New York ISO
Independent System Operator

Short-Term Assessment of Reliability: 2023 Q3 Key Study Assumptions

Keith Burrell

Manager, Transmission Studies

ESPWG/TPAS/LFTF

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STAR Process Information

- The NYISO is assessing the reliability of the Bulk Power Transmission Facilities (BPTF)
- The NYISO posted the 2023 Q2 STAR on July 14, 2023
  - This assessment identified a short-term reliability process need (see next slide)
- The NYISO plans to post the 2023 Q3 STAR by October 13, 2023
- The 2023 Q4 STAR will commence on October 15, 2023

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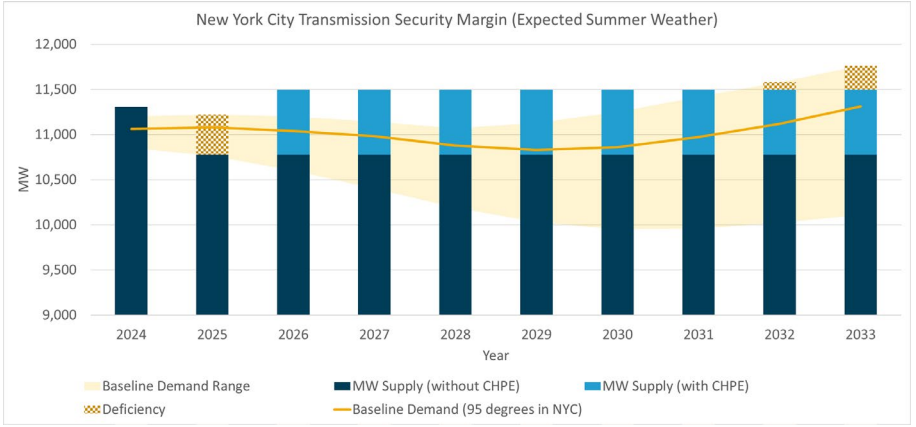
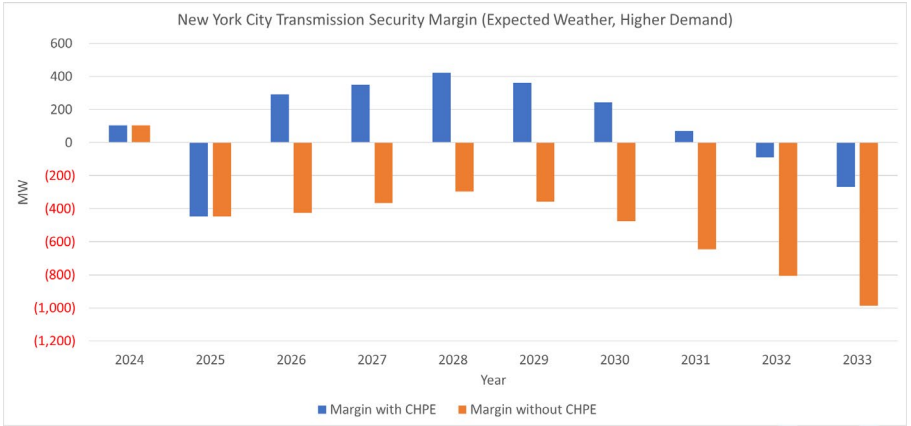
2023 Q2 STAR Need

- **Reliability needs were identified beginning in summer 2025 within New York City**
  - The New York City zone is deficient by as much as 446 MW for a duration of nine hours on the peak day during expected weather conditions (95 degrees Fahrenheit)
- **Needs are driven by a combination of forecasted demand increases and the assumed unavailability of certain generators within New York City affected by the DEC Peaker Rule**
  - The baseline summer coincident peak demand forecast for New York City (Zone J) increased by 294 MW between the 2022 Load and Capacity Data Report ("Gold Book") and the 2023 Gold Book
  - As of May 1, 2023, 1,027 MW of affected peakers have deactivated or limited their operation. An additional 590 MW of peakers are expected to become unavailable for summer 2025, all of which are in New York City





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Impact of Load Forecast Scenario in Q2 STAR

- As an informational scenario, the Q2 STAR included an evaluation of the impact of additional large loads in western and central New York

Informational Scenario: Interconnecting Large Loads Forecast Delta to Q2 STAR - Summer Peak Demand by Zone (MW)

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2023	0	0	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	37	0	0	0	0	0	0	37
2025	0	0	190	0	50	0	0	0	0	0	0	240
2026	0	0	380	0	55	0	0	0	0	0	0	435
2027	0	0	430	44	55	0	0	0	0	0	0	529
2028	0	0	430	72	55	0	0	0	0	0	0	557
2029	0	0	430	100	55	0	0	0	0	0	0	585
2030	0	0	480	100	55	0	0	0	0	0	0	635
2031	0	0	480	100	55	0	0	0	0	0	0	635
2032	0	0	480	100	55	0	0	0	0	0	0	635
2033	0	0	480	100	55	0	0	0	0	0	0	635

Informational Scenario: Interconnecting Large Loads Forecast Delta to Q2 STAR - Winter Peak Demand by Zone (MW)

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2023	0	0	0	0	30	0	0	0	0	0	0	30
2024	0	0	100	0	45	0	0	0	0	0	0	145
2025	0	0	290	0	55	0	0	0	0	0	0	345
2026	0	0	410	0	55	0	0	0	0	0	0	465
2027	0	0	430	44	55	0	0	0	0	0	0	529
2028	0	0	430	72	55	0	0	0	0	0	0	557
2029	0	0	460	100	55	0	0	0	0	0	0	615
2030	0	0	480	100	55	0	0	0	0	0	0	635
2031	0	0	480	100	55	0	0	0	0	0	0	635
2032	0	0	480	100	55	0	0	0	0	0	0	635
2033	0	0	480	100	55	0	0	0	0	0	0	635

