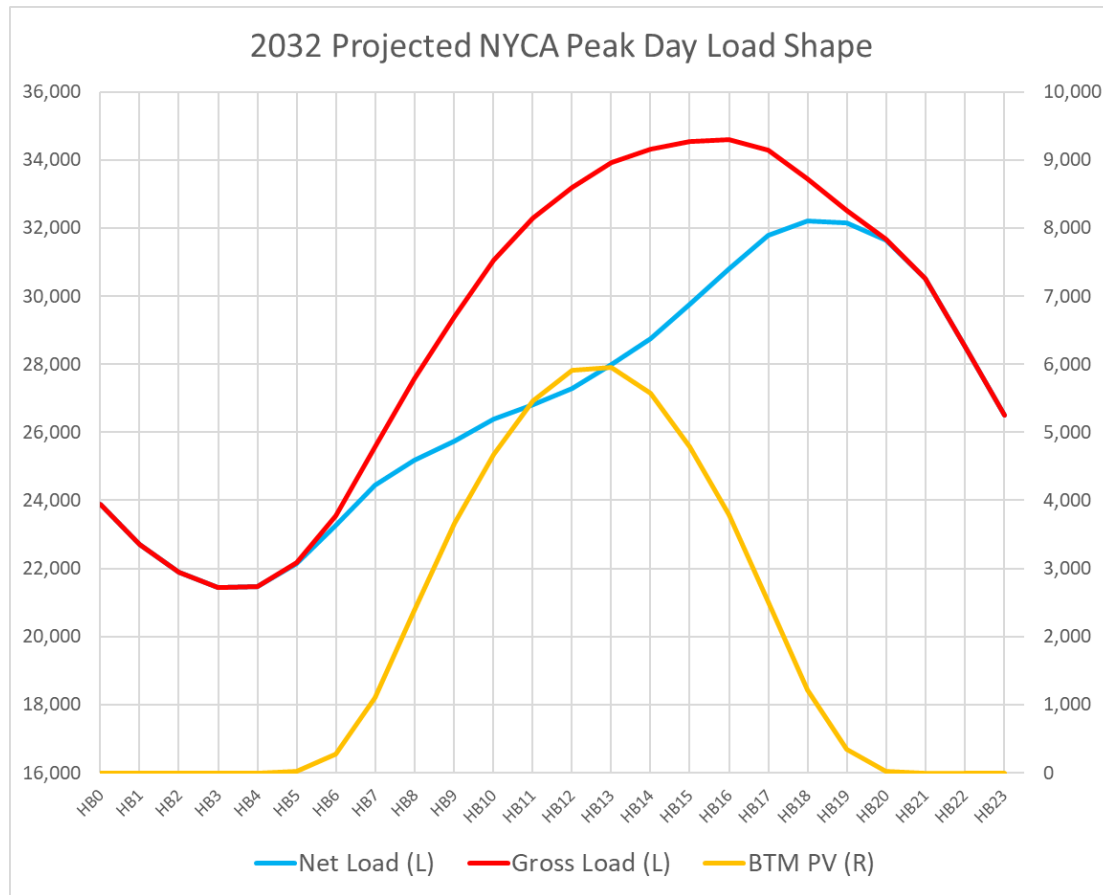
2023 Projected NYCA Peak Day Load Shape



2027 Projected NYCA Peak Day Load Shape



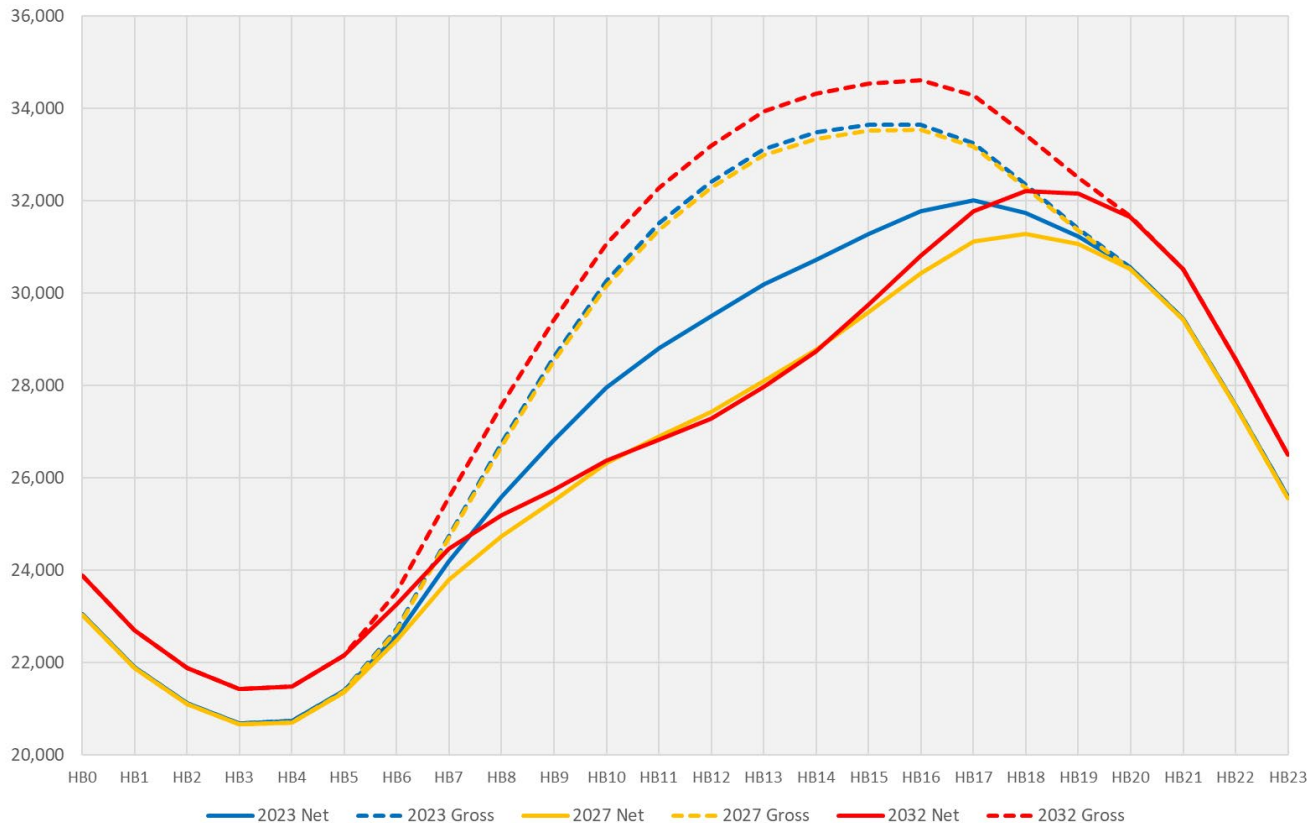
# Peak Day Net and Gross Shapes (MW)



Y2032	Peak Hour	Peak MW
Net Peak	HB 18	32,214
Gross Peak	HB 16	34,606
Difference	2 hours	2,392

# Peak Day Shape Trends

Net and Gross Load Shapes (MW)



Year	2023	2027	2032
Gross Peak Hour	HB 16	HB 16	HB 16
Gross Peak MW	33,643	33,538	34,606
Net Peak Hour	HB 17	HB 18	HB 18
Net Peak MW	32,018	31,292	32,214
Noon BTM Solar MW	2,914	4,841	5,906
Delta MW*	1,625	2,246	2,392

\*Gross Peak less Net Peak

# Questions?

# 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