NYCA IRM Requirement Study 2025-2026 Preliminary Base Case (PBC) Model Assumptions Matrix

Draft V0.0

NYSRC

Installed Capacity Subcommittee Meeting #286

January 30, 2024

Load Forecast

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
1	Peak Load Forecast (Preliminary Base Case – Parametric & Sensitivities)	2023 Gold Book NYCA: 32,451.5 MW[1] NYC: 11,303 MY LI: 5090.1 MW G-J: 15,439 MW (Attachment A1)			
2	Peak Load Forecast (Final Base Case)	October 2023 Fcst NYCA: 31,765.6 MW[1] NYC: 11,170.6 MW LI: 5,080.3 MW G-J: 15,273.5 MW			
3	Load Shape (Multiple Load Shape)	Bin 1-2: 2013 Bin 3-4: 2018 Bin 5-7: 2017			
4	Load Forecast Uncertainty (LFU)	Zonal Model to reflect current data with input from Con Ed and LIPA. (Attachment A2)			
5	LFU Winter	Attachment A3			

[1] BTM:NG loads have been incorporated into these numbers.
[2] The loads associated with the BTM:NG program need to be added to these values.

Generation Parameters

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
6	Existing Generating Unit Capacities	2023 Gold Book Values. Use min. (DMNC vs. CRIS) capacity value			
7	Proposed New Units (Thermal) and re-ratings	0 MW of new Thermal resources (Attachment B1)			
8	Deactivations and Removals[3]	-140.1 MW unit deactivations (Attachment B2)			
9	Forced and Partial Outage Rates	Five-year (2018-2022) GADS data for each unit represented. Those units with less than five years – use representative data. (Attachment C)			
10	Planned Outages	Planned Outages are removed from the IRM study			

[3] Negative values in the 'SUMMER CRIS (MW)' column represent units that were previously expected to deactivate due to the NYSDEC "Peaker Rule" requirements for 2023 but did not deactivate. Therefore, they were reinstated in the 2024-25 IRM Study.

Generation Parameters

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
11	Summer Maintenance	Nominal 50 MW – divided equally between Zones J and K			
12	Combustion Turbine Derates	Derate based on temperature correction curves provided			
13	Existing and Proposed New Wind Units	136 MW of offshore wind capacity additions totaling 2,502.3 MW of qualifying wind. (Attachment B3)			
14	Wind Shape	Actual hourly plant output over the period 2018-2022. New units will use zonal hourly averages or nearby units. Normalized offshore wind shapes as published by NYISO over the period 2017-2021			
15	Existing and Proposed New Solar Resources	90 MW of utility-scale solar capacity additions totaling 304.4 MW of qualifying solar capacity. (Attachment B3)			
16	Solar Shape	Actual hourly plant output over the period 2018-2022. New units will use zonal hourly averages or nearby units.			

Generation Parameters

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
17	BTM:NG Program	One new BTM:NG resource: Oxbow (Zone A) – 3.2 MW, with the total of 148.8 MW (Attachment B5)			
18	Small Hydro Resources	Actual hourly plant output over the period 2018-2022			
19	Large Hydro	Probabilistic model based on five years of GADS data (2018-2022)			
20	Landfill Gas	Actual hourly plant output over the period 2018-2022.			
21	New ESR (Energy Storage Resources)	0 MW of new battery storage scheduled. 20 MW of total battery storage modeled.			
22	Energy Limited Resources (ELR)	Based upon elections made by August 1st, 2023 ES and small EL3 output limitations lifted at HB14			

Transactions- Imports and Exports

#	Parameter	2024 Model Assumptions	2025 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.			
24	Capacity Sales	Long Term firm sales Summer 265.3 MW			
25	FCM Sales from a Locality[4]	No sales modeled within study period			
26	Wheels through NYCA	300 MW HQ to NE equivalent contract			
27	New UDRs (Unforced capacity Deliverability Rights)	No new UDRs Identified			
28	New EDRs (External Deliverability Rights)	No new EDRs Identified			

[4] 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.

