

NYCA IRM Requirement Study 2026-2027 Preliminary Base Case (PBC) Model Assumptions Matrix

Draft V4.1

NYSRC

Installed Capacity Subcommittee Meeting #306

August 06, 2025

Load Forecast

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
1a	Peak Load Forecast (Preliminary Base Case – Parametric & Sensitivities)	2024 Gold Book* NYCA: 31,832.2 MW NYC: 11,227.5 MW LI: 5,077.9 MW G-J: 15,298.5 MW (Attachment A1-a)	2025 Gold Book* NYCA: 32,163.0 MW NYC: 11,048.2 MW LI: 5,111.2 MW G-J: 15,298.2 MW (Attachment A1-a)	Most recent Gold Book Forecast is used for Preliminary Base Case (PBC) parametric study and sensitivity cases	N
1b	Winter Peak Load Forecast	N/A	2025 Gold Book* NYCA: 25,093.0 MW NYC: 7,648.2 MW LI: 3,328.2 MW G-J: 10,766.3 MW (Attachment A1-b)	New for 2026-2027 IRM study with the adoption of the Enhanced Load Modeling and Behind-the-Meter (BTM) Solar Modeling enhancements. Most recent Gold Book Forecast is used for Preliminary Base Case parametric study and sensitivity cases	Y
2	Peak Load Forecast (Final Base Case)	October 2024 Fcst NYCA: 31,649.7 MW* NYC: 11,043.9 MW LI: 5,092.1 MW G-J: 15,205.1 MW	(Expected October 2024)	Updated Load Forecast in October will be used for Final Base Case (FBC)	TBD

* Behind-the-Meter Net Generation (BTM:NG) resource loads have been incorporated into these numbers.

Load Forecast

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
3	Load Shape (Multiple Load Shape)	Bin 1-2: 2013 Bin 3-4: 2018 Bin 5-7: 2017	Bin 1-2: 2013 Bin 3-4: 2018 Bin 5-7: 2017	ICS Recommendation	N
4a	Load Forecast Uncertainty (LFU)	Zonal Model to reflect current data with input from Con Ed and LIPA. (Attachment A2)	Zonal Model to reflect current data with input from Con Ed and LIPA. (Attachment A2)	Based on TO and NYISO data analysis	N
4b	LFU Winter	Attachment A3	Attachment A3	Based on TO and NYISO data analysis	N
5	Annual Energy Forecast	N/A	2025 Gold Book NYCA: 155,460 GWh NYC: 50,100 GWh LI: 20,040 GWh (Attachment A4)	New for 2026-2027 IRM study with the adoption of the Enhanced Load Modeling and BTM Solar Modeling enhancements. Production of load shapes are aligned with the annual energy forecast as per the Enhanced Load Modeling Whitepaper. Updated with most recent Gold Book Forecast.	Y

Generation Parameters

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
6	Existing Generating Unit Capacities	2024 Gold Book Values. Use min. (DMNC vs. CRIS) capacity value	2025 Gold Book Values. Use min. (DMNC vs. CRIS) capacity value	Latest Gold Book publication	N
7	Proposed New Units (Thermal) and re-ratings	47.0 MW summer re-rating for Thermal resources (Attachment B1)	0 MW new units or re-ratings for Thermal resources (Attachment B1)	NYISO recommendation based on documented process that includes the latest Gold Book publication, NYISO interconnection queue, and generation notifications	N
8	Deactivations and Removals	165.4 MW unit deactivations (Attachment B2)	709.6 MW generator deactivations and removals (Attachment B2)	Latest Gold Book publication and generator notifications	N
9	Forced and Partial Outage Rates	Five-year (2019-2023) GADS data for each unit represented. Those units with less than five years – use representative data. (Attachment C1)	Five-year (2020-2024) GADS data for each unit represented. Those units with less than five years – use representative data. (Attachment C1)	Transition rates representing the Equivalent Demand Forced Outage Rates (EFORD) during demand periods over the most recent five-year period	N
10	Planned Outages	Planned Outages are removed from the IRM study	Planned Outages are removed from the IRM study	Based on 2022-2023 IRM study FBC	N

Generation Parameters

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
11	Summer Maintenance	Nominal 50 MW – divided equally as 2 negative 25 MW units in Load Zones J and K	Expected update in August 2025	Review of most recent data Per NYSRC recommendation	N
12	Combustion Turbine Derates	Derate based on temperature correction curves provided	Derate based on temperature correction curves provided	Operational history indicates the derates are in line with manufacturer provided curves	N
13	Existing and Proposed New Wind Units	0 MW of offshore wind capacity additions 2,566.20 MW of qualifying wind. (Attachments G and B3)	0 MW of offshore wind capacity additions 2,550.7 MW of qualifying wind. (Attachments G and B3)	ICAP based on clean energy standard (CES) agreements, interconnection queue and ICS input.	N
14a	Land-Based Wind Shape	Actual hourly plant output over the period 2019-2023. New units will use zonal hourly averages or nearby units.	Actual hourly plant output over the period 2020-2024. New units will use zonal hourly averages or nearby units.	Program randomly selects a wind shape of hourly production from the most recent five-year period for each model iteration.	N
14b	Offshore Wind Shape	Normalized offshore wind shapes as published by NYISO over the period 2017-2021	Normalized offshore wind shapes as published by NYISO over the period 2020-2024	Program randomly selects a wind shape of hourly production from the most recent five-year period for each model iteration.	N
15	Existing and Proposed New Solar Resources	267 MW of utility-scale solar capacity additions totaling 571.4 MW of qualifying solar capacity. (Attachment B3)	0 MW of utility-scale solar capacity additions totaling 573.4 MW of qualifying solar capacity. (Attachments B3 and G2)	ICAP based on CES agreements, interconnection queue and ICS input.	N
16	Solar Shape	Actual hourly plant output over the period 2019-2023. New units will use zonal hourly averages or nearby units.	Actual hourly plant output over the period 2020-2024. New units will use zonal hourly averages or nearby units.	Program randomly selects a solar shape of hourly production from the most recent five-year period for each model iteration.	N

