

Short-Term Assessment of Reliability: 2022 Q2 Key Study Assumptions

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STAR Process Information

- **The NYISO is assessing the reliability of the Bulk Power Transmission Facilities (BPTF)**
- **The assessment of the non-BPTF impacts for the generator deactivations includes Con Edison, PSEG Long Island, and National Grid**
- **The NYISO posted the 2022 Q1 STAR on April 15, 2022**
 - Generator deactivation reliability needs are observed by National Grid on their non-BPTF system beginning in summer 2022 that are resolved by the retention of the Sithe Batavia generating unit for the remainder of the 365 day period that follow the 2022 Quarter 1 STAR Start Date (January 15, 2022)
 - The Sithe Batavia generator is not needed beyond the 365-day generator deactivation notice period based upon the timeframe for National Grid's planned local upgrades in conjunction with its operating procedures
- **The NYISO plans to post the 2022 Q2 STAR by July 14, 2022**
- **The 2022 Q3 STAR will commence on July 15, 2022**

Study Assumptions

- **The most recent base cases from the Reliability Planning Process are those used for the 2020 Reliability Needs Assessment (RNA) ([Link to RNA](#)) and updated for the prior STAR**
 - The 2020 RNA Base Case and the Inclusion Rules Application as well as the DEC's Peaker Rule Impacts on the 2020 RNA Base Case presented at the June 19, 2020 ESPWG/TPAS are provided at the end of this presentation for reference
 - Post-RNA base case updates were presented to stakeholders at the February 23, 2021 ([here](#)) and March 26, 2021 ([here](#)) ESPWG/TPAS meetings
 - The 2022 Q1 key assumptions were presented at the January 25, 2022 ESPWG/TPAS meeting ([here](#))
- **Study Period**
 - April 15, 2022 (STAR Start Date) through April 15, 2027

Updated Study Assumptions for 2022 Q2 STAR

Updated Generation Assumptions

- **The changes to generation assumptions compared to the prior STAR include the following:**
 - Generator deactivations:
 - See list attached to this presentation
 - Generator return-to-service:
 - No units have returned to service beyond those included in the prior STAR
 - Additions:
 - No additions beyond those included in the prior STAR, however, the commercial operation date of several projects has changed. A summary of these changes is provided on the next slide
 - Other:
 - No changes compared to those included in the prior STAR

Updated Generation Assumptions

- Updated commercial operation date changes of generation projects included in the prior STAR are provided below:

Queue	Proposed Generator Project	Zone	Prior STAR COD	Current STAR COD (if changed from prior STAR)	Requested CRIS (MW)	Summer (MW)	STAR Assessment
505	Ball Hill Wind	A	12/2022	11/2022	100.0	100.0	2020 Q3
430	Cedar Rapids Transmission Upgrade	D	10/2021	In-Service	80.0	N/A	2020 Q3
678	Calverton Solar Energy Center	K	12/2020	6/2022	22.9	22.9	2020 Q3
0589	North Country Solar	E	09/2022	Not Included (1)	N/A	15.0	2021 Q3
0570	Albany County 1	F	11/2021	12/2022	N/A	20.0	2021 Q3
0598	Albany County 2	F	11/2021	12/2022	N/A	20.0	2021 Q3
0730	Darby Solar	F	11/2021	12/2022	N/A	20.0	2021 Q3
0735	ELP Stillwater Solar	F	11/2021	9/2022	N/A	20.0	2021 Q3
0638	Pattersonville	F	11/2021	12/2022	N/A	20.0	2021 Q3
0572	Greene County 1	G	11/2021	1/2023	N/A	20.0	2021 Q3
0573	Greene County 2	G	11/2021	3/2023	N/A	10.0	2021 Q3
0682	Grissom Solar	F	12/2021	6/2022	N/A	20.0	2021 Q3
0748	Regan Solar	F	12/2021	6/2022	N/A	20.0	2021 Q3
0545	Sky High Solar	C	08/2022	6/2023	N/A	20.0	2021 Q3

Notes

(1) Project withdrew from NYISO Interconnection Queue

Load Assumptions

- This study utilizes the forecast from the 2021 Load and Capacity Data Report (“Gold Book”)
- The list of additional load projects has not changed from the prior STAR; however, their forecasted load impacts have changed compared to the prior STAR (details provided on the next slide)
- The load projects included in this STAR are the following:
 - Q0580 – WNY STAMP
 - Q0776 – Greenidge Load
 - Q0849 – Somerset Load
 - Q0580 – Cayuga load
 - Q0979 – North Country Data Center (load increase)
 - As an SIS has yet to be complete for Q0979 this load will only be included in the resource adequacy evaluations

Load Assumptions

- Changes to zonal load forecast based on load queue project additions are shown below, including the differences in zonal forecast as compared to the 2021 Gold Book