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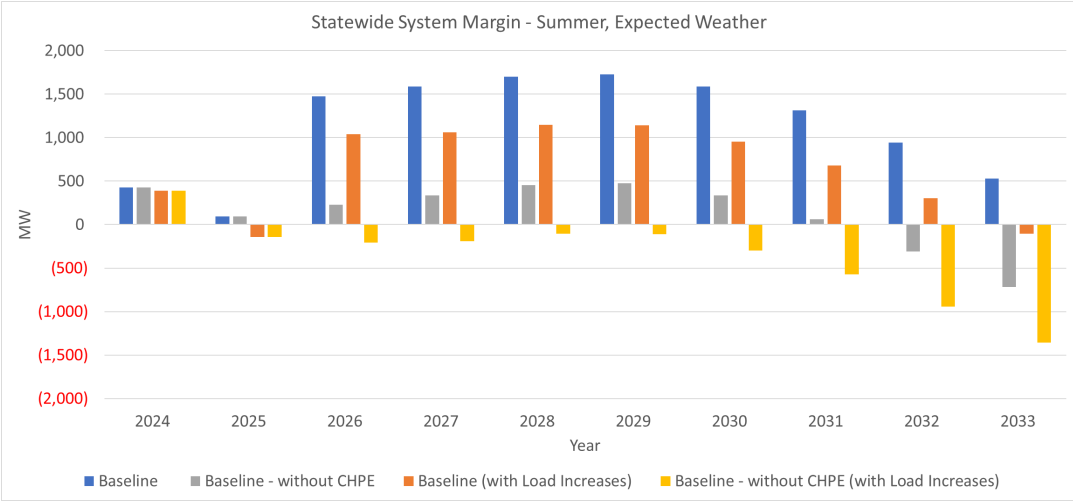
Impact of Load Forecast Scenario in Q2 STAR

- From the informational scenario in the 2023 Q2 STAR, the margin in 2025 is projected to be deficient by 145 MW
  - With CHPE in-service by summer 2026 the margin is sufficient through year 2032
  - In 2033 the margin is deficient by 104 MW
- Without CHPE and with the load increases, the statewide system margin is deficient for all years 2025 through 2033



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Study Assumptions

- **The most recent base cases from the Reliability Planning Process are those used for the 2022 Reliability Needs Assessment (RNA)**
  - The 2022 RNA Base Case and the inclusion rules application (link here) presented at the April 26, 2022 ESPWG/TPAS are provided at the end of this presentation for reference
  - The 2022 RNA key findings were discussed at the October 3, 2022 TPAS/ESPWG (here) as well as the October 13, 2022 OC (here)
  - The 2022 RNA report is posted on the NYISO website (here)
- **Study Period**
  - July 15, 2023 (STAR Start Date) through July 15, 2028

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Updated Study Assumptions for 2023 Q3 STAR

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Updated Generation Assumptions

- **The changes to generation assumptions compared to the 2023 Quarter 2 STAR include the following:**
  - Generator deactivations:
    - Western NY Wind (Zone B, 6.6 MW (nameplate)), proposing to Retire on May 1, 2023
      - As this is less than 91 days after the STAR Start Date, the earliest possible retirement date for this unit is October 14, 2023
    - Ravenswood 01 (Zone J, 18.6 MW (nameplate)), proposing to Retire on May 1, 2023
    - Ravenswood 11 (Zone J, 25 MW (nameplate)), proposing to Retire on May 1, 2023
      - For both Ravenswood 1 and 11, as the proposed retirement date is less than 91 days after the STAR Start Date, the earliest possible retirement date for these units is October 14, 2023
    - Both Ravenswood 01 and 11 units are currently in an IIFO. The deactivations were assessed in the 2022 Quarter 1 STAR; no need was identified.
  - Generator return-to-service:
    - No changes from prior STAR
  - Additions:
    - There are several additions beyond those included in the 2022 RNA Base Case
      - These additions are listed on the next slide
    - Since the prior STAR, the following units have entered service:
      - KCE NY6 ESR (Zone A), April 19, 2023
      - Darby Solar (Zone F), May 23, 2023
  - Other:
    - The retirement for the Astoria GT01 unit had been assessed in the 2022 Q4 STAR; however, the unit did not deactivate as it performed testing to comply with the DEC peaker rule through 5/1/2025
    - Northport GT, Port Jefferson GT01, and 74th St. GT 1 and GT 2 are no longer subject to NYISO dispatch, these units are used for local reliability only

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Updated Generation Assumptions

- The changes to generation assumptions compared to the 2023 Quarter 2 STAR include the following:
  - Additions:

NYISO Interconnection Queue #	Project Name/(Owner)	Zone	Point of Interconnection	Type	COD or I/S Date	Summer Peak MW
833	Dolan Solar (Dolan Solar, LLC)	F	Battenkill - Mohican 115kV	S	09/2023	20.0
706	High Bridge Wind (High Brigde Wind, LLC)	E	E. Norwich - Jennison 115kV	W	11/2023	100.8
832	CS Hawthorn Solar (Granada Solar, LLC)	F	North Troy - Hoosick 115kV	S	02/2024	20.0
828	Valley Solar (SunEast Valley Solar LLC)	C	Owego 34.5kV Substation	S	11/2024	20.0
629	Silver Lake Solar (Silver Lake Solar, LLC)	C	South Perry 34.5kV	S	11/2024	24.9
591	Highview Solar (SunEast Highview Solar LLC)	C	South Perry 34.5kV	S	12/2024	20.0

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Transmission Assumptions

- **The changes to transmission assumptions compared to the prior STAR include:**
  - Existing transmission Outages

From	To	kV	ID	Out-of-Service Through	
				Prior STAR	Current STAR
Plattsburg (1)	Plattsburg	230/115	AT1	4/2023	9/2023
Moses	Moses	230/115	AT2	5/2023	9/2023
Moses	St. Lawrence	230	L34P	09/2023	11/2023

Notes

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

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Transmission Assumptions continued

- **The changes to transmission assumptions compared to the prior STAR include:**
  - Proposed transmission
    - With the exception of the following, all firm transmission plans captured in the 2023 Gold Book are included
      - Con Edison Mott Haven 345/138/13 kV spare transformer (S2029)
      - NYSEG Coopers Corners installation of a third 345/115 kV transformer and second 115/34.5 kV transformer and corresponding station reconfigurations (S2031)
    - Transmission Owner LTPs presented at the May and June ESPWG/TPAS meetings including:
      - Con Edison's Brooklyn clean energy hub (S2028) (here)
      - National Grid's Indian River-Lyme Jct (N. Watertown) new transmission line (here) (S2027)
      - NYPA transmission plan update (here) (various dates)