Generation Parameters

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
17	BTM:NG Program	No new BTM:NG resources, total of 182.2 MW (Attachment B5)	No new BTM:NG resources, total of 173.0 MW (Attachment B5)	Both the generation of the participating resources and the full host loads are modeled	N
18	Small Hydro Resources	Actual hourly plant output over the period 2019-2023	Actual hourly plant output over the period 2020-2024	Program randomly selects a hydro shape of hourly production from the most recent five-year period for each model iteration.	N
19	Large Hydro	Probabilistic model based on five years of GADS data (2019-2023)	Probabilistic model based on five years of GADS data (2020-2024)	Transition rates representing the EFORd during demand periods over the most recent five-year period.	N
20	Landfill Gas (LFG)	Actual hourly plant output over the period 2019-2023	Actual hourly plant output over the period 2020-2024	Program randomly selects an LFG shape of hourly production from the most recent five-year period for each model iteration.	N
21	New Energy Storage Resources (ESRs)	0 MW of new battery storage scheduled. 20 MW of total battery storage modeled.	18 MW of new battery storage scheduled. (Attachment B4) 35 MW of total battery storage modeled. (Attachment G6)	ICAP based on NYSERDA/utility agreements, interconnection queue and ICS input.	N
22	Energy Limited Resources (ELRs)	Based upon elections made by August 1 st , 2024 ES and small EL3 output limitations lifted at HB14	(Updated elections expected by August 1, 2025) ES and small EL3 output limitations lifted at HB14	Existing elections are made by August 1st and will be incorporated into the model	N

Transactions- Imports and Exports

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
23	Capacity Purchases	Existing Rights: PJM – 1,013 MW HQ – 1,190 MW All contracts modeled as equivalent contracts.	Existing Rights: PJM – 1,080 MW HQ – 1,190 MW All contracts modeled as equivalent contracts.	Grandfathered Rights, Existing Transmission Capacity for Native Load (ETCNL), and other awarded long-term rights	N
24	Capacity Sales	Long Term firm sales Summer 266.6 MW	Long Term firm sales Summer 266.7 MW	Long term contracts	N
25	Forward Capacity Market (FCM) Sales from a Locality*	No sales modeled within study period	No sales modeled within study period	White paper, NYISO recommendation	N
26	Wheels through NYCA	300 MW HQ to ISO-NE equivalent contract	300 MW HQ to ISO-NE equivalent contract	HQ wheel has an ISO-NE capacity supply obligation for 2026-2027	N
27	New Unforced Capacity Deliverability Rights (UDRs)	No new UDRs identified	Champlain Hudson Power Express: 1,250 MW new UDR from HQ to Load Zone J**	ICS recommendation for inclusion UDR elections are made by August 1st and will be incorporated into the model for FBC	N
28	New External Deliverability Rights (EDRs)	No new EDRs identified	No new EDRs identified	Review of most recent data Per NYSRC recommendation	N

* Final FCM sales that will materialize are unknowable at the time of the IRM study. To reflect the impact these sales have on reliability, the NYISO applies a Locality Exchange Factor in the market.

** Preliminary assumption for PBC, subject to change/update for FBC including adjustments for any actual UDR awards by NYISO

Topology

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
29	Interface Limits	Updates to the Central East forward limits, and West-Central reverse limit	Updates to the Dysinger East forward limit, West Central reverse limit, Moses South forward limit, Central East forward limits, and Sprain Brook Dunwoodie South forward limit (Attachment E1)	Based on the 2025 NYISO Summer Operating Study, and 2023 Central-East Voltage Limit Study	N
30	New Transmission	None Identified	Addition of Smart Path Connect project	Based on 2024 NYISO Reliability Needs Assessment (RNA) and recent NYISO Short Term Assessment of Reliability (STAR) studies	N
31	AC Cable Forced Outage Rates	All existing Cable EFORDs for NYC and LI to reflect most recent ten - year history (2014-2023) (Attachment E4)	All existing Cable EFORDs for NYC and LI to reflect most recent ten - year history (2015-2024) (Attachment E4)	TO provided transition rates with NYISO review Based upon NYSRC recommendation	N
32	UDR Line Unavailability	Ten-year history of forced outages (2014-2023)	Ten-year history of forced outages (2015-2024)*	NYISO/TO review Based upon NYSRC recommendation	N

*New UDR lines are assigned NYCA average cable outage rates as reflected in Attachment E4

Emergency Operating Procedures

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
33	Special Case Resources (SCRs)	July 2024 – 1,486.7 MW based on registrations and modeled with maximum capacity of 1,280.8 MW derated by hourly response rates. Utilize a new energy limited resource (ELR) functionality to model SCRs as duration limited resources with hourly response rates and limited to one call per day. Monthly variation based on historical experience.	July 2024 – 1,486.7 MW (preliminary) based on registrations and modeled with maximum capacity of 1,269.7 MW derated by hourly response rates. Utilize a new energy limited resource (ELR) functionality to model SCRs as duration limited resources with hourly response rates and limited to one call per day. Monthly variation based on historical experience.	Summer values calculated from July 2024 registrations accounting for updated historical performance.	N
34	Other Emergency Operating Procedures (EOPs)	400 MW of 10-min reserves maintained at load shedding Voluntary Curtailment and Public Appeals limited to 3 calls per year 804.6 MW of non-SCR/non-EDRP resources (Attachment D)	400 MW of 10-min reserves maintained at load shedding Voluntary Curtailment and Public Appeals limited to 3 calls per year (Expected update in August 2025) Preliminary: 923.4 MW of non-SCR/non-EDRP resources (Attachment D)	Based on Whitepaper and NYISO updated analysis recommendation Based on TO information, measured data, and NYISO forecasts	N
35	EOP Structure	10 EOP steps modeled	10 EOP steps modeled	Based on agreement with ICS	N