Prior STAR (As Compared to 2021 Gold Book)																	
Year	Annual Energy GWh Delta					Year	Summer Peak MW Delta					Year	Winter Peak MW Delta				
	A	B	C	D	Total		A	B	C	D	Total		A	B	C	D	Total
2022	320	0	0	0	320	2022	0	0	0	0	0	2022-23	245	0	0	0	245
2023	1,950	0	580	490	3,020	2023	245	0	110	75	430	2023-24	255	0	110	125	490
2024	2,100	0	860	1,110	4,070	2024	270	0	110	135	515	2024-25	285	0	110	145	540
2025	2,340	0	860	1,280	4,480	2025	300	0	110	155	565	2025-26	315	0	110	165	590
2026	2,580	0	860	1,440	4,880	2026	330	0	110	175	615	2026-27	345	0	110	185	640

2022 Q2 STAR (As Compared to 2021 Gold Book)																	
Year	Annual Energy GWh Delta					Year	Summer Peak MW Delta					Year	Winter Peak MW Delta				
	A	B	C	D	Total		A	B	C	D	Total		A	B	C	D	Total
2022	120	200	0	20	340	2022	0	0	0	0	0	2022-23	95	150	0	30	275
2023	760	1,190	580	250	2,780	2023	95	150	110	30	385	2023-24	100	155	110	30	395
2024	850	1,250	860	250	3,210	2024	110	160	110	30	410	2024-25	120	165	110	30	425
2025	1,010	1,330	860	250	3,450	2025	130	170	110	30	440	2025-26	140	175	110	30	455
2026	1,170	1,410	860	250	3,690	2026	150	180	110	30	470	2026-27	160	185	110	30	485

Transmission Assumptions

- **The changes to transmission assumptions compared to the prior STAR include the following:**
 - Existing transmission
 - Moses/St. Lawrence L33P 230 kV circuit now planned to return-to-service July 2022
 - Sprain Brook – East Garden City (Y49) 345 kV planned out-of-service from October 2022 through May 2023
 - Proposed transmission
 - No other changes to proposed transmission assumptions compared to the prior STAR are included in this assessment

Questions?

Changes to Study Assumptions for Q2 2022 STAR: Compared to RNA Assumptions Included in Prior STAR

DEC Peaker Rule Assumptions

Owner/Operator	Station	Zone	Nameplate (MW)	CRIS (MW) (1)		Capability (MW) (1)		Status Change Date (2)	STAR Evaluation or Other Assessment
				Summer	Winter	Summer	Winter		
National Grid	West Babylon 4	K	52.4	49.0	64.0	41.2	63.0	12/12/2020 (R)	Other (6)
Astoria Generating Company, L.P.	Gowanus 1-8 (7)	J	20.0	16.1	21.0	16.0	21.0	2/1/2021 (IIFO)	2021 Q3
National Grid	Glenwood GT 01 (4)	K	16.0	14.6	19.1	13.0	15.3	2/28/2021 (R)	2020 Q1
Helix Ravenswood, LLC	Ravenswood 11	J	25.0	20.2	25.7	16.1	22.2	12/1/2021 (IIFO)	2022 Q1
Helix Ravenswood, LLC	Ravenswood 01	J	18.6	8.8	11.5	7.7	9.4	1/1/2022 (IIFO)	2022 Q1
Central Hudson Gas & Elec. Corp.	Coxsackie GT	G	21.6	21.6	26.0	19.3	24.8	5/1/2023	
Central Hudson Gas & Elec. Corp.	South Cairo	G	21.6	19.8	25.9	18.4	22.9	5/1/2023	
Consolidated Edison Co. of NY, Inc.	74 St. GT 1 & 2	J	37.0	39.1	49.2	39.3	42.4	5/1/2023	2022 Q2
Astoria Generating Company, L.P.	Astoria GT 01	J	16.0	15.7	20.5	13.6	19.3	5/1/2023	
NRG Power Marketing, LLC	Astoria GT 2-1, 2-2, 2-3, 2-4	J	186.0	165.8	204.1	140.4	181.7	5/1/2023	2022 Q2
NRG Power Marketing, LLC	Astoria GT 3-1, 3-2, 3-3, 3-4	J	186.0	170.7	210.0	142.3	180.8	5/1/2023	2022 Q2
NRG Power Marketing, LLC	Astoria GT 4-1, 4-2, 4-3, 4-4	J	186.0	167.9	206.7	133.7	178.4	5/1/2023	2022 Q2
Astoria Generating Company, L.P.	Gowanus 1-1 through 1-7	J	140.0	122.6	160.1	124.7	159.7	5/1/2023	2022 Q2
Astoria Generating Company, L.P.	Gowanus 4-1 through 4-8	J	160.0	140.1	182.9	142.5	184.5	5/1/2023	2022 Q2
Consolidated Edison Co. of NY, Inc.	Hudson Ave 3	J	16.3	16.0	20.9	16.6	19.5	5/1/2023	2022 Q2
Consolidated Edison Co. of NY, Inc.	Hudson Ave 5	J	16.3	15.1	19.7	14.2	18.5	5/1/2023	2022 Q2
Helix Ravenswood, LLC	Ravenswood 10	J	25.0	21.2	27.0	16.0	21.8	5/1/2023	
National Grid	Glenwood GT 03 (3) (4)	K	55.0	54.7	71.5	53.1	68.1	5/1/2023	
National Grid	Northport GT	K	16.0	13.8	18.0	11.9	15.6	5/1/2023	
National Grid	Port Jefferson GT 01	K	16.0	14.1	18.4	12.7	17.5	5/1/2023	
National Grid	Shoreham 1 (3) (4)	K	52.9	48.9	63.9	42.7	65.5	5/1/2023	
National Grid	Shoreham 2 (3) (4)	K	18.6	18.5	23.5	15.7	20.4	5/1/2023	
Consolidated Edison Co. of NY, Inc.	59 St. GT 1	J	17.1	15.4	20.1	15.6	19.5	5/1/2025	
NRG Power Marketing, LLC	Arthur Kill GT 1	J	20.0	16.5	21.6	12.2	15.8	5/1/2025	
Astoria Generating Company, L.P.	Gowanus 2-1 through 2-8 (5)	J	160.0	152.8	199.6	144.1	185.0	5/1/2025	
Astoria Generating Company, L.P.	Gowanus 3-1 through 3-8 (5)	J	160.0	146.8	191.7	136.5	179.4	5/1/2025	
Astoria Generating Company, L.P.	Narrows 1-1 through 2-8 (5)	J	352.0	309.1	403.6	291.5	376.2	5/1/2025	
	Prior to 2023		132.0	108.7	141.3	94.0	130.9		
	2023 Total		1,170.3	1,065.6	1,348.3	957.1	1,241.4		
	2025 Total		709.1	640.6	836.6	599.9	775.9		
	Total		2,011.4	1,814.9	2,326.2	1,651.0	2,148.2		