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Base Case Load Assumptions

- **For the purposes of the transmission security margin evaluations this study utilizes the final 10-year peak forecasts from the 2023 Gold Book**
  - The transmission security margins account for uncertainty in the forecast by incorporating the lower and higher bounds as a range of forecasted conditions during expected weather, specified in the Gold Book as the policy scenario forecasts
- **The list of additional load projects has changed from the prior STAR and includes**
  - The load projects from the prior STAR:
    - Q0580 – WNY STAMP
    - Q0776 – Greenidge Load
    - Q0849 – Somerset Load
    - Q0580 – Cayuga load
    - Q0979 – North Country Data Center (load increase)
  - Additional Load projects included starting in the Q3 STAR:
    - Q1536 – White Pine Phase 1 (Micron)
    - Q1446 – Massena Green Hydrogen (Air Products and Chemicals)

Interconnecting Large Loads Forecast - Summer Peak Demand by Zone, Q2 STAR (MW)

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2023	95	0	0	166	0	0	0	0	0	0	0	261
2024	110	151	50	169	0	0	0	0	0	0	0	480
2025	130	175	50	169	0	0	0	0	0	0	0	524
2026	150	200	50	169	0	0	0	0	0	0	0	569
2027	170	200	50	169	0	0	0	0	0	0	0	589
2028	170	200	50	169	0	0	0	0	0	0	0	589
2029	170	200	50	169	0	0	0	0	0	0	0	589
2030	170	200	50	169	0	0	0	0	0	0	0	589
2031	170	200	50	169	0	0	0	0	0	0	0	589
2032	170	200	50	169	0	0	0	0	0	0	0	589
2033	170	200	50	169	0	0	0	0	0	0	0	589

Interconnecting Large Loads Forecast - Summer Peak Demand by Zone, Q3 STAR (MW)

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2023	95	0	0	166	0	0	0	0	0	0	0	261
2024	110	151	50	169	37	0	0	0	0	0	0	517
2025	130	175	240	169	50	0	0	0	0	0	0	764
2026	150	200	430	169	55	0	0	0	0	0	0	1,004
2027	170	200	480	213	55	0	0	0	0	0	0	1,118
2028	170	200	480	241	55	0	0	0	0	0	0	1,146
2029	170	200	480	269	55	0	0	0	0	0	0	1,174
2030	170	200	530	269	55	0	0	0	0	0	0	1,224
2031	170	200	530	269	55	0	0	0	0	0	0	1,224
2032	170	200	530	269	55	0	0	0	0	0	0	1,224
2033	170	200	530	269	55	0	0	0	0	0	0	1,224

Interconnecting Large Loads Forecast Delta to Q2 STAR - Summer Peak Demand by Zone (MW)

Year	A	B	C	D	E	F	G	H	I	J	K	NYCA
2023	0	0	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	37	0	0	0	0	0	0	37
2025	0	0	190	0	50	0	0	0	0	0	0	240
2026	0	0	380	0	55	0	0	0	0	0	0	435
2027	0	0	430	44	55	0	0	0	0	0	0	529
2028	0	0	430	72	55	0	0	0	0	0	0	557
2029	0	0	430	100	55	0	0	0	0	0	0	585
2030	0	0	480	100	55	0	0	0	0	0	0	635
2031	0	0	480	100	55	0	0	0	0	0	0	635
2032	0	0	480	100	55	0	0	0	0	0	0	635
2033	0	0	480	100	55	0	0	0	0	0	0	635

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Questions?

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Changes to Study Assumptions for Q3 2023 STAR: Compared to 2022 RNA Assumptions Included in the Prior STAR

DEC's Peaker Rule Assumptions

Items shown in blue text reflect status updates since the prior STAR.

