New York ISO
Independent System Operator

Start-up Time: Proposed Capacity Tariff Revision

Manish Sainani
Associate Market Design Specialist, Capacity Market Design

ICAPWG/MIWG

September 18, 2023

Agenda

- Previous Discussions
- Recommendation
- Draft Capacity Tariff Revisions
- Next Steps
- Appendix
  - Background
  - Generators with Long Startup Time
  - Considerations

New York ISO

Previous Discussions

Previous Discussions

Date	Working Group	Discussion Points and Links to Materials
January 26, 2023	ICAPWG	Modeling Improvements for Capacity Accreditation: Project Kick Off: Slide 1 (nyiso.com)
April 27, 2023	ICAPWG	Startup Notification Kick Off: PowerPoint Presentation (nyiso.com)
July 27, 2023	ICAPWG	Market Design Considerations and Recommendation: PowerPoint Presentation (nyiso.com)

New York ISO

Recommendation

Recommendation

- Our recommendation is to not explicitly include start up notification time for resource adequacy.
- Instead require all ICAP suppliers (including External ICAP suppliers utilizing External Generators combined with External UDRs) to commit to reach lower operating limit (LOL)/min. generation with no more than 24 hours notice during forecasted peak load events i.e., days when demand* is equal to or greater than 90% of forecasted seasonal ICAP peak in the capacity zone(s) the supplier is located in or providing to.

*according to 2-day ahead baseline (50-50) forecast

New York ISO

Forecasted peak load events*

Year	Number of days							
	NYCA		G-J		NYC		LI	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
2018	5	9	1	21	1	24	4	6
2019	4	0	0	16	1	21	5	5
2020	4	0	1	0	0	0	12	0
2021	5	1	3	1	2	0	9	0
2022	3	6	4	6	4	3	11	9

* days when demand is equal to or greater than 90% of forecasted seasonal ICAP peak

New York ISO

Forecasted Seasonal Peak load

Seasonal peak load (2018-2022)

Locality	Capability Period										
	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20	Summer 2020	Winter 2020-21	Summer 2021	Winter 2021-22	Summer 2022	Winter 2022-23
NYCA	24,365	32,903	24,269	32,383	24,123	32,296	24,130	32,330	24,025	31,766	23,893
G-J	10,662	15,918	10,427	15,883	10,464	15,695	10,503	15,411	10,494	15,125	10,251
NYC	7,704	11,539	7,526	11,607	7,606	11,477	7,621	11,199	7,610	10,906	7,422
LI	3,440	5,376	3,362	5,240	3,365	5,228	3,393	5,249	3,270	5,138	3,180

90% of Seasonal peak load (2018-2022)

Locality	Capability Period										
	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20	Summer 2020	Winter 2020-21	Summer 2021	Winter 2021-22	Summer 2022	Winter 2022-23
NYCA	21,929	29,612	21,842	29,145	21,711	29,066	21,717	29,097	21,623	28,589	21,504
G-J	9,596	14,326	9,384	14,295	9,418	14,126	9,453	13,870	9,445	13,613	9,226
NYC	6,934	10,385	6,773	10,446	6,845	10,329	6,859	10,079	6,849	9,815	6,680
LI	3,096	4,838	3,026	4,716	3,029	4,705	3,054	4,724	2,943	4,624	2,862

Draft Capacity Tariff Revisions

Draft Capacity Tariff Revisions

- **MST 5.12.1.10**
  - Added External ICAP supplier requirement:
    - Beginning with the Capability Year beginning May 1, 2024, if an External Installed Capacity Supplier utilizes an External Generator it shall be able to reach lower operating limit (LOL)/minimum generation with no more than 24 hours' notice, for any and all days for which the 2-day ahead forecast of those days is equal to or exceeds 90% of the baseline seasonal peak demand forecast for the NYCA, or in the case of an External Generator(s) combined with an External UDR, the specific Locality or Localities associated with the External UDR. The baseline seasonal peak demand forecasts are published annually in Section I of the NYISO's Load and Capacity Report ("Gold Book") just prior to the upcoming Capability Year. The reference baseline forecast for each Locality is specified in 5.12.7. This startup capability shall be reflected in the External ICAP Suppliers' offer parameters as part of its bidding obligations in the neighboring region's energy markets, and in response to a NYISO SRE call, whenever this 2-day ahead demand forecast threshold is met.

New York ISO

Draft Capacity Tariff Revisions

- **MST 5.12.7**
  - Added ICAP supplier requirement:
    - Beginning with the Capability Year beginning May 1, 2024, each Installed Capacity Supplier shall, except as noted in Section 5.12.11 of this Tariff, be able to reach lower operating limit (LOL)/minimum generation with no more than 24 hours' notice, for any and all days for which the 2-day ahead forecast of those days is equal to or exceeds 90% of the baseline seasonal peak demand forecast for NYCA if the ICAP Supplier is located in Zones A-F, or the baseline seasonal peak forecast for the Locality or Localities in which the ICAP Supplier is located. The baseline seasonal peak demand forecasts are published annually in Section I of the NYISO's Load and Capacity Report ("Gold Book") just prior to the upcoming Capability Year. This startup capability shall be reflected in the ICAP Suppliers' DAM offer parameters as part of its bidding obligations, and in response to a NYISO SRE call, when this threshold is met.