Notes

- MW values are from the 2021 Load and Capacity Data Report
- Dates identified by generators in their DEC Peaker Rule compliance plan submittals for transitioning the facility to Retired, Blackstart, or will be out-of-service in the summer ozone season or the date in which the generator entered (or proposed to enter) Retired (R) or Mothball Outage (MO) or the date on which the generator entered ICAP Ineligible Forced Outage (IIFO)
- Generator changed DEC peaker rule compliance plan as compared to the 2020 RNA and all STARs prior to 2021 Q3
- Long Island Power Authority (LIPA) has submitted notifications to the DEC per part 227-3 of the peaker rule stating that these units are needed for reliability allowing these units to operate until at least May 1, 2025. Due to the future nature of these units being operated only as designated by the operator as an emergency operating procedure the NYISO will continue to plan for these units be unavailable starting May 2023
- These units have indicated they will be out-of-service during the ozone season (May through September) in their compliance plans in response to the DEC peaker rule.
- This unit was evaluated in a stand-alone generator deactivation assessment prior to the creation of the Short-Term Reliability Process
- The retirement of this unit is evaluated in the 2022 Q2 STAR

Generator Deactivations

Owner/ Operator	Plant Name	Zone	CRIS (MW)		Capability (MW)		Status	Deactivation date (6)
			Summer	Winter	Summer	Winter		
International Paper Company	Ticonderoga (1)	F	7.6		9.5	9.8	I	05/01/2017
Helix Ravenswood, LLC	Ravenswood 09	J	21.7	27.6	16.3	22.8	R	11/01/2017
Binghamton BOP, LLC	Binghamton	C	43.8	57.2	43.7	47.1	I	01/09/2018
Helix Ravenswood, LLC	Ravenswood 2-1	J	40.4	51.4	31.4	41.7	I	04/01/2018
	Ravenswood 2-2	J	37.6	47.8	29.9	41.9	I	04/01/2018
	Ravenswood 2-3	J	39.2	49.9	28.9	37.3	I	04/01/2018
	Ravenswood 2-4	J	39.8	50.6	30.7	41.6	I	04/01/2018
	Ravenswood 3-1	J	40.5	51.5	31.9	40.8	I	04/01/2018
	Ravenswood 3-2	J	38.1	48.5	29.4	40.3	I	04/01/2018
	Ravenswood 3-4	J	35.8	45.5	31.2	40.8	I	04/01/2018
Lyonsdale Biomass, LLC	Lyonsdale	E	20.2	20.2	19.3	19.7	R	07/18/2019
Exelon Generation Company LLC	Monroe Livingston	B	2.4	2.4	2.4	2.4	R	09/01/2019
Innovative Energy Systems, Inc.	Steuben County LF	C	3.2	3.2	3.2	3.2	R	09/01/2019
Consolidated Edison Co. of NY, Inc	Hudson Ave 4	J	13.9	18.2	14.0	16.3	R	09/10/2019
New York State Elec. & Gas Corp.	Auburn - State St	C	5.8	6.2	4.1	7.3	R	10/01/2019
Somerset Operating Company, LLC	Somerset	A	686.5	686.5	676.4	684.4	R	02/15/2020
Entergy Nuclear Power Marketing, LLC	Indian Point 2	H	1,026.5	1,026.5	1,011.5	1,029.4	R	04/30/2020
Cayuga Operating Company, LLC	Cayuga 1	C	154.1	154.1	151.0	152.0	R	05/15/2020
Cayuga Operating Company, LLC	Cayuga 2	C	154.7	154.7	139.6	158.0	R	05/15/2020
Albany Energy, LLC	Albany LFGE (3)	F	4.5	4.5	5.6	5.6	I	07/01/2020
National Grid	West Babylon 4	K	49.0	64.0	50.2	65.4	R	12/11/2020 (2)
Eastern Generation, LLC	Gowanus 1-8 (4)	J	16.1	21.0	15.3	21.7	I	02/01/2021
National Grid	Glenwood GT 01 (3)	K	14.6	19.1	11.4	14.5	R	2/28/2021 (2)
Entergy Nuclear Power Marketing, LLC	Indian Point 3	H	1040.4	1040.4	1036.3	1038.3	R	04/30/2021
Helix Ravenswood, LLC	Ravenswood GT 11 (5)	J	20.2	25.7	16.1	22.2	I	12/01/2021
Helix Ravenswood, LLC	Ravenswood GT 1 (5)	J	8.8	11.5	7.7	9.4	I	01/01/2022
Total			3,565.4	3,688.2	3,447.0	3,613.9		