Topology

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
29	Interface Limits	Updates to the forward limits of Central East, Central East Group, Marcy South, Capital to Hudson Valley, UPNYSENY, and UPNY-ConED interfaces due to the partial completion of Segment B of the AC Transmission Project. The delay of the Dover PAR construction is captured.			
30	New Transmission	None Identified			
31	AC Cable Forced Outage Rates	All existing Cable EFORds for NYC and LI to reflect most recent five-year history (2018-2022) (Attachment E4)			
32	UDR Line Unavailability	Five-year history of forced outages (2018-2022)			

Emergency Operating Procedures

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
33	Special Case Resources	July 2022 – 1,281 MW based on registrations and modeled as 896.5 MW of effective capacity. Monthly variation based on historical experience.			
34	Other EOPs	400 MW of 10-min reserves maintained at load shedding 929.8 MW of non-SCR/non-EDRP resources (Attachment D)			
35	EOP Structure	10 EOP steps modeled EOP order updated to align with the emergency operating procedure sequence			

External Control Areas

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
36	PJM	Load and Capacity data will be provided by ISONE/NPCC CP-8 Data may be adjusted per NYSRC Policy 5. (Attachment E)			
37	ISONE, Quebec, IESO	Load and Capacity data will be provided by ISONE/NPCC CP-8 Data may be adjusted per NYSRC Policy 5. (Attachment E)			
38	External Adjustments per Policy 5	If needed, add load to externals proportional to existing excess capacity.			
39	Reserve Sharing	All NPCC Control Areas indicate that they will initially share reserves equally among all members and then non-members.			
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 are also reduced by Bin			

Miscellaneous

#	Parameter	2024 Model Assumptions	2025 Model Assumptions	Basis for Recommendation	Model Change
41	MARS Model Version	4.14.2179			
42	Environmental Initiatives	No new rules for 2024 Capability Year			

To be updated for 2025-2026 IRM Study

Attachment A1

NYCA Summer Load Forecast Coincident and Non-Coincident Peak: 2024 Final Base Case (FBC) and 2024 PBC

2024 FBC													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	2,764	2,095.9	2,766.8	711.5	1,360.7	2,324.8	2,177.2	638.9	1,410	11,170.6	5,080.3		
CP - Forecast	2,664.7	2,050.6	2,694.7	692.9	1,323.7	2,279.2	2,131	624.8	1,379	10,925.1	4,999.9	31,765.6	
G-J Peak - Forecast							2,161.2	633.7	1,398.5	11,080.1			15,273.5

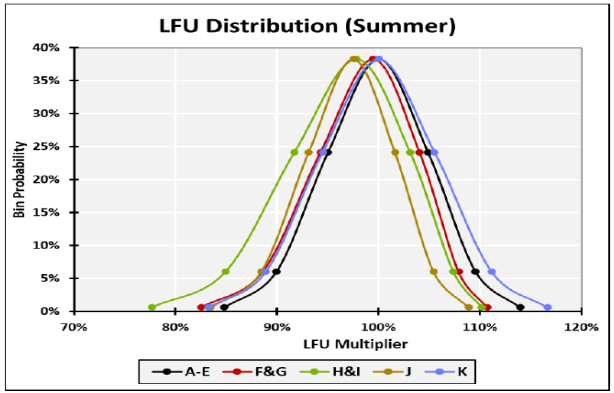
2024 PBC													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	2,791	2,237.1	2,851.3	712	1,468	2,453	2,180	632	1,424	11,303	5,090.1		
CP - Forecast	2,701	2,190.1	2,783.3	692	1,428	2,412	2,137	620	1,397	11,083	5,008.1	32,451.5	
G-J Peak - Forecast							2,165	628	1,416	11,230			15,439

Delta													
Area	A	B	C	D	E	F	G	H	I	J	K	NYCA	G_J
NCP - Forecast	-27	-141.2	-84.5	-0.5	-107.3	-128.2	-2.8	6.9	-14	-132.4	-9.8		
CP - Forecast	-36.3	-139.5	-88.6	0.9	-104.3	-132.8	-6	4.8	-18	-157.9	-8.2	-685.9	
G-J Peak - Forecast							-3.8	5.7	-17.5	-149.9			-165.5