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 (6) (7)	K	52.4	49.0	64.0	41.2	63.4	12/12/2020 (R)	Other
National Grid	Glenwood GT 01 (4) (7)	K	16.0	14.6	19.1	13.0	15.3	2/28/2021 (R)	2020 Q3
Helix Ravenswood, LLC	Ravenswood 11	J	25.0	20.2	25.7	16.1	22.4	12/1/2021 (IIFO)	2022 Q1
Helix Ravenswood, LLC	Ravenswood 01	J	18.6	8.8	11.5	7.7	11.1	1/1/2022 (IIFO)	2022 Q1
Astoria Generating Company, L.P.	Gowanus 1-1 through 1-8	J	160.0	138.7	181.1	133.1	182.2	11/1/2022 (R)	2022 Q2
Astoria Generating Company, L.P.	Gowanus 4-1 through 4-8	J	160.0	140.1	182.9	138.8	183.4	11/1/2022 (R)	2022 Q2
Consolidated Edison Co. of NY, Inc.	Hudson Ave 3	J	16.3	16.0	20.9	12.3	15.6	11/1/2022 (R)	2022 Q2
Consolidated Edison Co. of NY, Inc.	Hudson Ave 5	J	16.3	15.1	19.7	15.3	18.6	11/1/2022 (R)	2022 Q2
Central Hudson Gas & Elec. Corp.	Coxsackie GT (8)	G	21.6	21.6	26.0	19.0	23.6	5/1/2023	
Central Hudson Gas & Elec. Corp.	South Cairo (8)	G	21.6	19.8	25.9	18.7	23.1	5/1/2023	
Consolidated Edison Co. of NY, Inc.	74 St. GT 1 & 2 (10)	J	37.0	39.1	49.2	37.8	43.6	5/1/2023	2022 Q2
NRG Power Marketing, LLC	Astoria GT 2-1, 2-2, 2-3, 2-4	J	186.0	165.8	204.1	138.0	184.2	5/1/2023 (R)	2022 Q2
NRG Power Marketing, LLC	Astoria GT 3-1, 3-2, 3-3, 3-4	J	186.0	170.7	210.0	139.1	180.4	5/1/2023 (R)	2022 Q2
NRG Power Marketing, LLC	Astoria GT 4-1, 4-2, 4-3, 4-4	J	186.0	167.9	206.7	138.5	178.6	5/1/2023 (R)	2022 Q2
Helix Ravenswood, LLC	Ravenswood 10	J	25.0	21.2	27.0	16.1	20.3	5/1/2023 (R)	2022 Q3
National Grid	Glenwood GT 03 (3) (4)	K	55.0	54.7	71.5	49.9	67.2	5/1/2023	
National Grid	Northport GT (9)	K	16.0	13.8	18.0	8.3	12.7	5/1/2023	
National Grid	Port Jefferson GT 01 (9)	K	16.0	14.1	18.4	13.0	15.3	5/1/2023	
National Grid	Shoreham 1 (3) (4)	K	52.9	48.9	63.9	41.3	61.4	5/1/2023	
National Grid	Shoreham 2 (3) (4)	K	18.6	18.5	23.5	16.5	20.3	5/1/2023	
Astoria Generating Company, L.P.	Astoria GT 01	J	16.0	15.7	20.5	13.4	19.1	5/1/2025	2022 Q4
Consolidated Edison Co. of NY, Inc.	59 St. GT 1	J	17.1	15.4	20.1	13.1	18.8	5/1/2025	
NRG Power Marketing, LLC	Arthur Kill GT 1	J	20.0	16.5	21.6	12.3	15.8	5/1/2025	
Astoria Generating Company, L.P.	Gowanus 2-1 through 2-8 (5)	J	160.0	152.8	199.6	142.1	182.0	5/1/2025	
Astoria Generating Company, L.P.	Gowanus 3-1 through 3-8 (5)	J	160.0	146.8	191.7	136.9	179.9	5/1/2025	
Astoria Generating Company, L.P.	Narrows 1-1 through 2-8 (5)	J	352.0	309.1	403.6	285.9	369.2	5/1/2025	
	Prior to Summer 2022		112.0	92.6	120.3	78.0	112.2		
	Prior to Summer 2023		1,174.3	1,066.0	1,348.8	935.7	1,230.5		
	Prior to Summer 2025		725.1	656.3	857.1	603.7	784.8		
	Total		2,011.4	1,814.9	2,326.2	1,617.4	2,127.5		

Notes

1. MW values are from the 2023 Load and Capacity Data Report

2. 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)

3. Generator changed DEC peaker rule compliance plan as compared to the 2020 RNA and all STARs prior to 2021 Q3

4. 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

5. 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.

6. This unit was evaluated in a stand-alone generator deactivation assessment prior to the creation of the Short-Term Reliability Process

7. Unit operating as a load modifier

8. Central Hudson submitted notification to the DEC per part 227-3 of the peaker rule stating these units are needed for reliability. The most recent LTP update from Central Hudson notes the planned retirement of South Cairo and Coxsakie generators in December 2024. https://www.nyiso.com/documents/20142/26630522/Local-Transmission-Plan-2021.pdf/

9. On May 24, 2023 National Grid notified the New York State Public Service Commission that these units have been classified as black-start only units and are no longer subject to NYISO dispatch

10. Unit no longer subject to NYISO dispatch and is used for local reliability only

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Units that Have Completed the Generator Deactivation Process

Owner/ Operator	Plant Name	Zone	Nameplate (MW)	CRIS (MW)		Capability (MW)		Status	Deactivation Date (2)	STAR Evaluation (3)
				Summer	Winter	Summer	Winter			
International Paper Company	Ticonderoga (1)	F	9.0	7.6	7.5	9.5	9.8	I	5/1/2017	-
Helix Ravenswood, LLC	Ravenswood 2-4	J	42.9	39.8	50.6	30.7	41.6	I	4/1/2018	-
	Ravenswood 3-1	J	42.9	40.5	51.5	31.9	40.8	I	4/1/2018	-
	Ravenswood 3-2	J	42.9	38.1	48.5	29.4	40.3	I	4/1/2018	-
	Ravenswood 3-4	J	42.9	35.8	45.5	31.2	40.8	I	4/1/2018	-
Exelon Generation Company LLC	Monroe Livingston	B	2.4	2.4	2.4	2.4	2.4	R	9/1/2019	-
Innovative Energy Systems, Inc.	Steuben County LF	C	3.2	3.2	3.2	3.2	3.2	R	9/1/2019	-
Consolidated Edison Co. of NY, Inc	Hudson Ave 4	J	16.3	13.9	18.2	14.0	16.3	R	9/10/2019	-
New York State Elec. & Gas Corp.	Auburn - State St	C	7.4	5.8	6.2	4.1	7.3	R	10/1/2019	-
Somerset Operating Company, LLC	Somerset	A	655.1	686.5	686.5	676.4	684.4	R	3/12/2020	-
Entergy Nuclear Power Marketing, LLC	Indian Point 2	H	1,299.0	1,026.5	1,026.5	1,011.5	1,029.4	R	4/30/2020	-
Cayuga Operating Company, LLC	Cayuga 1	C	155.3	154.1	154.1	151.0	152.0	R	6/4/2020	-
Albany Energy, LLC	Albany LFGE	F	5.6	4.5	4.5	5.6	5.6	I	7/1/2020	2020 Q3
Entergy Nuclear Power Marketing, LLC	Indian Point 3	H	1,012.0	1,040.4	1,040.4	1,036.3	1,038.3	R	4/30/2021	-
Helix Ravenswood, LLC	Ravenswood GT 11	J	25.0	20.2	25.7	16.1	22.4	I	12/1/2021	2022 Q1
Helix Ravenswood, LLC	Ravenswood GT 1	J	18.6	8.8	11.5	7.7	11.1	I	1/1/2022	2022 Q1
Exelon Generation Company LLC	Madison County LF	E	1.6	1.6	1.6	1.6	1.6	I	4/1/2022	2022 Q2
Nassau Energy, LLC	Trigen CC	K	55.0	51.6	60.1	38.5	51.0	R	7/15/2022	2022 Q2
Consolidated Edison Co. of NY, Inc.	Hudson Ave 3	J	16.3	16.0	20.9	12.3	15.6	R	11/1/2022	2022 Q2
Consolidated Edison Co. of NY, Inc.	Hudson Ave 5	J	16.3	15.1	19.7	15.3	18.6	R	11/1/2022	2022 Q2
Astoria Generating Company, L.P.	Gowanus 1-1 through 1-8	J	160.0	138.7	181.1	133.1	182.2	R	11/1/2022	2022 Q2
Astoria Generating Company, L.P.	Gowanus 4-1 through 4-8	J	160.0	140.1	182.9	138.8	183.4	R	11/1/2022	2022 Q2
NRG Power Marketing LLC	Astoria GT 2-1	J	46.5	41.2	50.7	34.9	46.5	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 2-2	J	46.5	42.4	52.2	34.3	45.6	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 2-3	J	46.5	41.2	50.7	36.3	46.7	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 2-4	J	46.5	41.0	50.5	32.5	45.4	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 3-1	J	46.5	41.2	50.7	34.6	45.0	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 3-2	J	46.5	43.5	53.5	35.7	45.3	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 3-3	J	46.5	43.0	52.9	33.9	44.6	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 3-4	J	46.5	43.0	52.9	34.9	45.5	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 4-1	J	46.5	42.6	52.4	33.6	43.8	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 4-2	J	46.5	41.4	51.0	34.3	44.3	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 4-3	J	46.5	41.1	50.6	35.4	46.4	R	5/1/2023	2022 Q2
NRG Power Marketing LLC	Astoria GT 4-4	J	46.5	42.8	52.7	35.2	44.1	R	5/1/2023	2022 Q2
Helix Ravenswood, LLC	Ravenswood 10	J	25.0	21.2	27.0	16.1	20.3	R	5/1/2023	2022 Q3
		Total	4,372.7	4,016.8	4,296.9	3,832.3	4,161.6			