Notes

(1) Part of SCR program

(2) This date is the proposed Generator Deactivation Date stated in the generator deactivation notice.

(3) The Generator Deactivation Assessment for this facility was included in the 2020 Quarter 3 STAR

(4) The Generator Deactivation Assessment for this facility was included in the 2021 Quarter 1 STAR

(5) The Generator Deactivation Assessment for this facility was included in the 2022 Quarter 1 STAR

(6) This table only includes units that have entered into IIFO or have completed the generator deactivation process.

Generator Return-to-Service

Generator Name	Zone	MW (Nameplate)	Returned to Service	STAR Assessment	Notes
Hudson Ave 3	J	16.3	10-Jul-20	2020 Q4	1

Notes

1. This generator status changes May 2023 to comply with the DEC Peaker Rule

Generation Additions

Queue	Proposed Generator Project	Zone	Prior STAR COD	Current STAR COD (if changed from prior STAR)	Requested CRIS (MW)	Summer (MW)	STAR Assessment
387	Cassadaga Wind	A	In-Service	-	126.0	126.5	2020 Q3
396	Baron Winds	C	12/2023	-	300.0	238.4	2020 Q3
422	Eight Point Wind Energy Center	B	09/2022	-	101.2	101.8	2020 Q3
505	Ball Hill Wind	A	12/2022	11/2022	100.0	100.0	2020 Q3
430	Cedar Rapids Transmission Upgrade	D	10/2021	In-Service	80.0	N/A	2020 Q3
546	Roaring Brook Wind	E	In-Service	-	79.7	78.0	2020 Q3
678	Calverton Solar Energy Center	K	12/2020	6/2022	22.9	22.9	2020 Q3
758	Sithe Independence	C	In-Service	-	56.6	10.9 (2)	2020 Q4 (1)
N/A	Ontario Landfill	B	In-Service	-	N/A	3.6	2021 Q3
N/A	Fulton County Landfill	F	In-Service	-	N/A	3.2	2021 Q3
N/A	Dahowa Hydroelectric	F	In-Service	-	N/A	10.5	2021 Q3
N/A	Fenner Wind	C	06/2021	-	N/A	30.0	2021 Q3
N/A	Bowline 1	G	06/2021	-	N/A	16.3	2021 Q3
N/A	Bowline 2	G	06/2021	-	N/A	7.6	2021 Q3
0564	Rock District Solar	F	12/2022	-	N/A	20.0	2021 Q3
0768	Janis Solar	C	04/2022	-	N/A	20.0	2021 Q3
0513	Orangeville Battery	C	In-Service	-	N/A	20.0	2021 Q3
0775	Puckett Solar	E	04/2022	-	N/A	20.0	2021 Q3
0565	Tayandenega Solar	F	10/2022	-	N/A	20.0	2021 Q3
0589	North Country Solar	E	09/2022	Not Included (3)	N/A	15.0	2021 Q3

Generation Additions (continued)

Queue	Proposed Generator Project	Zone	Prior STAR COD	Current STAR COD (if changed from prior STAR)	Requested CRIS (MW)	Summer (MW)	STAR Assessment
0570	Albany County 1	F	11/2021	12/2022	N/A	20.0	2021 Q3
0598	Albany County 2	F	11/2021	12/2022	N/A	20.0	2021 Q3
0731	Branscomb Solar	F	In-Service	-	N/A	20.0	2021 Q3
0730	Darby Solar	F	11/2021	12/2022	N/A	20.0	2021 Q3
0735	ELP Stillwater Solar	F	11/2021	9/2022	N/A	20.0	2021 Q3
0638	Pattersonville	F	11/2021	12/2022	N/A	20.0	2021 Q3
0572	Greene County 1	G	11/2021	1/2023	N/A	20.0	2021 Q3
0573	Greene County 2	G	11/2021	3/2023	N/A	10.0	2021 Q3
0682	Grissom Solar	F	12/2021	6/2022	N/A	20.0	2021 Q3
0748	Regan Solar	F	12/2021	6/2022	N/A	20.0	2021 Q3
0670	Skyline Solar	E	04/2022	-	N/A	20.0	2021 Q3
0584	Dog Corners Solar	C	05/2022	-	N/A	20.0	2021 Q3
0545	Sky High Solar	C	08/2022	6/2023	N/A	20.0	2021 Q3
0531	Number 3 Wind Energy	E	10/2022	-	N/A	103.9	2021 Q3
0667	Bakerstand Solar	A	10/2022	-	N/A	20.0	2021 Q3
0666	Martin Solar	A	10/2022	-	N/A	20.0	2021 Q3
0592	Niagara Solar	B	05/2023	-	N/A	20.0	2021 Q3
0590	Scipio Solar	C	05/2023	-	N/A	18.0	2021 Q3
0586	Watkins Road Solar	E	06/2023	-	N/A	20.0	2021 Q3