External Control Areas

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
36	PJM	Load and capacity data will be provided by PJM/NPCC CP-8 Data may be adjusted per NYSRC Policy 5. (Attachment E)	PJM no longer updating their MARS model for NPCC. (Attachment E3)	NYISO to conduct Policy 5 updates using 2026 NERC reference levels	N
37	ISO-NE, Quebec, IESO	Load and capacity data will be provided by ISO-NE/NPCC CP-8 Data may be adjusted per NYSRC Policy 5. (Attachment E)	ISO-NE Updates: Orrington (BHE to ME) limit, Surowiec (ME to S-ME) limit, S-ME to NH limit, and West-to-East group limit (Attachment E2)	2024 NPCC Long Range Adequacy Overview (LRAO) transfer limits for 2025-2029	N
38	External Adjustments per Policy 5	If needed, add load to externals proportional to existing excess capacity.	If needed, add load to externals proportional to existing excess capacity.	Whitepaper on External Control Area adjustments	N
39	Reserve Sharing	All NPCC Control Areas indicate that they will initially share reserves equally among all members and then non-members.	All NPCC Control Areas indicate that they will initially share reserves equally among all members and then non-members.	Per NPCC CP-8 WG	N
40	Emergency Assistance	Statewide emergency assistance allowed from neighbors: Bin 1: 1,470 MW Bin 2: 2,600 MW Bin 3-7: 3,500 MW Individual interface limits and PJM cables are also reduced by Bin (Attachment E5)	Statewide emergency assistance allowed from neighbors: Bin 1: 1,470 MW Bin 2: 2,600 MW Bin 3-7: 3,500 MW Winter emergency assistance for HQ is 0 MW (Attachment E5)	Whitepaper on Modeling of Emergency Assistance for NYCA in IRM studies Based upon NYSRC recommendation	N

Miscellaneous

#	Parameter	2025 Model Assumptions	2026 Model Assumptions	Basis for Recommendation	Model Change
41	MARS Model Version	4.14.2179	5.7.3765	New MARS version completed testing by NYISO	Y
42	Environmental Initiatives	No new rules for 2025-2026 Capability Year	(Updated data expected July 2025 for FBC)	Review of existing regulations and rules	TBD

Attachment A1-a

NYCA Summer Load Forecast Coincident and Non-Coincident Peak:
2025-2026 Final Base Case (FBC) and 2026-2027 Preliminary Base Case (PBC)

2025-2026 FBC													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	3,089.2	1,971.1	2,675.8	721.3	1,326.2	2,293.8	2,286.2	614.2	1,352.7	11,043.9	5,092.1		
CP - Forecast	2,926.8	1,925.4	2,596.5	693.0	1,291.2	2,239.2	2,235.5	600.7	1,323.1	10,802.3	5,016.0	31,649.7	
G-J Peak - Forecast							2,271.8	610.5	1,344.7	10,978.1			15,205.1

2026-2027 PBC													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	3,110.2	1,951.8	2,705.3	1,085.0	1,334.3	2,310.0	2,356.0	634.0	1,350.0	11,048.2	5,111.2		
CP - Forecast	2,947.2	1,906.8	2,625.3	1,042.0	1,299.3	2,255.0	2,304.0	620.0	1,320.0	10,808.2	5,035.2	32,163.0	
G-J Peak - Forecast							2,342.0	630.0	1,342.0	10,984.2			15,298.2

Delta													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	21.0	-19.3	29.5	363.7	8.1	16.2	69.8	19.8	-2.7	4.3	19.1		
CP - Forecast	20.4	-18.6	28.8	349.0	8.1	15.8	68.5	19.3	-3.1	5.9	19.2	513.3	
G-J Peak - Forecast							70.2	19.5	-2.7	6.1			93.1

Attachment A1-b

NYCA Winter Load Forecast Coincident and Non-Coincident Peak: 2025-2026 FBC and 2026-2027 PBC

2025-2026 FBC*													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	2,308.5	1,647.5	2,548.6	1,043.0	1,316.3	1,934.0	1,535.0	519.0	895.0	7,498.3	3,349.4		
CP - Forecast	2,283.5	1,634.5	2,543.6	1,022.0	1,293.3	1,922.0	1,524.0	508.0	885.0	7,428.3	3,336.4	24,380.6	
G-J Peak - Forecast							1,521.0	506.0	885.0	7,472.3			10,384.3

2026-2027 IRM PBC													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	2,355.2	1,588.8	2,650.3	1,274.0	1,359.3	1,930.0	1,667.0	536.0	953.0	7,648.2	3,328.2		
CP - Forecast	2,327.2	1,577.8	2,640.3	1,249.0	1,334.3	1,917.0	1,662.0	525.0	947.0	7,598.2	3,315.2	25,093.0	
G-J Peak - Forecast							1,657.0	523.0	943.0	7,643.3			10,766.3

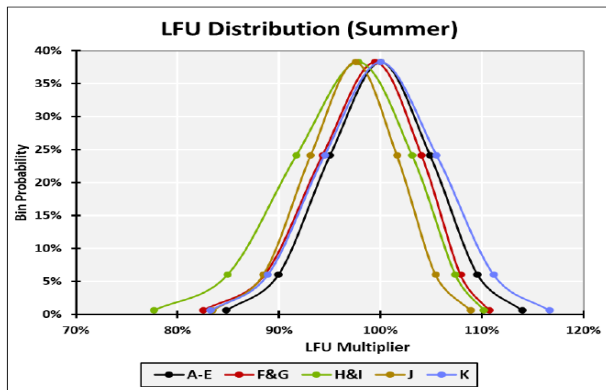
Delta													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	46.7	-58.7	101.7	231.0	43.0	-4.0	132.0	17.0	58.0	149.9	-21.2		
CP - Forecast	43.7	-56.7	96.7	227.0	41.0	-5.0	138.0	17.0	62.0	169.9	-21.2	712.4	
G-J Peak - Forecast							136.0	17.0	58.0	171.0			382.0

*With the proposed implementation of the Enhanced Load Modeling for the 2026-2027 IRM study, the winter forecast was not part of the 2025-2026 IRM study. The values are based on the information contained in the load forecast for the 2025-2026 FBC.