    - The baseline seasonal peak forecast for the G-J Locality refers to the non-coincident G-to-J locality's forecasted baseline seasonal peak (Gold Book: Baseline Peak Demand in G-to-J Locality, Historical & Forecast). The baseline seasonal peak forecast for Zones J and K refer to forecasted baseline seasonal non-coincident zonal peaks for each of these zones (For Summer: Gold Book: Baseline Summer Non-Coincident Peak Demand, Historical & Forecast; For Winter: Gold Book: Baseline Winter Non-Coincident Peak Demand, Historical & Forecast). NYCA peak refers to NYCA baseline seasonal coincident peak (Gold Book: NYCA Baseline Energy and Demand Forecasts). All these peaks during the summer capability period are equivalent to their corresponding ICAP peak forecast.

New York ISO

Draft Capacity Tariff Revisions

- **MST 5.12**
  - Added ‘External’ and ‘Internal’ before UDRs to clarify and distinguish between Internal UDRs and External UDRs, which is being driven by the ICL project.

New York ISO

Next Steps

Next Steps

- Return to future ICAPWG/MIWG meetings to continue discussions with stakeholders.
- Q4 Market Design Complete

New York ISO

Questions?

Appendix

Background

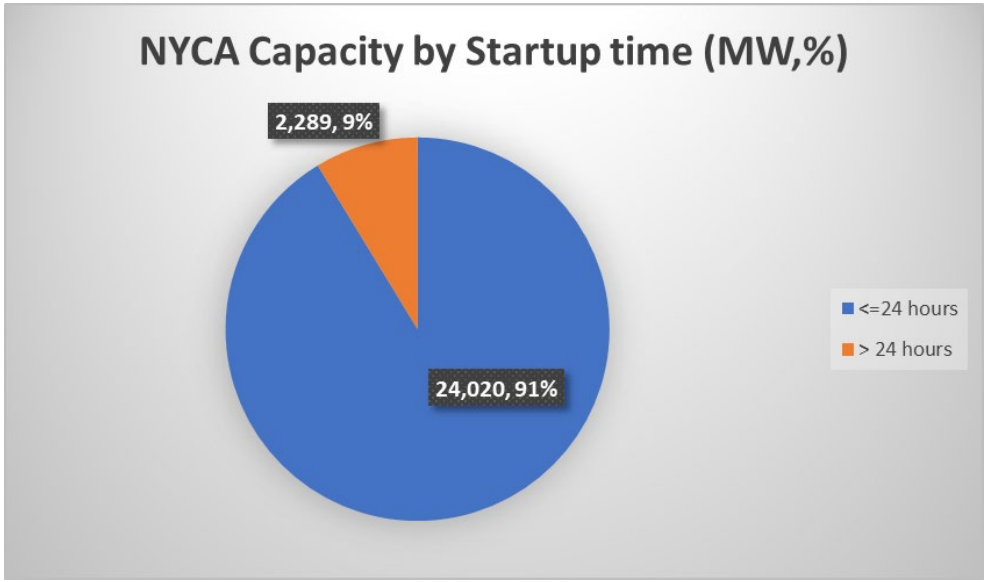
Background: Start-up Times

- Startup time is defined as the amount of time required to ramp from offline state to lower operating limit (LOL)/min. generation
- Startup time for a given unit may vary based on how long the unit has been offline. This analysis displays the greatest possible startup time
- Inflexible units such as steam turbines with long startup lead times may provide less reliability value than more flexible units, because they may be unable to start in time when needed

New York ISO

Generators with Long Start-up Time

Generators with Long Startup Time



*Non-flexible units, such as Nuclear and Intermittent Power Resources were excluded from the analysis

New York ISO

Considerations

Considerations

- Provide efficient incentives to investors to decide whether to retire a resource by aligning its capacity payments with resource's reliability impact
- MARS is not designated to consider unit commitment separately from dispatch. Hence, MARS cannot accurately estimate reliability value of inflexible units such as generators with long startup notification times

New York ISO

Considerations

- The 8-hour Peak Load Window for the Summer Capability Period is HB 12 through HB 19. During a peak-load window, all resources not in an outage should be available for being called upon.
- Resources with start-time greater than 24 hours cannot be scheduled for a noon start on the following day since DAM Schedules and LBMP posted by 11 a.m.

New York ISO

Considerations

- Units with startup time under 24 hours are not a resource adequacy concern as NYISO has operating and dispatch control on those units in that 24 hour-window. There is no need to differentiate between those resources, in the capacity market, based on their start time.

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