Notes

- (1) CRIS increase for this unit was included in the 2021 Q4 STAR. The Summer MW increase was included in the 2021 Q3 STAR.
- (2) MW increase has an in-service date of March 2022.
- (3) Project withdrew from NYISO Interconnection Queue

Existing Transmission Facilities Modeled Out-of-Service

From	To	kV	ID	Out-of-Service Through	
				Prior STAR	Current STAR
Marion	Farragut	345	B3402	Long-Term	
Marion	Farragut	345	C3403	Long-Term	
Moses	St. Lawrence	230	L33P	May-22	07/2022
Plattsburg (1)	Plattsburg	230/115	AT1	12/2022	
Moses	Moses	230/115	AT2	12/2022	
Newbridge	Newbridge	345/138	BK1	08/2022	
Sprain Brook	East Garden City	345	Y49	10/2/2022 through 5/31/2023	

Notes

(1) A spare transformer is placed in-service during the outage

Changes to Planned Transmission Assumptions

- The table below presents the Con Edison series reactor assumptions

Terminals		ID	kV	Prior to Summer 2023	Starting Summer 2023
Dunwoodie	Mott Haven	71	345	By-Passed	In-Service
Dunwoodie	Mott Haven	72	345	By-Passed	In-Service
Sprainbrook	W. 49th Street	M51	345	By-Passed	In-Service
Sprainbrook	W. 49th Street	M52	345	By-Passed	In-Service
Farragut	Gowanus	41	345	In-Service	By-Passed
Farragut	Gowanus	42	345	In-Service	By-Passed
Sprainbrook	East Garden City	Y49	345	In-Service	By-Passed

Changes to Planned Transmission Assumptions

- Changes to firm Transmission Owner transmission plans are captured in Section VII of the 2021 Load and Capacity Data report ([here](#))
- A document containing the firm transmission plans (from the 2021 Load and Capacity Data Report Section VII) included in the 2022 Quarter 1 STAR Appendix C (Figure 15) is provided as a reference for this presentation.

Changes to Planned Transmission Assumptions

- Updates to local transmission plans not included in the 2021 Load and Capacity Data report but that have been included in prior STARs are listed below:

From Bus	To Bus	ID	Voltage (kV)	Project Description	Planned In-Service Date
Clay	Volney	6	345	Upgrade terminal equipment	6/2022
Clay	Woodard	17	115	3% series reactor	12/2023
Lockport	Mortimer	103/104	115	Reconductor/Reconfigure 4 spans of Lockport/Mortimer 103/104	8/2022
Lockport	Lockport	R264	115	Install R264 at Lockport for Line 108 and operate as alternate breaker for Line 108 at Lockport	1/2023

2020 RNA Major Assumptions

2020 RNA: Summer Peak Load Forecast Assumptions

High Load Scenario, Baseline and Adjusted Summer Peak Forecast

Annual MW	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2020 High Load Scenario ¹	32,452	32,502	32,743	32,611	32,623	32,641	32,863	33,163	33,562	33,976	34,380
+ 2020 Solar PV (Impact on High Load)	539	658	779	904	1,006	1,101	1,176	1,229	1,260	1,271	1,268
2020 RNA High Load Scenario Case ³	32,991	33,160	33,522	33,515	33,629	33,742	34,039	34,392	34,822	35,247	35,648
2020 Gold Book Baseline ²	32,296	32,129	32,128	31,918	31,838	31,711	31,670	31,673	31,756	31,865	31,992
+ 2020 Solar PV (Impact on Baseline)	555	707	841	986	1,102	1,204	1,287	1,351	1,392	1,411	1,411
2020 RNA Base Case ³	32,851	32,836	32,969	32,904	32,940	32,915	32,957	33,024	33,148	33,276	33,403

1. High Load forecast from 2020 Gold Book
2. The transmission security power flow RNA Base Cases use this Gold Book Baseline forecast
3. For the resource adequacy (RA) study RNA Base Case, the 2020 Gold Book Baseline and High Load forecast were modified by removing the behind-the-meter (BtM) solar PV impacts in order to model the solar PV explicitly as a generation resource to account for the intermittent nature of its availability

Note: The 2020 Gold Book contains additional details on the load forecast: <https://www.nyiso.com/documents/20142/2226333/2020-Gold-Book-Final-Public.pdf>

Comparison of Base Case Peak Forecasts - 2018 & 2020 RNA (MW)