Notes

(1) Part of SCR program

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

(3) "-" denotes that the generator deactivation was assessed prior to the creation of the Short-Term Reliability Process

New York ISO

Proposed Generator Deactivations

Owner/ Operator	Plant Name (1)	Zone	Nameplate (MW)	CRIS (MW)		Capability (MW)		Status	Deactivation date (2)	STAR Evaluation
				Summer	Winter	Summer	Winter			
Consolidated Edison Co. of NY, Inc.	74 St. GT 1 & 2 (3)	J	37	39.1	49.2	39.3	45.2	R	5/1/2023	2022 Q2
Eastern Generation, LLC	Astoria GT 01 (4)	J	16	15.7	20.5	13.6	19.0	R	5/1/2023	2022 Q4
		Total	53	54.8	69.7	52.9	64.2			

Notes

(1) This table includes units that have proposed to Retire or enter Mothball Outage and have a completed generator deactivation notice but have yet to complete the generator deactivation process.

(2) Date in which the generator proposed Retire (R) or enter Mothball Outage (MO)

(3) Unit no longer subject to NYISO dispatch/used for local reliability only

(4) The unit did not deactivate as it performed testing to comply with the DEC peaker rule through 2025.

New York ISO

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	
Plattsburg (1)	Plattsburg	230/115	AT1	4/2023	9/2023
Moses	Moses	230/115	AT2	5/2023	9/2023
Moses	St. Lawrence	230	L34P	09/2023	11/2023
Stolle Rd	Stolle Rd	115	T11-52	12/2023	
E. 13th Street	E. 13th Street	345/69	BK17	12/2023	

Notes

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

New York ISO

Con Edison Series Reactor Assumptions

- The table below presents the Con Edison series reactor assumptions
- No changes to assumptions compared to the prior STAR or 2022 RNA Base Case

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

New York ISO

Changes to Planned Transmission Assumptions

- Changes to firm projects in the Transmission Owners' local transmission plans are captured in Section VII of the 2023 Load and Capacity Data Report (here)

New York ISO

The following slides are from the 2022 RNA Base Case and the Inclusion Rules Application and are included for reference

New York ISO

2022-2023 RPP Background

- **The 2022 Reliability Planning Process (RPP) starts with the 2022 Reliability Needs Assessment (2022 RNA) followed by the 2023-2032 Comprehensive System Plan (CRP)**
  - 2022 RNA Study Period: year 4 = 2026 through year 10 = 2032
  - Note: year 1 through year 5 are assessed quarterly in the Short-Term Reliability Process (STRP)
- **The RPP is part of the Comprehensive System Planning Process and is performed pursuant to the Attachment Y of the NYISO OATT; see Section 31.2.**
  - Additional implementation details, including recently updated RNA Base Case inclusion rules, are captured in the RPP Manual
- **2022 RNA will be based on the information from the Gold Book 2022, the 2022 FERC 715 filing (power flow cases and auxiliary files), historical data, and market participant data**
- **Reliability evaluations on the 2022 RNA Base Case: transmission security and resource adequacy**
  - NERC, NPCC, NYSRC Reliability Rules application on the Bulk Power Transmission Facilities (BPTFs)

New York ISO

2022 RNA Base Case Development Background

- **Based on the RNA Base Case, the NYISO identifies Reliability Needs of the New York State Bulk Power Transmission Facilities (BPTFs) in accordance with applicable Reliability Criteria (*i.e.*, NERC, NPCC, and NYSRC)**
- **2022 RNA Base Case:**
  - For the transmission security evaluations, the NYISO uses the 2022 FERC Form 715 filing and the information from the 2022 Gold Book as a starting point for developing the base case system models with the application of the inclusion rules.
  - For the resource adequacy evaluation, the models are developed starting with prior resource adequacy models, and are updated with information from the 2022 Gold Book and historical data, with the application of the inclusion rules. Information on modeling of neighboring systems is based on the input received from the NPCC CP-8 working group.
- **The inclusion rules reside in the Reliability Planning Process Manual [link], and are used as guidelines to determine what proposed projects will be included in the RNA Base Case, and also how to treat generator deactivations**

