Summer 2018 Capacity Assessment

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NYSRC Executive Committee Meeting

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NEW YORK INDEPENDENT SYSTEM OPERATOR

DRAFT – FOR DISCUSSION PURPOSES ONLY

Highlights

- **This summer capacity assessment utilizes a "deterministic approach" for approximating capacity margins and operating reserves for baseline and extreme weather conditions.**
  - NERC Standard TOP-002-2.1b — Normal Operations Planning, Requirement 7: Each Balancing Authority shall plan and secure sufficient day ahead capacity to secure for the single largest contingency
  - The assessment utilizes a set of projected derates based on five-year EForD averages
- **At <u>baseline peak weather conditions:</u>**
  - +1,599 MW of capacity margin surplus, an increase of 1,214 MW over the baseline 2017 forecast. This is the projected capacity margin above the baseline peak load plus 2,620 MW of operating reserves.
- **At <u>extreme weather conditions:</u> (90th percentile forecast):**
  - -241 MW of capacity margin shortfall, an increase of 1,683 MW compared to the 2017 extreme weather forecast. This is the projected shortfall for the 90th percentile load plus 2,620 MW of operating reserves.

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2017 & 2018 Summer Capacity Assessment & Comparison

Line	Item	2017		2018	
		2017 Baseline Forecast	2017 90th Percentile Forecast	2018 Baseline Forecast	2018 90th Percentile Forecast
1a	Summer Generation Capacity[1]	37,609	37,609	39,325	39,325
1b	SCR - ICAP Values	1,191	1,191	1,219	1,219
1c	Net Purchases & Sales	2,213	2,213	1,625	1,625
1	**Total Capacity Resources**	**41,013**	**41,013**	**42,169**	**42,169**
2	Assumed Unavailable Capacity (Gen + SCR)[2]	-4,829	-4,829	-5,046	-5,046
3 = 1 + 2	**Net Capacity Resources**	**36,184**	**36,184**	**37,123**	**37,123**
4	Peak Load Forecast	33,178	35,488	32,904	34,744
5	Operating Reserve Requirement	2,620	2,620	2,620	2,620
6 = 4+5	**Total Capacity Requirement**	**35,798**	**38,108**	**35,524**	**37,364**
7 = 3 - 6	**Capacity Margin[3]**	**386**	**-1,924**	**1,599**	**-241**

1. Reflects the 2018 Gold Book existing capacity plus projected additions and deactivations during the summer of 2018 as well as known forced outages
2. Derates: 1,418 MW for wind, 505 MW for Hydro, 2,692 MW for thermal units, 70 MW for other renewables and 361 MW for SCRs
3. While the assessment shows a deficiency of 241 MW for the 90th percentile load forecast, no involuntary load curtailment is forecast to occur because it is expected that there may be up to 3,004 MW available under Emergency Operating Procedures.

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Southeastern New York[1]: Summer Transmission Security - Base Case

Line	Item	2018 Baseline Forecast	2018 90th Percentile Forecast
1a	Available Generation Capacity Resources[2]	14,901	14,901
1b	Net ICAP External Imports	315	315
1c	Transmission Capability from UPNY to SENY (N-1-1)	3,180	3,180
1d	Transmission Capability, Long Island to SENY	50	50
1	**Total Capability**	**18,446**	**18,446**
2	**Projected Capacity Outages**	**0**	**0**
3 = (1-2)	**Total Capability**	**18,446**	**18,446**
4	**Load Forecast in Zones G to J**	15,846	16,456
5 = (3-4)	**Capacity Margin w/o SCR**	**2,600**	**1,990**
6	**SCR GHIJ**	**475**	**475**
7 = (5+6)	**Capacity Margin w/ SCR**	**3,075**	**2,465**