Attachment A2

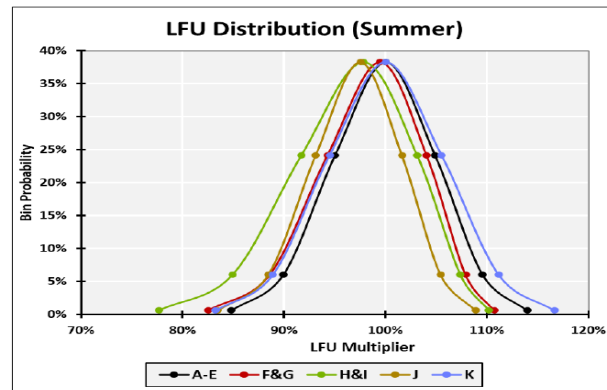
NYCA Summer Load Forecast Uncertainty Model: 2025 and 2026

Load Forecast 2025



Bin	Bin z	Bin Probability	A-E	F&G	H&I	J	K
Bin 1	2.74	0.62%	113.93%	110.69%	110.18%	108.88%	116.62%
Bin 2	1.79	6.06%	109.54%	107.86%	107.34%	105.42%	111.14%
Bin 3	0.89	24.17%	104.86%	104.04%	103.09%	101.61%	105.52%
Bin 4	0.00	38.29%	100.00%	99.46%	97.81%	97.51%	100.00%
Bin 5	-0.89	24.17%	95.00%	94.29%	91.70%	93.12%	94.48%
Bin 6	-1.79	6.06%	89.91%	88.61%	84.93%	88.45%	88.89%
Bin 7	-2.74	0.62%	84.79%	82.53%	77.65%	83.48%	83.27%

Load Forecast 2026



Bin	Bin z	Bin Probability	A-E	F&G	H&I	J	K
Bin 1	2.74	0.62%	113.93%	110.69%	110.18%	108.88%	116.62%
Bin 2	1.79	6.06%	109.54%	107.86%	107.34%	105.42%	111.14%
Bin 3	0.89	24.17%	104.86%	104.04%	103.09%	101.61%	105.52%
Bin 4	0.00	38.29%	100.00%	99.46%	97.81%	97.51%	100.00%
Bin 5	-0.89	24.17%	95.00%	94.29%	91.70%	93.12%	94.48%
Bin 6	-1.79	6.06%	89.91%	88.61%	84.93%	88.45%	88.89%
Bin 7	-2.74	0.62%	84.79%	82.53%	77.65%	83.48%	83.27%

Attachment A3

NYCA Winter Load Forecast Uncertainty Model: 2026

Bin	Bin z	Bin Probability	NYCA (2025 IRM)	NYCA (2026 IRM)	Difference
1	-2.74	0.62%	110.37%	110.48%	0.11%
2	-1.79	6.06%	106.37%	106.68%	0.31%
3	-0.89	24.17%	102.75%	103.22%	0.47%
4	0.00	38.29%	99.42%	100.00%	0.58%
5	0.89	24.17%	96.29%	96.96%	0.67%
6	1.79	6.06%	93.30%	94.02%	0.71%
7	2.74	0.62%	90.41%	91.16%	0.75%

Attachment A4

Annual Energy Forecast by Zone:

Annual Energy Forecast by Zone - GWh												
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA
2025*	15,960.0	10,000.0	14,590.0	5,850.0	7,010.0	11,030.0	9,230.0	2,740.0	5,530.0	49,210.0	19,870.0	151,020.0
2026	16,170.0	9,280.0	14,790.0	8,310.0	7,190.0	11,240.0	9,640.0	2,790.0	5,910.0	50,100.0	20,040.0	155,460.0
Delta	210.0	-720.0	200.0	2,460.0	180.0	210.0	410.0	50.0	380.0	890.0	170.0	4,440.0

*With the proposed implementation of the Enhanced Load Modeling for the 2026-2027 IRM study, the winter forecast was not part of the 2025-2026 IRM study. The values are based on the information contained in the load forecast for the 2025-2026 FBC.

Attachment B1

New Thermal Units and Unit Re-Ratings

New Thermal Units and Unit Re-ratings (summer ratings)					
Project or Generator Name	Zone	2025 Gold Book (MW) CRIS	2025 Gold Book (MW) DMNC	New or Incremental (MW)	2026 MARS Model (MW)
New Units					
Total New Units and Upgrades (MW)					

Attachment B2

Deactivations and Removals

Unit Removal since 2025-2026 IRM Study			
Generator Name	Type	Zone	SUMMER CRIS (MW)
Madison Wind Power	WT	E	11.5
Warrensburg	HY	F	2.9
Coxsackie GT	GT	G	19.7
Gowanus 3-6*	TH	J	15.6
Narrows 2-1*	TH	J	18.8
Narrows 2-7*	TH	J	18.5
59th Street	DS	J	13.9
Narrows 1-1 through 2-8**	TH	J	309.1
Gowanus 2-1 through 2-8 & 3-1 through 3-8**	TH	J	299.6
Total Removals			709.6

*ICAP Ineligible Forced Outage (IIFO)

** Related to Champlain Hudson Power Express (CHPE) modeling assumption

Attachment B3

New Intermittent Resources

New Intermittent Units				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	MARS Modeled Capacity
Wind				
Total Wind				
Solar				
Total Solar				

Attachment B4

New Energy Storage Resources

Energy Storage				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
New Battery Units				
Arthur Kill Energy Storage 1	J	15	15	15
Pomona ESR	G	3	3	3
Total New Energy Storage				18

Attachment B5

Resources in the Behind-the-Meter Net Generation (BTM:NG) Resource Program

Attachment B5 - Units in the Behind-the-Meter Net Generation Resource Program*			
Generator Name	Zone	Resource Value (MW)**	Peak Load Adjustment (MW)**
Existing:			
Stony Brook	K	0.0	39.2
Greenidge 4	C	101.0	57.3
Lyons Falls Hydro	E	0.0	1.3
KIAC_JFK	J	128.0	18.2
Red Rochester	B	81.1	52.8
Oxbow (Fortistar - N.Tonawanda)	A	51.7	4.2
Total BTM-NG			173.0