New York ISO

2022 RNA: Inclusion Rules Application

- **Proposed generation and transmission to be included:**
  - next slide contains a list of projects
- **Generation deactivations: all plant deactivations listed in the 2022 Gold Book Section IV -3, -4, -5 will be out of service**
- **The peakers listed in the 2022 Gold Book Table IV-6 will be modeled with a status reflecting their latest compliance plans the owners filed with DEC under the Peaker Rule**
  - List in this presentation
- **Proposed Local Transmission Owner Plans (LTP) to be included:**
  - All BPTF LTPs listed in the 2022 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

New York ISO

Proposed Projects Inclusion: Regulated Transmission

NYISO Interconnection Queue #	Project Name/(Owner)	Summer Peak MW	POI	Zone	Type	Queue COD or I/S	Interconnection Status / Class Year	Reliability Base Case Inclusion Status
0545A	Empire State Line (NextEra)	*n/a*	Dysinger - Stolle 345kV	A	Transmission	06/2022	TIP Facility Study and Interconnection Agreement completed (Western NY PPTPP)	2018-2019 RPP
0543	Segment B Knickerbocker-Pleasant Valley 345 kV (National Grid, NY Transco, O&R, ConEdison)	*n/a*	Greenbush - Pleasant Valley 345kV	F,G	Transmission	12/2023	TIP Facility Study and Interconnection Agreement completed (AC PPTPP)	2020-2021 RPP
0556	Segment A Double Circuit (LS Power, National Grid, NYPA)	*n/a*	Edic - New Scotland 345kV	E, F	Transmission	12/2023	TIP Facility Study and Interconnection Agreement completed (AC PPTPP)	
0430	Cedar Rapids Transmission Upgrade (HQ Energy Services US)	+80	Dennison - Alcoa 115kV	D	Transmission	I/S	CY2017	
0631	NS Power Express (CHPE LLC)	1000	Hertel 735kV (Quebec)-Astoria Annex 345kV (NYC)	J	DC Transmission	12/2025	CY21 in progress	2022 RNA
0887	CH Uprate (CHPE LLC)	250						2022 RNA
1125	Northern New York Priority Transmission Project (NNYPTP) (NYPA, National Grid)	n/a	Moses/Adirondack/Porter Path	D, E	Transmission	12/2025	TIP Facility Study in progress	2022 RNA

Note: brown color shows projects added since the April 1 TPAS/ESPWG presentation

New York ISO

Proposed Projects Inclusion: Large Generation

Project Category	NYISO Interconnection Queue #	Project Name/(Owner)	Summer Peak MW	POI	Zone	Type	Queue COD or I/S	Interconnection Status / Class Year	Reliability Base Case Inclusion *Starting With*
Large Gens	678	Calverton Solar Energy Center (LI Solar Generation, LLC)	22.9	Edwards Substation 138kV	K	S	Jun-22	CY2019	2020-2021 RPP
	422	Eight Point Wind Energy Center (NextEra Energy Resources, LLC)	101.8	Bennett 115kV	B	W	Sep-22	CY2017	2020-2021 RPP
	505	Ball Hill Wind (Ball Hill Wind Energy, LLC)	100.0	Dunkirk - Gardenville 230kV	A	W	Nov-22	CY2017	2020-2021 RPP
	396	Baron Winds (Baron Winds, LLC)	238.4	Hillside - Meyer 230kV	C	W	Dec-23	CY2017	2020-2021 RPP
	531	Number 3 Wind Energy (Invenergy Wind Development LLC)	103.9	Taylorville - Boonville 115kV	E	W	Oct-22	CY2019	2021 Q3 STAR
	758	Independence GS1 to GS4 (Dynegy Marketing and Trade, LLC)	+9	Scriba 345 kV	C	Gas	I/S	CY21 in progress - ERIS only	2022 RNA
	579	Bluestone Wind (Bluestone Wind, LLC)	111.8	Afton - Stilesville 115kV	E	W	Oct-22	CY2019	2022 RNA
	721	Excelsior Energy Center (Excelsior Energy Center, LLC)	280.0	N. Rochester - Niagara 345 kV	A	S	Nov-22	CY2019	2022 RNA
	618	High River Solar (High River Energy Center, LLC)	90.0	Inghams - Rotterdam 115kV	F	S	Nov-22	CY2019	2022 RNA
	619	East Point Solar (East Point Energy Center, LLC)	50.0	Cobleskill - Marshville 69kV	F	S	Nov-22	CY2019	2022 RNA
	612	South Fork Wind Farm (South Fork Wind, LLC)	96.0	East Hampton 69kV	K	OSW	Aug-23	CY2019	2022 RNA
	695	South Fork Wind Farm II (South Fork Wind, LLC)	40.0	East Hampton 69kV	K	OSW	Aug-23	CY2019	2022 RNA
	637	Flint Mine Solar (Flint Mine Solar LLC)	100.0	LaFarge - Pleasant Valley 115kV, Feura Bush - North Catskill 115kV	G	S	Sep-23	CY2019	2022 RNA
	720	Trelina Solar Energy Center (Trelina Solar Energy Center, LLC)	80.0	Border City - Station 168 115 KV	C	S	Nov-23	CY2019	2022 RNA
	617	Watkins Glen Solar Watkins Glen Energy Center, LLC	50.0	Bath - Montour Falls 115kV	C	S	Nov-23	CY2019	2022 RNA
	495	Mohawk Solar (Mohawk Solar LLC)	90.5	St. Johnsville - Marshville 115kV	F	W	Nov-24	CY2019	2022 RNA

Note: all of the proposed Large Gens in this table have both Capacity Resource Interconnection Service (CRIS) and Energy Resource Interconnection Service (ERIS), unless otherwise noted