Attachment A2

NYCA Summer Load Forecast Uncertainty Model: 2024 and 2025

Load Forecast 2024



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 2025

To be updated for 2025-2026 IRM Study

Attachment A3

NYCA Winter Load Forecast Uncertainty Model: 2024

Bin	Bin z	Bin Probability	NYCA
Bin 1	2.74	0.62%	110.37%
Bin 2	1.79	6.06%	106.37%
Bin 3	0.89	24.17%	102.75%
Bin 4	0.00	38.29%	99.42%
Bin 5	-0.89	24.17%	96.29%
Bin 6	-1.79	6.06%	93.30%
Bin 7	-2.74	0.62%	90.41%

To be updated for 2025-2026 IRM Study

Attachment B1

New Thermal Units and Unit Re-Ratings

New Thermal Units and Unit Re-ratings (summer ratings)					
Project or Generator Name	Zone	2024 Gold Book (MW) CRIS	2024 Gold Book (MW) DMNC	New or Incremental (MW)	2025 MARS Model (MW)
New Units					
Total New Units and Uprates (MW)					

To be updated for 2025-2026 IRM Study

Attachment B2

Deactivations and Removals

Unit Removal since 2024-2025 IRM Study			
Generator Name	Type	Zone	SUMMER CRIS (MW)
Total Removals			

To be updated for 2025-2026 IRM Study

Attachment B3

New Intermittent Resources

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

Solar				
Total Solar				

To be updated for 2025-2026 IRM Study

Attachment B4

New Energy Storage Resources

Energy Storage				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
New Battery Units				
Total New Energy Storage				

Attachment B5

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

Attachment B5 - Units in the Behind the Meter Net Generation Program*			
Generator Name	**Zone**	**Resource Value (MW)[5]**	**Peak Load Adjustment (MW)[6]**
Existing:			
Stony Brook	K	40.7	38.9
Greenidge 4	C	86.6	44.1
Lyons Falls Hydro	E	0.0	1.8
KIAC_JFK	J	126.3	15.2
Red Rochester	B	76.2	45.6
Oxbow (Fortistar - N.Tonawanda)	A	57.3	3.2
Total BTM-NG			**148.8**

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

[5] Based on adjusted Dependable Maximum Gross Capability (DMGC) value.

[6] Based on Average Coincident Host Load (ACHL).

To be updated for 2025-2026 IRM Study

Attachment C

NYCA Five Year Derating Factors

To be updated for 2025-2026 IRM Study

Attachment D

Emergency Operating Procedures

Step	Procedure	2024 IRM MW Value	2025 IRM MW Value
1	Special Case Resources – Load, Gen	1,281 MW Enrolled/ 896.5 MW Modeled	
2	5% manual voltage Reduction	113.11 MW	
3	Thirty-minute reserve to zero	655 MW	
4	Voluntary industrial curtailment	267.17 MW	
5	General Public Appeals	74 MW	
6	5% remote voltage reduction	475.56 MW	
7	Emergency Purchases	Varies	
8	Ten-minute reserves to zero	910 MW (400 MW maintained at load shedding)	
9	Customer disconnections	As needed	
10	Adjustment used if IRM is lower than technical study margin	As needed	

To be updated for 2025-2026 IRM Study

Attachment E1

IRM Topology

To be updated for 2025-2026 IRM Study

Attachment E2

ISO-NE 14 Bubble Model

To be updated for 2025-2026 IRM Study

Attachment E3

PJM Bubble Model

To be updated for 2025-2026 IRM Study

Attachment E4

5 Year Average Cable Outage Rate	
2017-21	2018-22
7.06%	4.83%

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

Attachment F

To be updated for 2025-2026 IRM Study

SCR Determinations 2024 and 2025 IRM Studies

SCR Performance for 2025 IRM Study						
Super Zones	Enrollments (July 2023 - estimated)	Forecast (2024)[6]	Performance Factor[7]	UCAP (2024)	Adjustment Factor[8]	Model Value
A - F						
G - I						
J						
K						
Totals						
					Overall Performance =	