Annual MW	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2018 RNA Base Case ¹	33,344	33,423	33,318	33,225	33,182	33,173	33,204	33,262	33,332	33,420	33,507	NA	NA
2020 RNA Base Case ¹			32,851	32,836	32,969	32,904	32,940	32,915	32,957	33,024	33,148	33,276	33,403
Change from 2020 RNA	NA	NA	-467	-389	-213	-269	-264	-347	-375	-396	-359	NA	NA

¹ For the resource adequacy study, the Gold Book baseline load forecast was modified by removing the behind-the-meter solar PV impacts in order to model the solar PV explicitly as a generation resource to account for the intermittent nature of its availability

2020 Gold Book Load Forecast Components

Year	(a) End-Use Peak Demand	(b) (-) EE and C&S	(c) (-) Solar PV, BTM	(d) (-) Non-Solar DG, BTM	(e) (-) BTM Storage Peak Reductions	(f) (+) EV Peak Demand	(g) (+) Non-EV Electrification	(h) =a-b-c-d-e+f+g Baseline Summer Peak Forecast
2021	33,599	591	707	251	14	68	25	32,129
2022	33,978	943	841	189	26	103	46	32,128
2023	34,220	1,322	986	169	44	147	72	31,918
2024	34,555	1,709	1,102	148	63	201	104	31,838
2025	34,861	2,108	1,204	154	91	261	146	31,711
2026	35,208	2,488	1,287	158	125	333	187	31,670
2027	35,524	2,825	1,351	164	159	418	230	31,673
2028	35,848	3,116	1,392	170	206	513	279	31,756
2029	36,108	3,360	1,411	174	250	625	327	31,865
2030	36,324	3,579	1,411	177	292	748	379	31,992

2020 RNA: Inclusion Rules Application

- **Proposed generation and transmission to be included:**
 - Next slide contains a list of added projects
- **Generation deactivations: all plant deactivations listed in the 2020 Gold Book Section IV are modeled out of service in the RNA Base Case**
 - Certain peaker units listed in Table IV-6 are assumed out-of-service during summer ozone season only (additional details in this presentation)
- **Proposed Local Transmission Owner Plans (LTP) to be included:**
 - All BPTF LTPs listed in the 2020 GB Section VII as firm, with consideration for the in-service date
 - All non-BPTF LTPs listed by the Transmission Owner as firm
- **Existing transmission facilities modeled out-of-service include:**
 - Con Edison's B3402 and C3403 345 kV cables for the entire study period

Proposed Projects (Additions) Included in the 2020 RNA Base Case

also included in the 2018-2019 RPP Base Cases					
Project Types	Queue #	Project Name	SP MW	Interconnection Status	2020RNA COD
Large Gens	387	Cassadaga Wind	126.5	CY17	12/2021
	396	Baron Winds	238.4	CY17	12/2021
	422	Eight Point Wind Energy Center	101.8	CY17	12/2021
	505	Ball Hill Wind	100.0	CY17	12/2022
	546	Roaring Brook Wind	79.7	CY19	12/2021
	678	Calverton Solar Energy Center	22.9	CY19	12/2021
Regulated Transmission Solutions	Q545A	Empire State Line	n/a	completed TIP Facility Study (Western NY PPTPP)	6/2022
	556	Segment A Double Circuit		TIP Facility Study in progress (AC PPTPP)	12/2023
	543	Segment B Knickerbocker-Pleasant Valley 345 kV		TIP Facility Study in progress (AC PPTPP)	12/2023
	430	Cedar Rapids Transmission Upgrade		CY17	10/2021
System Deliverability		Leeds-Hurley SDU	n/a	SDU triggered for construction in CY11	summer 2021

Acronyms:

CYxx: (Interconnection) Class Year (Facilities Studies) + last 2 digits of the year

TIP: Transmission Interconnection Process

AC PPTPP: Alternating Current Public Policy Transmission Planning Process

COD: Commercial Operation Date

Generation Additions by Year

Summer of Year	New Unit Additions	Zone	MW (Summer)	Total Additions
Y2021	-	-	0	0
Y2022	Cassadaga Wind	A	126	126
Y2022	Baron Winds	C	238	364
Y2022	Eight Point Wind Energy Center	B	101	466
Y2022	Roaring Brook Wind	E	80	545
Y2022	Calverton Solar Energy Center	K	23	568
Y2023	Ball Hill Wind	A	100	668
Y2024	-	-	0	668
Y2025	-	-	0	668
Y2026	-	-	0	668
Y2027	-	-	0	668
Y2028	-	-	0	668
Y2029	-	-	0	668
Y2030	-	-	0	668

Generation Deactivations

Notes:

*Consistent with deactivation dates

Other notes in this table are from the 2020 Gold Book, posted [here](#)

change in status

2020 GB Table	Owner/ Operator	Plant Name	Zone	CRIS	2020 RNA Base Case Status*	2018 RPP Base Case Status	
Table IV-3: Deactivated Units with Unexpired CRIS Rights Not Listed in Existing Capacity Table III-2	International Paper Company	Ticonderoga ⁽⁴⁾	F	7.6	out	out	
	Helix Ravenswood, LLC	Ravenswood 09	J	21.7	out	out	
	Binghamton BOP, LLC	Binghamton	C	43.8	out	out	
	Helix Ravenswood, LLC	Ravenswood 2-1	J	40.4	out	out	
		Ravenswood 2-2	J	37.6			
		Ravenswood 2-3	J	39.2			
		Ravenswood 2-4	J	39.8			
		Ravenswood 3-1	J	40.5			
		Ravenswood 3-2	J	38.1			
	Ravenswood 3-4	J	35.8				
Cayuga Operating Company, LLC	Cayuga 2 ⁽⁵⁾	C	154.7	out	out		
Lyonsdale Biomass, LLC	Lyonsdale	E	20.2	out	in		
Table IV-4: Deactivated Units Listed in Existing Capacity Table III-2	Exelon Generation Company LLC	Monroe Livingston	B	2.4	out	in	
	Innovative Energy Systems, Inc.	Steuben County LF	C	3.2	out	in	
	Consolidated Edison Co. of NY, Inc	Hudson Ave 4	J	13.9	out	in	
	New York State Elec. & Gas Corp.	Auburn - State St	C	5.8	out	in	
	Cayuga Operating Company, LLC	Cayuga 1 ⁽³⁾	C	154.1	out	in	
	Consolidated Edison Co. of NY, Inc	Hudson Ave 3	J	16.0	out	in	
Table IV-5: Notices of Proposed Deactivations as of March 15, 2020	Albany Energy, LLC	Albany LFGE	F	4.5	out	in	
	Somerset Operating Company, LLC	Somerset	A	686.5	out	in	
	National Grid	West Babylon 4	K	49.0	out	in	
		Entergy Nuclear Power Marketing, LLC	Indian Point 2	H	1,026.5	out	in
			Indian Point 3		1,040.4		

Peaker Rule Status Change

Notes:

*Consistent with status change dates

** Certain peakers will be out of service in the ozone season only (details in following slides)

Other notes in this table are from the 2020GB, posted [here](#)

change in status

2020 GB Table	Owner/ Operator	Plant Name	Zone	CRIS	2020 RNA Base Case Status*	2018 RPP Base Case Status
Table IV-6: Proposed Status Change to Comply with DEC Peaker Rule**	Central Hudson Gas & Elec. Corp.	Coxsackie GT	G	19.9	out	in
		South Cairo	G	19.8		
	Consolidated Edison Co. of NY, Inc.	74 St. GT 1 & 2	J	39.1	out	in
		Hudson Ave 5		15.1		
		59 St. GT 1		15.4		
	Helix Ravenswood, LLC	Ravenswood 01	J	8.8	out	in
		Ravenswood 10		21.2		
		Ravenswood 11		20.2		
	National Grid	Glenwood GT 1	K	14.6	out	in
		Northport GT		13.8		
		Port Jefferson GT 01		14.1		
	NRG Power Marketing, LLC	Astoria GT 2-1, 2-2, 2-3, 2-4	J	165.8	out	in
		Astoria GT 3-1, 3-2, 3-3, 3-4		170.7		
		Astoria GT 4-1, 4-2, 4-3, 4-4		167.9		
		Arthur Kill GT1		16.5		
	Astoria Generating Company, L.P.	Gowanus 1-1 through 1-8	J	138.7	out	in
Gowanus 4-1 through 4-8		140.1				
Astoria GT 01		15.7				
Gowanus 2-1 through 2-8		152.8				
Gowanus 3-1 through 3-8		146.8				
Narrows 1-1 through 2-8		309.1				

Deactivations and Peaker Rule Status Change by Year

Summer of Year	Retired Unit	Zone	MW (Summer)	Total Removal
Y2021	Somerset	A	676	676
Y2021	Albany LFG	F	5	681
Y2021	Indian Point 2	H	1,012	1,692
Y2021	West Babylon	K	49	1,741
Y2021	Indian Point 3	H	1,036	2,778
Y2022	-	-	0	2,778
Y2023	Zone A	A	0	2,778
	Zone G	G	38	2,816
	Zone J	J	773	3,589
	Zone K	K	36	3,625
Y2024	-	-	0	3,625
Y2025	Zone A	A	0	3,625
	Zone G	G	0	3,625
	Zone J	J	605	4,230
	Zone K	K	0	4,230
Y2026	-	-		4,230
Y2027	-	-		4,230
Y2028	-	-		4,230
Y2029	-	-		4,230
Y2030	-	-		4,230

Notes:

- 'MW Summer' is min(CRIS, DMNC) for individual units
- Plants impacted by the DEC Peaker Rule not specifically listed by name have not entered into the deactivation process identified in OATT Attachment FF at the time of this presentation
- Additional Peaker Rule details are in the following slides

DEC Peaker Rule Impacts on the 2020 RNA Base Case

DEC Peaker Rule Background

- New York State Department of Environmental Conservation (DEC) adopted a regulation to limit nitrogen oxides (NO_x) emissions from simple-cycle combustion turbines (“Peaking Units”) (referred to as the “Peaker Rule”)
- The Peaker Rule required all impacted plant owners to file compliance plans by March 2, 2020
- NYISO considered generators’ compliance plans in the development of the 2020 Reliability Needs Assessment Base Case
- The following slides show zonal breakdown of the same related information from slide 16 (*i.e.* 2020 GB Table iV-6)