New York ISO

Proposed Projects Inclusion: Small Generation

NYISO Interconnection Queue #	Project Name/(Owner)	Summer Peak MW	POI	Zone	Type	Queue COD or I/S	Interconnection Status/ Class Year	Reliability Base Case Inclusion Status
572	Greene County 1 (Hecate Energy Greene 1 LLC)	20	Coxsackie - North Catskill 69kV	G	S	01/2023	IA Executed*	2021 Q3 STAR
573	Greene County 2 (Hecate Energy Greene 2 LLC)	10	Coxsackie Substation 13.8kV	G	S	03/2023	IA Executed*	2021 Q3 STAR
768	Janis Solar (Janis Solar, LLC)	20	Willet 34.5kV	C	S	04/2022	IA Executed*	2021 Q3 STAR
775	Puckett Solar (Puckett Solar, LLC)	20	Chenango Forks Substation 34.5kV	E	S	04/2022	IA Executed*	2021 Q3 STAR
670	Skyline Solar (SunEast Skyline Solar LLC)	20	Campus Rd - Clinton 46kV	E	S	04/2022	IA Executed*	2021 Q3 STAR
584	Dog Corners Solar (SED NY Holdings LLC)	20	Aurora Substation 34.5kV	C	S	05/2022	IA Executed*	2021 Q3 STAR
592	Niagara Solar (Duke Energy Renewables Solar, LLC)	20	Bennington 34.5kV Substation	B	S	05/2023	IA Executed	2021 Q3 STAR
590	Scipio Solar (Duke Energy Renewables Solar, LLC)	18	Scipio 34.5kV Substation	C	S	05/2023	IA Executed	2021 Q3 STAR
682	Grissom Solar (Grissom Solar, LLC)	20	Ephratah - Florida 115kV	F	S	06/2022	IA Executed*	2021 Q3 STAR
748	Regan Solar (Regan Solar, LLC)	20	Market Hill - Johnstown 69kV	F	S	06/2022	IA Executed*	2021 Q3 STAR
545	Sky High Solar (Sky High Solar, LLC)	20	Tilden -Tully Center 115kV	C	S	06/2023	IA Executed*	2021 Q3 STAR
586	Watkins Road Solar (SED NY Holdings LLC)	20	Watkins Rd - Ilion 115kV	E	S	06/2023	IA Executed*	2021 Q3 STAR

- Note: the proposed Small Gens have Energy Resource Interconnection Service (ERIS) rights; those labeled with a "*" also have Capacity Resource Interconnection Service (CRIS) rights

New York ISO

Proposed Projects Inclusion: Small Generation (cont.)

NYISO Interconnection Queue #	Project Name/(Owner)	Summer Peak MW	POI	Zone	Type	Queue COD or I/S	Interconnection Status/ Class Year	Reliability Base Case Inclusion Status
735	ELP Stillwater Solar (ELP Stillwater Solar LLC)	20	Luther Forest - Mohican 115kV	F	S	09/2022	IA Executed	2021 Q3 STAR
666	Martin Solar (Martin Solar LLC)	20	Arcade - Five Mile 115kV	A	S	10/2022	IA Executed*	
667	Bakerstand Solar (Bakerstand Solar LLC)	20	Machias - Maplehurst 34.5kV	A	S	10/2022	IA Executed*	
565	Tayandenega Solar (Tayandenega Solar, LLC)	20	St. Johnsville - Inghams 115kV	F	S	10/2022	IA Executed*	
570	Albany County 1 (Hecate Energy Albany 1 LLC)	20	Long Lane - Lafarge 115kV	F	S	12/2022	IA Executed*	
598	Albany County 2 (Hecate Energy Albany 2 LLC)	20	Long Lane - Lafarge 115kV	F	S	12/2022	IA Executed*	
638	Pattersonville (Pattersonville Solar Facility, LLC)	20	Rotterdam - Meco 115kV	F	S	12/2022	IA Executed*	
730	Darby Solar (Darby Solar, LLC)	20	Mohican - Schaghticoke 115kV	F	S	12/2022	IA Executed*	
564	Rock District Solar (Rock District Solar, LLC)	20	Sharon - Cobleskill 69kV	F	S	12/2022	IA Executed*	
731	Branscomb Solar (Branscomb Solar, LLC)	20	Battenkill - Eastover 115kV	F	S	I/S	IA Executed*	
759	KCE NY6	20	Gardenville - Bethlehem Steel Wind 115kV	A	ES	04/2022	IA Executed*	2022 RNA
734	Ticonderoga Solar (ELP Ticonderoga Solar LLC)	20	ELP Ticonderoga Solar LLC	F	S	8/1/2022	IA Executed*	
848	Fairway Solar (SunEast Fairway Solar LLC.)	20	McIntyre - Colton 115kV	E	S	10/1/2023	IA Executed	
855	NY13 Solar (Bald Mountain Solar LLC)	20	Mohican - Schaghticoke 115kV	F	S	11/1/2023	IA Executed	
769	North County Energy Storage (New York Power Authority)	20	Willis 115kV	D	ES	03/2022	IA Executed	
807	Hilltop Solar (SunEast Hilltop Solar LLC)	20	Eastover - Schaghticoke 115kV	E	S	07/2023	IA Executed	
581	Hills Solar (SunEast Hills Solar LLC)	20	Fairfield - Inghams 115kV	E	S	08/2023	IA Executed	

Note: the proposed Small Gens have ERIS rights; those labeled with a "*" also have CRIS rights

New York ISO

DEC's Peaker Rule Impacts on the 2022 RNA Base Case

New York ISO

DEC Peaker Rule Background

- New York State Department of Environmental Conservation (DEC) adopted a regulation to limit nitrogen oxides (NOx) 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 has been considering generators' compliance plans in the development of the 2020 Reliability Needs Assessment Base Case, and will continue to consider and update the assumptions for the 2022 RNA Base Cases