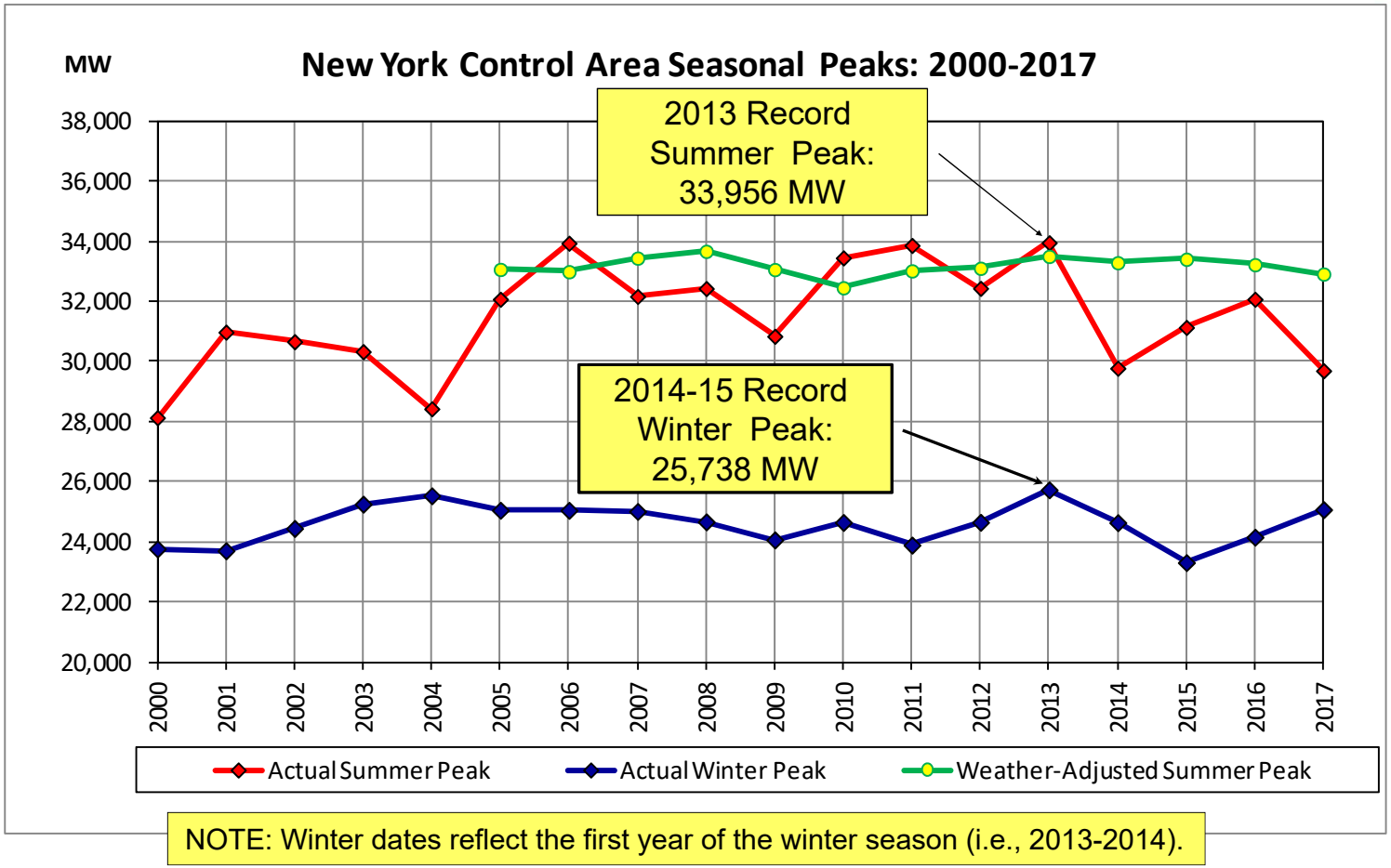
1 - Southeast Region includes Zones G to J
2 - All generation capability less known forced outages

Zone J, NYC: Summer Transmission Security - Base Case

Line	Item	2018 Baseline Forecast	2018 90th Percentile Forecast
1a	Available Generation Capacity Resources[1]	9,084	9,084
1b	Net ICAP External Imports	315	315
1c	Transmission Capability from Sprainbrook to Dunwoodie (N-1-1)	2,800	2,800
1d	Transmission Capability, Long Island to NYC	300	300
1e	Transmission Capability, A/B/C	400	400
1	**Total Capability**	**12,899**	**12,899**
2	Projected Capacity Outages	**0**	**0**
3 = (1-2)	**Total Capability**	**12,899**	**12,899**
4	Load Forecast in Zone J	11,403	11,764
5 = (3-4)	**Capacity Margin w/o SCR**	**1,496**	**1,135**
6	SCR J	**392**	**392**
7 = (5+6)	**Capacity Margin w/ SCR**	**1,888**	**1,527**

1 - All generation capability less known forced outages

2018 Emergency Operating Procedures		
Procedure	**Effect**	**2018 MW Value**
Emergency Demand Response Programs	Load Impact	3
Voltage Reductions	Load Impact	488
Voluntary Industrial Curtailment	Load Impact	122
General Public Appeals	Load Impact	81
Emergency Purchases	Additional Resources	1,000
Thirty Minute Reserves to Zero	Allow Operating Reserve to Decrease to Largest Single Contingency	1,310
Total Emergency Operating Procedures		**3,004**



NOTE: Winter dates reflect the first year of the winter season (i.e., 2013-2014).