SCR Performance for 2024 IRM Study						
Super Zones	Enrollments (July 2022 - estimated)	Forecast (2023)[6]	Performance Factor[7]	UCAP (2023)	Adjustment Factor[8]	Model Value
A - F	719.1	719.1	0.871	626.3	0.942	589.8
G - I	84.3	84.3	0.778	65.5	0.843	55.3
J	442.4	442.4	0.706	312.4	0.745	232.7
K	35.4	35.3	0.698	24.6	0.762	18.8
Totals	1,281.0	1,281.0		**1,028.9**		**896.5**
					Overall Performance = 70.0%	

6. 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 IRM. Updated data aligns with 2023 Gold Book values.
7. Performance Factor based on ACL methodology.
8. The SCR Adjustment factor captures two different performance derates; 1) Calculated Translation Factor (TF) between ACL and CBL values, and the Fatigue Factor (FF=1.00).

Attachment G

To be updated for 2025-2026 IRM Study

Wind Units Modeled

Wind				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	MARS Modeled Capability**
Bliss Wind Power [WT]	A	100.5	100.5	100.5
Canandaigua Wind Power [WT]	C	125.0	125.0	125.0
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
Hardscrabble Wind [WT]	E	74.0	74.0	74.0
Madison Wind Power [WT]	E	11.5	11.6	11.5
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
Arkwright Summit Wind Farm [WT]	A	78.4	78.4	78.4
Eight Point Wind Energy Center [WT]	C	101.2	111.2	101.2
Bluestone Wind [WT]	E	111.8	111.8	111.8
Number 3 Wind Energy [WT]	E	103.9	103.9	103.9
Ball Hill Wind [WT]	A	100.0	100.0	100.0
Baron Winds [WT]	C	300.0	121.8	121.8
South Fork Wind Farm (Offshore)	K	96.0	96.0	96.0
South Fork Wind Farm II (Offshore)	K	40.0	40.0	40.0
Total		**2,667.2**	**2,502.3**	**2,486.5**

To be updated for 2025-2026 IRM Study

Attachment G1

Wind Units Not Currently Participating in ICAP Market

Wind					
Resource	Zone	Nameplate (MW)	CRIS (MW)	Summer Capability (MW)	MARS Modeled Capacity
Erie Wind [WT]	A	15.0	0.0	0.0	0.0
Steel Wind [WT]	A	20.0	0.0	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
Roaring Brook [WT]	E	79.7	79.7	0.0	0.0
Fenner Wind [WT]	C	30.0	30.0	0.0	0.0
Cassadaga Wind [WT]	A	126.0	126.0	0.0	0.0
Total		**366.8**	**315.6**	**0.0**	**0.0**

To be updated for 2025-2026 IRM Study

Attachment G2

Solar Units Modeled

Solar				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
Long Island Solar Farm [PV]	K	31.5	31.5	31.5
Calverton Solar Energy Center [PV]	K	22.9	22.9	22.9
Brandscomb Solar [PV]	F	20.0	20.0	20.0
Darby Solar [PV]	F	20.0	20.0	20.0
Grissom Solar [PV]	F	20.0	20.0	20.0
Janis Solar [PV]	C	20.0	20.0	20.0
Pattersonville Solar [PV]	F	20.0	20.0	20.0
Puckett Solar [PV]	C	20.0	20.0	20.0
ELP Stillwater Solar [PV]	F	20.0	20.0	20.0
Regan Solar [PV]	F	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
East Point Solar	F	50.0	50.0	50.0
Total		**304.4**	**304.4**	**304.4**

Attachment G3

Solar Units Not Modeled

Solar				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
Shoreham Solar [PV]*	K	24.9	0.0	0.0
Total		**24.9**	**0.0**	**0.0**

*Unit provides power at the distribution 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
CHAFEE [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	5.6
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 Biomass	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**

Assumption Matrix History

Date	Ver	Preliminary Base Case	Date	Ver	Final Base Case
01/19/2024	V0.0	Preliminary assumptions without attachments			