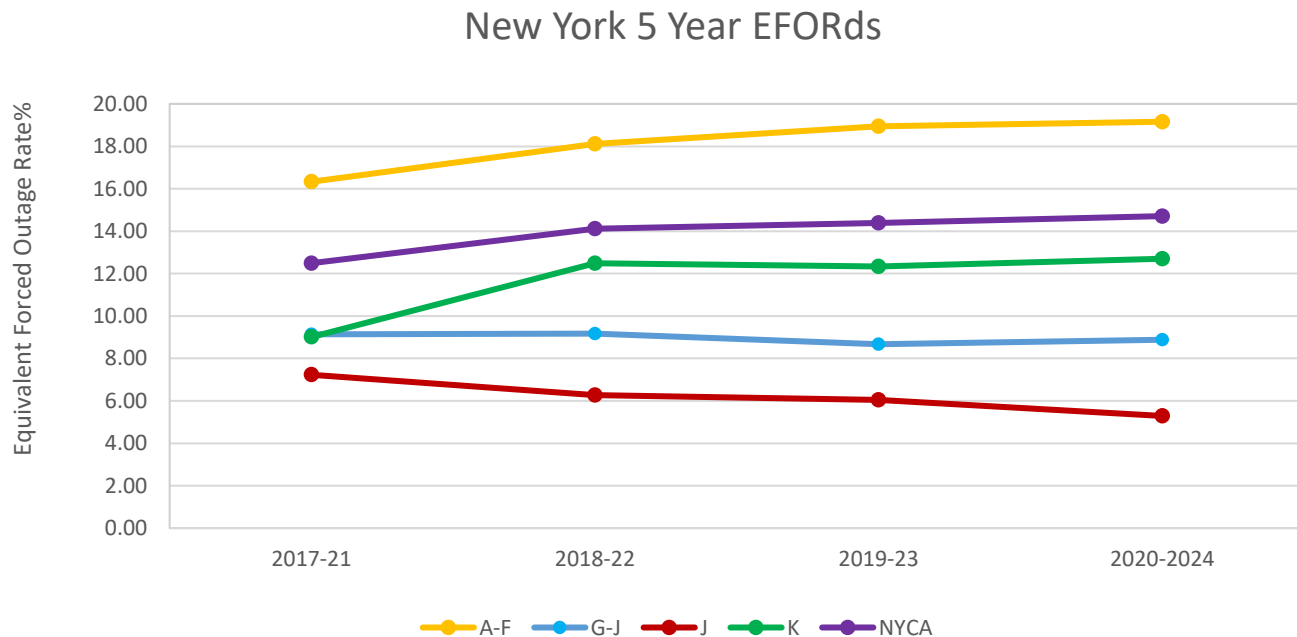
* The IRM study independently models the generation and load components of BTM:NG Resources.

** Based on adjusted Dependable Maximum Gross Capability (DMGC) value.

*** Based on Average Coincident Host Load (ACHL).

Attachment C1

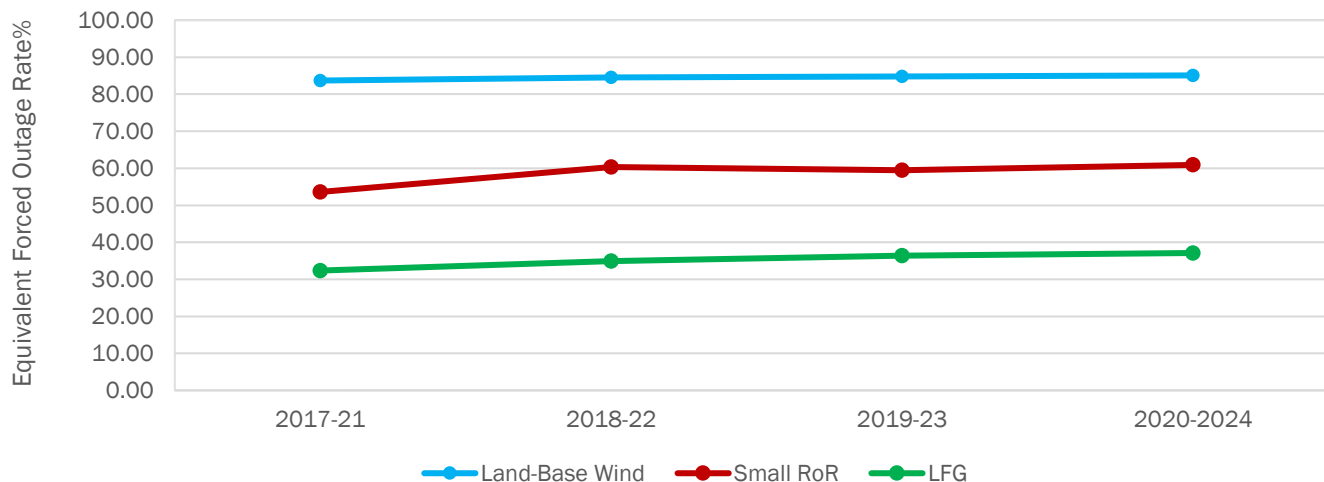
NYCA Five Year Derating Factors – All Resources



Attachment C2

NYCA Five Year Derating Factors - Intermittent Power Resources*

New York 5 Year EFORds - Intermittent



* Solar will be added when there are at least 3 units using production data for all 5 years of the average