Status Change due to DEC Peaker Rule, Zone G

Zone G											
Units	Nameplate MW	CRIS (MW)		Capability (MW)		2023 Ozone Season	2023 non-Ozone Season	2024 Ozone Season	2024 non-Ozone Season	2025 Ozone Season	2025 non-Ozone Season
		Summer	Winter	Summer	Winter	May 2023 - September 2023	October 2023 - April 2024	May 2024 - September 2024	October 2024 - April 2025	May 2025 - September 2025	October 2025 - April 2026
Coxsackie GT	22	20	26	20	24	0/S	0/S	0/S	0/S	0/S	0/S
South Cairo	22	20	26	18	23	0/S	0/S	0/S	0/S	0/S	0/S
Unavailable MW = Impacted MW (Summer Capability)	43	40	52	38	46						

- Notes:
1. The service pattern in the last two columns repeats in subsequent years of the RNA Study Period
 2. Other compliance plans were submitted in addition to what is shown on this table. The table lists the plants with compliance plans that resulted in a change of status (*i.e.*, as also listed in the 2020 Gold Book Table iV-6)

Status Change due to DEC Peaker Rule, Zone J

Zone J		O/S - Out-of-service	I/S - In-service								
Units	Nameplate MW	CRIS (MW)		Capability (MW)		2023 Ozone Season	2023 non-Ozone Season	2024 Ozone Season	2024 non-Ozone Season	2025 Ozone Season	2025 non-Ozone Season
		Summer	Winter	Summer	Winter	May 2023 - September 2023	October 2023 - April 2024	May 2024 - September 2024	October 2024 - April 2025	May 2025 - September 2025	October 2025 - April 2026
Astoria GT1	16	16	21	14	19	I/S	I/S	I/S	I/S	O/S	I/S
Gowanus 1&4 (1-1 through 1-8, and 4-1 through 4-4)	320	279	364	274	365	O/S	I/S	O/S	I/S	O/S	I/S
Gowanus 2&3 (2-1 through 2-8 and 3-1 through 3-8)	320	300	391	278	373	I/S	I/S	I/S	I/S	O/S	I/S
Narrows 1&2 (1-1 through 1-8, and 2-1 through 2-8)	352	309	404	287	380	I/S	I/S	I/S	I/S	O/S	I/S
Ravenswood GTs (01, 10, 11)	69	50	64	41	57	O/S	O/S	O/S	O/S	O/S	O/S
Arthur Kill GT1	20	17	22	12	15	I/S	I/S	I/S	I/S	O/S	O/S
Astoria GTs (2-1 through 2-4, 3-1 through 3-4, 4-1 through 4-4)	558	504	621	415	543	O/S	O/S	O/S	O/S	O/S	O/S
Con Ed 59th St	17	15	20	16	20	I/S	I/S	I/S	I/S	O/S	O/S
Con Ed 74th St	37	39	49	35	41	O/S	O/S	O/S	O/S	O/S	O/S
Con Ed Hudson Ave 5	16	15	20	14	20	O/S	O/S	O/S	O/S	O/S	O/S
Unavailable MW (Summer Capability)						779	506	779	506	1,385	533
Available MW (Summer Capability)						606	880	606	880	0	852
Impacted MW	1,725	1,544	1,975	1,385	1,834						

Notes:

1. The service pattern in the last two columns repeats in subsequent years of the RNA Study Period
2. Other compliance plans were submitted in addition to what is shown on this table. The table lists the plants with compliance plans that resulted in a change of status (i.e., as also listed in the 2020 Gold Book Table iv-6)

Status Change due to DEC Peaker Rule, Zone K

Zone K		O/S - Out-of-service	I/S - In-service								
Units	Nameplate MW	CRIS (MW)		Capability (MW)		2023 Ozone Season	2023 non-Ozone Season	2024 Ozone Season	2024 non-Ozone Season	2025 Ozone Season	2025 non-Ozone Season
		Summer	Winter	Summer	Winter	May 2023 - September 2023	October 2023 - April 2024	May 2024 - September 2024	October 2024 - April 2025	May 2025 - September 2025	October 2025 - April 2026
Glenwood GT1	16	14.6	19.1	11.4	14.5	O/S	O/S	O/S	O/S	O/S	O/S
Northport GT	16	13.8	18.0	11.7	15.1	O/S	O/S	O/S	O/S	O/S	O/S
Port Jefferson GT1	16	14.1	18.4	12.9	16.6	O/S	O/S	O/S	O/S	O/S	O/S
Unavailable MW = Impacted MW	48	42.5	55.5	36.0	46.2						

Notes:

1. The service pattern in the last two columns repeats in subsequent years of the RNA Study Period
2. Other compliance plans were submitted in addition to what is shown on this table. The table lists the plants with compliance plans that resulted in a change of status (*i.e.*, as also listed in the 2020 Gold Book Table iV-6)

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