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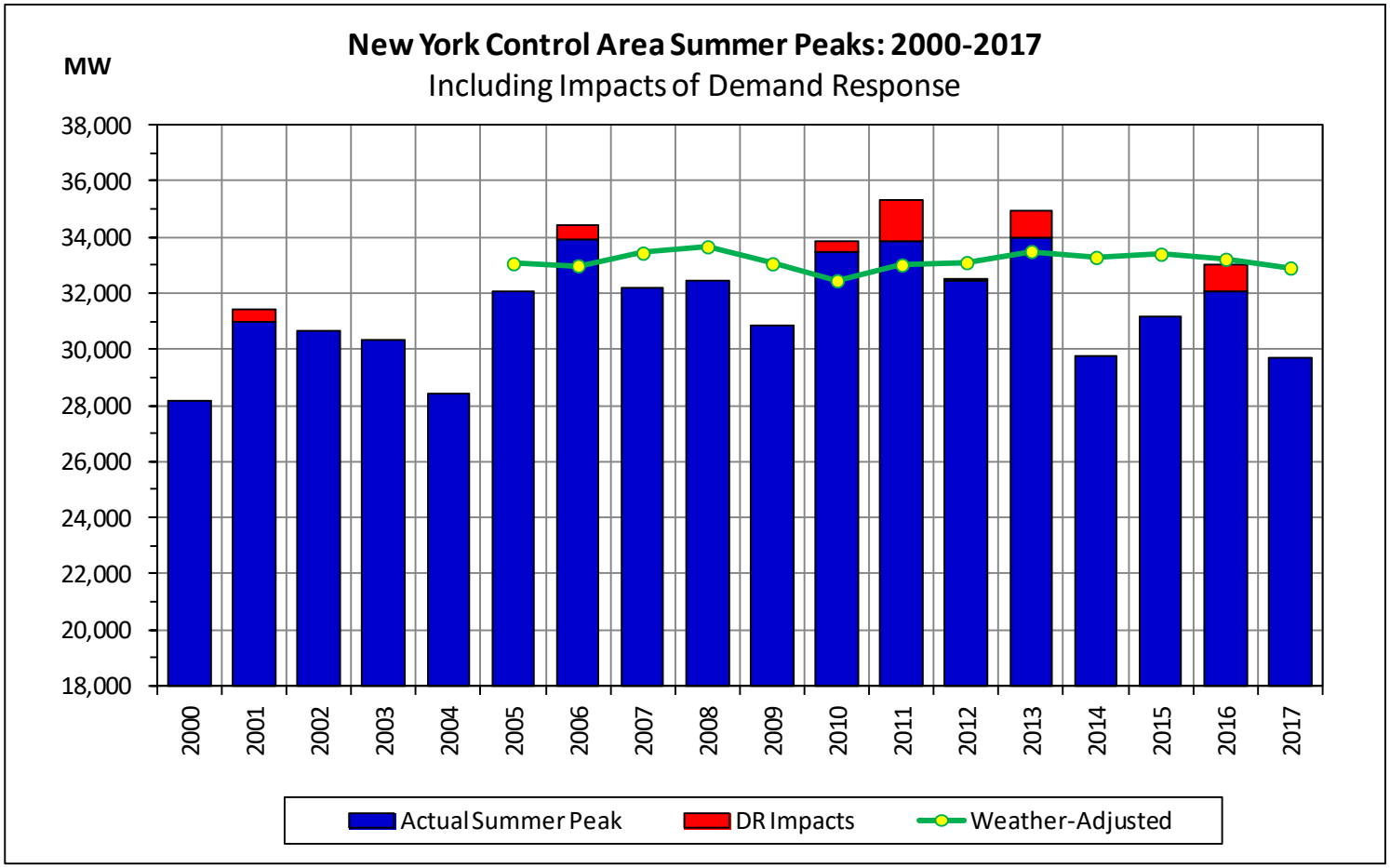

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- **Provide benefit to stakeholders by**
  - Maintaining and enhancing regional reliability
  - Operating open, fair and competitive wholesale electricity markets
  - Planning the power system for the future
  - Providing factual information to policy makers, stakeholders and investors in the power system

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