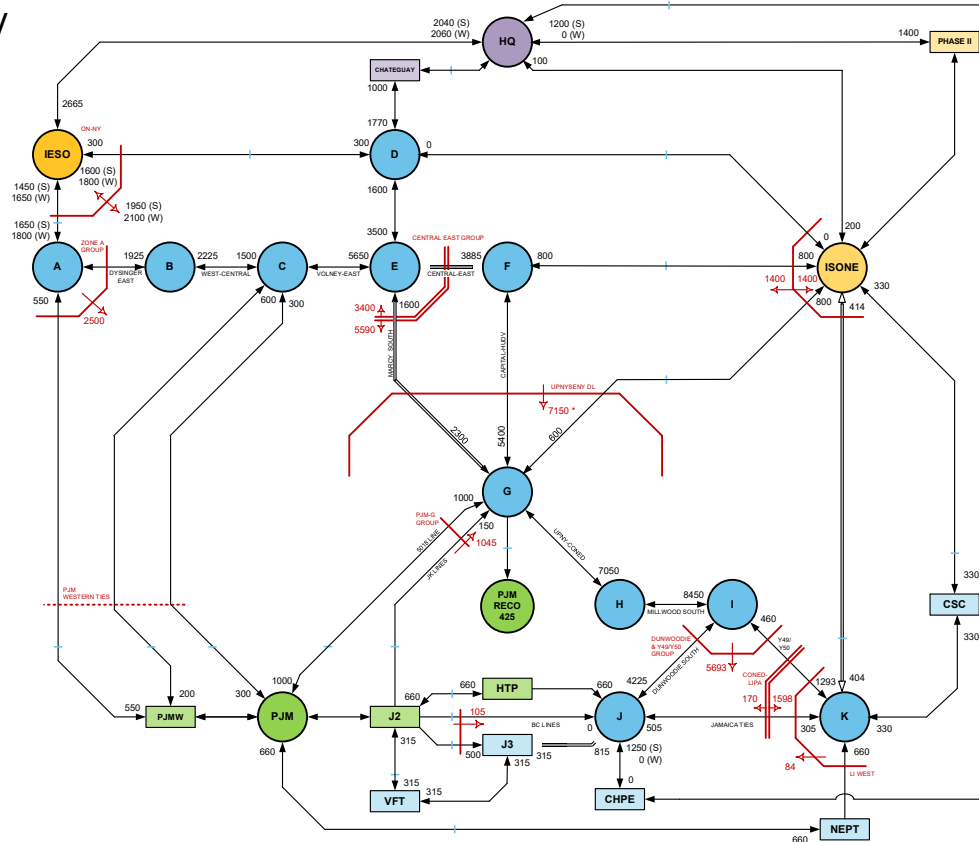
Attachment D

Emergency Operating Procedures

Step	Procedure	2025-2026 IRM MW Value	2026-2027 IRM MW Value
1	Special Case Resources – Load, Gen	1,486.7 MW Enrolled / 1,280.8 MW Modeled	1,486.7 MW Enrolled (preliminary) / 1,269.7 MW Modeled
2	5% manual voltage Reduction	63.38 MW	63.38 MW
3	Thirty-minute reserve to zero	655 MW	655 MW
4	Voluntary industrial curtailment	260.74 MW Limited to 3 calls per year	260.74 MW Limited to 3 calls per year
5	General Public Appeals	74 MW Limited to 3 calls per year	74 MW Limited to 3 calls per year
6	5% remote voltage reduction	406.49 MW	406.49 MW
7	Emergency Purchases	Varies	Varies
8	Ten-minute reserves to zero	910 MW (400 MW maintained at load shedding)	910 MW (400 MW maintained at load shedding)
9	Customer disconnections	As needed	As needed
10	Adjustment used if IRM is lower than technical study margin	As needed	As needed

Attachment E1

IRM Topology



Notes

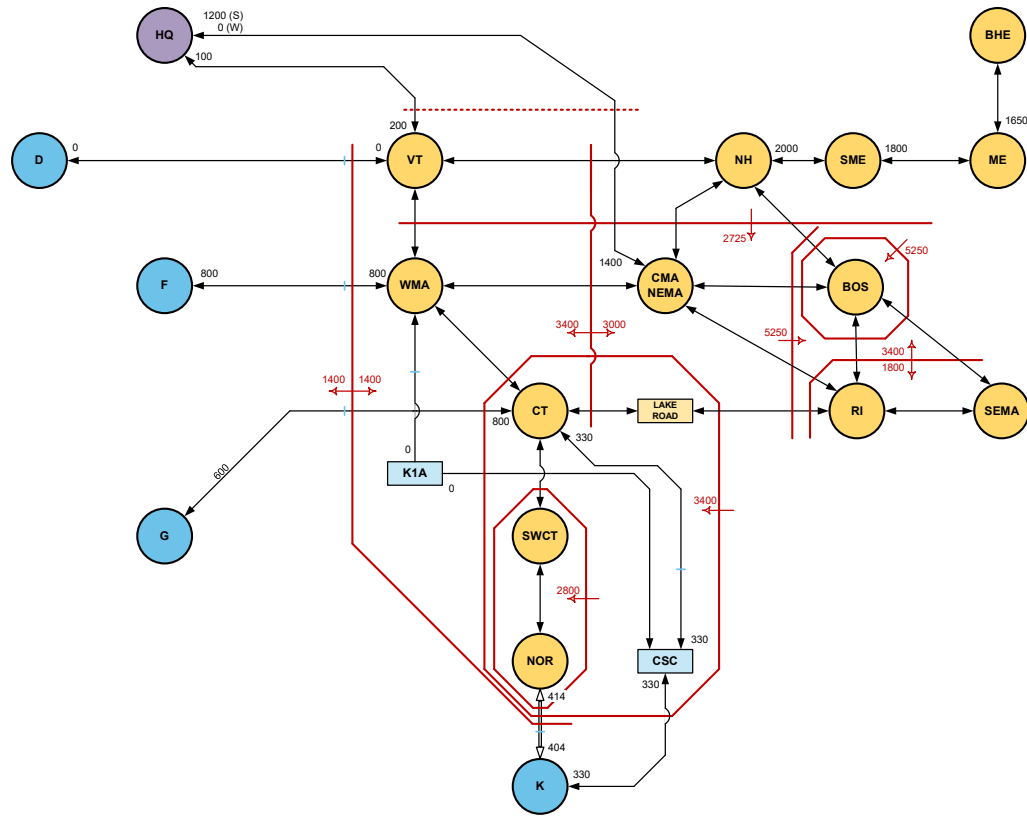
1. PJM to NY emergency assistance (EA) assumption for calculating the PJM-NY Western ties, PJM-G Group, and ABC Line Group flow distribution limit: 1500MW
2. NYCA EA simultaneous import limit: 3,500 MW
3. External areas representation based upon information received from the NPCC CP-8 WG

Legend

- Interface
 - Unidirectional Interface
 - Interface w/ Dynamic Ratings
 - Interface Group
 - Interface Group w/ Dynamic Ratings
 - Monitoring Interface Group
 - NYCA EA Interface Group Marker
 - "Dummy Bubble" i.e. no load
- NOTE: An interface is considered to not have a MW limitation if no number is specified