New York ISO

Status Changes Due to DEC Peaker Rule

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	J	20.0	16.1	21.0	16.0	21.0	2/1/2021 (IIFO)	2021 Q1/2022 Q2 (5)
National Grid	Glenwood GT 01 (4)	K	16.0	14.6	19.1	13.0	15.3	2/28/2021 (R)	2020 Q3
Helix Ravenswood, LLC	Ravenswood 11	J	25.0	20.2	25.7	16.1	22.4	12/1/2021 (IIFO)	2022 Q1
Helix Ravenswood, LLC	Ravenswood 01	J	18.6	8.8	11.5	7.7	11.1	1/1/2022 (IIFO)	2022 Q1
Astoria Generating Company, L.P.	Gowanus 1-1 through 1-7	J	140.0	122.6	160.1	117.1	161.2	11/1/2022 (R)	2022 Q2
Astoria Generating Company, L.P.	Gowanus 4-1 through 4-8	J	160.0	140.1	182.9	138.8	183.4	11/1/2022 (R)	2022 Q2
Central Hudson Gas & Elec. Corp.	Coxsackie GT	G	21.6	21.6	26.0	19.2	24.0	5/1/2023	
Central Hudson Gas & Elec. Corp.	South Cairo	G	21.6	19.8	25.9	18.9	23.0	5/1/2023	
Consolidated Edison Co. of NY, Inc.	74 St. GT 1 & 2	J	37.0	39.1	49.2	39.3	45.2	5/1/2023	2022 Q2
Astoria Generating Company, L.P.	Astoria GT 01	J	16.0	15.7	20.5	13.6	19.0	5/1/2023	
NRG Power Marketing, LLC	Astoria GT 2-1, 2-2, 2-3, 2-4	J	186.0	165.8	204.1	141.6	183.7	5/1/2023 (R)	2022 Q2
NRG Power Marketing, LLC	Astoria GT 3-1, 3-2, 3-3, 3-4	J	186.0	170.7	210.0	140.5	182.8	5/1/2023 (R)	2022 Q2
NRG Power Marketing, LLC	Astoria GT 4-1, 4-2, 4-3, 4-4	J	186.0	167.9	206.7	138.3	180.3	5/1/2023 (R)	2022 Q2

Notes

1. MW values are from the draft 2022 Load and Capacity Data Report

2. Unless otherwise noted, these dates are those 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 in their Generator Deactivation Notice) Retired (R) or Mothball Outage (MO) or the date on which the generator entered ICAP Ineligible Forced Outage (IIFO)

3. 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

4. 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.

5. The IIFO status for this unit was evaluated in the 2021 Q1 STAR. The proposed Retirement for this unit will be evaluated in the 2022 Q2 STAR.

6. This unit was evaluated in a stand-alone generator deactivation assessment prior to the creation of the Short-Term Reliability Process

New York ISO

Status Changes Due to DEC Peaker Rule

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		
Consolidated Edison Co. of NY, Inc.	Hudson Ave 3	J	16.3	16.0	20.9	12.3	15.6	5/1/2023	2022 Q2
Consolidated Edison Co. of NY, Inc.	Hudson Ave 5	J	16.3	15.1	19.7	15.3	18.6	5/1/2023	2022 Q2
Helix Ravenswood, LLC	Ravenswood 10	J	25.0	21.2	27.0	16.0	22.3	5/1/2023	
National Grid	Glenwood GT 03 (3)	K	55.0	54.7	71.5	44.7	66.5	5/1/2023	
National Grid	Northport GT	K	16.0	13.8	18.0	12.0	15.7	5/1/2023	
National Grid	Port Jefferson GT 01	K	16.0	14.1	18.4	12.6	17.3	5/1/2023	
National Grid	Shoreham 1 (3)	K	52.9	48.9	63.9	44.7	64.6	5/1/2023	
National Grid	Shoreham 2 (3)	K	18.6	18.5	23.5	15.7	20.0	5/1/2023	
Consolidated Edison Co. of NY, Inc.	59 St. GT 1	J	17.1	15.4	20.1	13.1	18.8	5/1/2025	
NRG Power Marketing, LLC	Arthur Kill GT 1	J	20.0	16.5	21.6	12.1	15.1	5/1/2025	
Astoria Generating Company, L.P.	Gowanus 2-1 through 2-8 (4)	J	160.0	152.8	199.6	145.5	186.9	5/1/2025	
Astoria Generating Company, L.P.	Gowanus 3-1 through 3-8 (4)	J	160.0	146.8	191.7	137.4	183.5	5/1/2025	
Astoria Generating Company, L.P.	Narrows 1-1 through 2-8 (4)	J	352.0	309.1	403.6	291.5	382.0	5/1/2025	
	Prior to May 2023		432.0	371.4	484.3	349.9	477.4		
	2023 Total		870.3	802.9	1,005.3	684.7	898.6		
	2025 Total		709.1	640.6	41.7	599.6	33.9		
	Total		2,011.4	1,814.9	1,531.3	1,634.2	1,409.9		

Notes

1. MW values are from the draft 2022 Load and Capacity Data Report

2. Unless otherwise noted, these dates are those 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 in their Generator Deactivation Notice) Retired (R) or Mothball Outage (MO) or the date on which the generator entered ICAP Ineligible Forced Outage (IIFO)

3. 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

4. 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.

5. The IIFO status for this unit was evaluated in the 2021 Q1 STAR. The proposed Retirement for this unit will be evaluated in the 2022 Q2 STAR.

6. This unit was evaluated in a stand-alone generator deactivation assessment prior to the creation of the Short-Term Reliability Process

New York ISO

Other Proposed Deactivations

New York ISO

Does not include status changes due to DEC Peaker Rule

Owner/ Operator	Plant Name	Zone	PTID	Nameplate	CRIS (MW)		Capability (MW)			Deactivation date
				(MW)	Summer	Winter	Summer	Winter	Status	
Seneca Power Partners. L.P.	Allegheny Cogen (1)	B	23514	67	62.9	82.2	62.0	62.7	R	05/02/2022
Seneca Power Partners. L.P.	Sithe Batavia (1)	B	24024	67.3	57.1	71.7	48.7	59.0	R	05/02/2022
Seneca Power Partners. L.P.	Sithe Sterling (1)	B	23777	65.3	57.4	72.1	49.2	61.9	R	05/02/2022
ENGIE Energy Marketing NA, Inc.	Nassau Energy Corporation (2)	K	323695	55	51.6	60.1	38.5	51.0	R	03/31/2022
Exelon Generation Company, LLC.	Madison County LF (2)	E	323628	1.6	1.6	1.6	1.6	1.6	IIFO	04/01/2022
			Total	256.2	230.6	287.7	200	236.2		

Notes
(1) This deactivation is assessed in the 2022 Quarter 1 Short-Term Assessment of Reliability
(2) This deactivation is assessed in the 2022 Quarter 2 Short-Term Assessment of Reliability

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