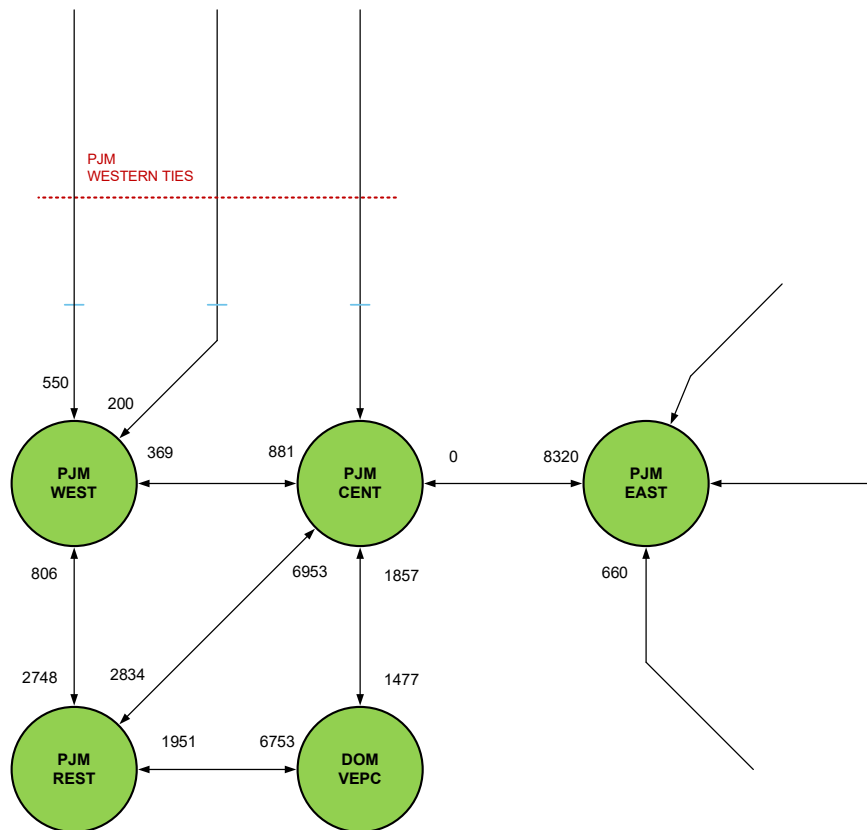
Attachment E2

ISO-NE 14 Bubble Model



Attachment E3

PJM Bubble Model



Attachment E4

10-year Cable Outage Rate	
2014-23	2015-24
5.31%	5.80%

The facilities included in these averages are VFT, HTP, Dunwoodie-South, Y49/Y50, CSC, Neptune, Norwalk-Northport, A-Line, and Champlain Hudson Power Express.*

*Inclusion of Champlain Hudson Power Express is a preliminary assumption for the PBC

Attachment E5

2025-2026 IRM Dynamic Emergency Assistance (EA) Interface Group Limits (MW)							
Area	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7
IESO	550	660	750	860	Maximum EA (1,950)		
ISONE	50	540	1,000	1,530	Maximum EA (1,804)		
PJM*	580	1,110	Maximum EA (1,415)				
HQ	280 Summer and 0 Winter						
Total EA**	1,470	2,600	Maximum EA (3,500)				

Dynamic EA PJM Cable Limits (MW)***							
Area	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7
HTP	90	173	Maximum EA (660)				
Neptune	90	173	Maximum EA (660)				
VFT	43	83	Maximum EA (315)				
A Line	14	28	Maximum EA (105)				

* PJM ties limits are only applicable to A, C, and G ties, and individual cables are derated separately, in proportion to the Bin 1 and Bin 2 PJM interface group limits listed above

** The total EA limit from all ties are derived from a separate regression analysis and may not match the sum of all group tie limits in each LFU bin

*** Limiting EA, does not affect contract capacity over UDRs

Attachment F

SCR Determinations 2025-2026 and 2026-2027 IRM Studies

SCR Performance for 2026-2027 IRM Study									
Super Zones	SCR Enrollments (MW) (Preliminary – To be updated for FBC)	Response Rate (%) by Hour of SCR Activation							Superzonal ACL to CBL Translation Factor (%)
		Event Hour 1	Event Hour 2	Event Hour 3	Event Hour 4	Event Hour 5	Event Hour 6	Event Hour 7	
A - E	783.4	82.33%	85.85%	85.54%	79.20%	75.61%	-	-	91.85%
F	103.5	72.95%	79.54%	82.43%	83.29%	83.40%	70.40%	66.99%	89.18%
G - I	90.6	61.08%	69.85%	72.12%	73.52%	74.47%	71.50%	-	83.46%
J	478.7	57.53%	62.61%	66.97%	70.70%	72.29%	66.09%	-	72.92%
K	30.6	51.20%	57.99%	63.12%	65.49%	64.82%	63.35%	52.63%	75.13%
All Zones	1,486.7	66.77%	72.08%	74.61%	74.35%	73.83%	66.38%	58.14%	

SCR Performance for 2025-2026 IRM Study									
Super Zones	SCR Enrollments (MW)	Response Rate (%) by Hour of SCR Activation							Superzonal ACL to CBL Translation Factor (%)
		Event Hour 1	Event Hour 2	Event Hour 3	Event Hour 4	Event Hour 5	Event Hour 6	Event Hour 7	
A - E	783.4	77.85%	83.57%	82.28%	70.24%	69.18%	0%	0%	93.45%
F	103.5	75.94%	82.20%	85.24%	86.18%	85.54%	70.40%	66.99%	90.58%
G - I	90.6	58.45%	67.53%	70.20%	71.94%	73.63%	71.48%	0%	84.07%
J	478.7	55.04%	60.60%	65.47%	67.78%	68.80%	66.09%	0%	74.29%
K	30.6	49.71%	56.72%	62.12%	64.63%	64.66%	63.36%	52.65%	76.11%
All Zones	1,486.7	62.01%	68.39%	71.35%	69.61%	69.93%	66.38%	58.14%	

* These values represent no growth from July ICAP based enrollments for the previous year. Differences in data in this column are due to software rounding updates since the 2023-2024 IRM study. Updated data aligns with 2023 Gold Book values.

** Performance Factor based on ACL methodology.

*** The SCR Adjustment factor captures two different performance derates: (1) Calculated Translation Factor (TF) between ACL and CBL values and (2) the Fatigue Factor (FF=1.00).

Attachment G

Wind Units Modeled

Wind				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	MARS Modeled Capability**
Arkwright Summit Wind Farm [WT]	A	78.4	78.4	78.4
Ball Hill Wind [WT]	A	100.0	107.5	100.0
Bliss Wind Power [WT]	A	100.5	100.5	100.5
Baron Winds [WT]	C	300.0	121.8	121.8
Canandaigua Wind Power [WT]	C	125.0	125.0	125.0
Eight Point Wind Energy Center [WT]	C	101.2	111.2	101.2
High Sheldon Wind Farm [WT]	C	112.5	118.1	112.5
Howard Wind [WT]	C	57.4	55.4	55.4
Orangeville Wind Farm [WT]	C	94.4	93.9	93.9
Wethersfield Wind Power [WT]	C	126.0	126.0	126.0
Altona Wind Power [WT]	D	97.5	97.5	97.5
Chateaugay Wind Power [WT]	D	106.5	106.5	106.5
Clinton Wind Power [WT]	D	100.5	100.5	100.5
Ellenburg Wind Power [WT]	D	81.0	81.0	81.0
Jericho Rise Wind Farm [WT]	D	77.7	77.7	77.7
Marble River Wind [WT]	D	215.2	215.2	215.2
Bluestone Wind [WT]	E	124.2	111.8	111.8
Hardscrabble Wind [WT]	E	74.0	74.0	74.0
Maple Ridge Wind [WT01]	E	231.0	231.0	231.0
Maple Ridge Wind [WT02]	E	90.7	90.8	90.7
Munnsville Wind Power [WT]	E	34.5	34.5	34.5
Number 3 Wind Energy [WT]	E	105.8	103.9	103.9
Roaring Brook [WT]	E	79.7	79.7	79.7
South Fork Wind Farm (Offshore)	K	136.0	132.0	132.0
Total		2,749.7	2,573.9	2,550.7

Attachment G1

Wind Units Not Currently Participating in ICAP Market

Wind					
Resource	Zone	Nameplate (MW)	CRIS (MW)	Summer Capability (MW)	MARS Modeled Capacity
Cassadaga Wind [WT]	A	126.5	126.0	0.0	0.0
Erie Wind [WT]	A	15.0	0.0	0.0	0.0
Steel Wind [WT]	A	20.0	0.0	0.0	0.0
Fenner Wind [WT]	C	30.0	30.0	0.0	0.0
Marsh Hill Wind Farm [WT]	C	16.2	0.0	0.0	0.0
Copenhagen Wind [WT]	E	79.9	79.9	0.0	0.0
Total		287.6	235.9	0.0	0.0

Attachment G2

Solar Units Modeled

Solar				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
Janis Solar [PV]	C	20.0	20.0	20.0
Morris Ridge Solar Energy Center	C	179.0	179.0	179.0
Puckett Solar [PV]	C	20.0	20.0	20.0
Albany County	F	20.0	20.0	20.0
Albany County II	F	20.0	20.0	20.0
Branscomb Solar [PV]	F	20.0	20.0	20.0
Darby Solar [PV]	F	20.0	20.0	20.0
East Point Solar	F	50.0	50.0	50.0
Grissom Solar [PV]	F	20.0	20.0	20.0
High River Solar	F	90.0	90.0	90.0
Pattersonville Solar [PV]	F	20.0	20.0	20.0
Regan Solar [PV]	F	20.0	20.0	20.0
ELP Stillwater Solar [PV]	F	20.0	20.0	20.0
Calverton Solar Energy Center [PV]	K	22.9	22.9	22.9
Long Island Solar Farm [PV]	K	31.5	31.5	31.5
Total		573.4	573.4	573.4

Attachment G3

Solar Units Not Modeled

Solar				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
Shoreham Solar [PV]*	K	25.0	0.0	0.0
Total		25.0	0.0	0.0

*Unit provides power at the distribution level rather than at the transmission level.

Attachment G4

Landfill Gas (LFG) Units Modeled

LFG				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
CHAFFEE [IC]	A	6.4	6.4	6.4
Model City Energy LFGE [IC]	A	5.6	5.6	5.6
Modern LFGE [IC]	A	6.4	6.4	6.4
Hyland LFGE [IC]	B	4.8	4.8	4.8
Mill Seat [IC]	B	6.4	6.4	6.4
Broome 2 [IC]	C	2.0	2.1	2.0
Broome LFGE [IC]	C	2.1	2.4	2.1
High Acres Group [IC] (23767)	C	9.6	9.6	9.6
Ontario LFGE [IC]	C	11.2	11.2	11.2
Seneca Energy Group [IC] (23797)	C	17.6	17.6	17.6
Clinton LFGE [IC]	D	6.4	6.4	6.4
DANC LFGE [IC]	E	6.4	6.4	6.4
Oneida-Herkimer LFGE [IC]	E	3.2	3.2	3.2
Colonie LFGTE [IC]	F	6.4	6.4	6.4
Fulton County Landfill [IC]	F	3.2	3.2	3.2
Albany LFGE	F	4.5	5.6	4.5
Totals		102.2	103.7	102.2

Attachment G5

Landfill Gas (LFG) Units Not Modeled

LFG				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
Chautauqua LFGE	A	9.6	0.0	0.0
Synergy Biogas	B	2.0	0.0	0.0
Madison County LFGE [IC]	E	1.6	0.0	0.0
Total		13.2	0.0	0.0

Attachment G6

Energy Storage Resources

Energy Storage				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
New Battery Units				
KCE NY 6	A	20	17	17
Arthur Kill Energy Storage 1	J	15	15	15
Pomona ESR	G	3	3	3
Total Energy Storage				35

Attachment G7

Fuel Availability Constraints

Attachment G7 – Fuel Constraint Derate by Tier*						
Tier	NYCA Load Conditions (MW)	Available Gas (MW)	Available Oil (MW)	Total Available Fuel (MW) (Gas + Oil)	Modeled UCAP (MW)	Derate (%)**
1	>26,000	300	11,525	11,825	19,230	39%
2	25,000 - 26,000	600		12,125		37%
3	24,000 - 25,000	2,550		14,075		27%
4	23,000 - 24,000	4,200		15,725		18%
5	22,000 - 23,000	5,575		17,100		11%
6	<22,000	No Constraint		No Constraint		No Constraint

* Assumed values for “available gas” and “available oil” reflect adjustments to address deactivations and resources not accounted for in developing the values presented to the NYSRC Executive Committee on 4/11/2025. <https://www.nysrc.org/wp-content/uploads/2025/04/4.1.2-Fuel-Availability-Constraints-Modeling-Phase-2-r1-04112025-EC-Attachment-4.1.2.pdf>

** Values represent aggregate level derate. Actual derate % applied on each unit may vary.

[illegible]