

# NYCA IRM Requirement Study 2027-2028 Preliminary Base Case (PBC) Model Assumptions Matrix

Draft V1.0

NYSRC

**Installed Capacity Subcommittee Meeting #314**

March 04, 2026

# Load Forecast

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
1a	Peak Load Forecast (Preliminary Base Case – Parametric & Sensitivities)	2025 Gold Book* NYCA: 32,163.0 MW NYC: 11,048.2 MW LI: 5,111.2 MW G-J: 15,298.2 MW			
1b	Winter Peak Load Forecast (Preliminary Base Case – Parametric & Sensitivities)	2025 Gold Book* NYCA: 25,093.0 MW NYC: 7,648.2 MW LI: 3,328.2 MW G-J: 10,766.3 MW			
2a	Peak Load Forecast (Final Base Case)	October 2025 Fcst* NYCA: 31,648.2 MW NYC: 11,088.8 MW LI: 5,127.8 MW G-J: 15,304.8 MW (Attachment A1-a)			
2b	Winter Peak Load Forecast (Final Base Case)	October 2025 Fcst* NYCA: 24,522.6 MW NYC: 7,647.4 MW LI: 3,327.4 MW G-J: 10,775.4 MW (Attachment A1-b)			

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

# Load Forecast

#	Parameter	2026-2027 Model Assumptions	2027-2028 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			
4a	Load Forecast Uncertainty (LFU)	Zonal Model to reflect current data with input from Con Ed and LIPA. (Attachment A2)			
4b	LFU Winter	Attachment A3			
5a	Annual Energy Forecast (Preliminary Base Case)	2025 Gold Book NYCA: 155,460 GWh NYC: 50,100 GWh LI: 20,040 GWh			
5b	Annual Energy Forecast (Final Base Case)	October 2025 Fcst NYCA: 152,996.0 MW NYC: 50,252.4 MW LI: 20,376.3 MW (Attachment A4)			

# Generation Parameters

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
6a	Modeled ICAP – Summer	NYCA: 42,404.70 MW NYC: 10,492.21 MW LI: 6,061.71 MW G-J: 15,293.45 MW			
6b	Modeled ICAP – Winter	NYCA: 41,895.83 MW NYC: 9,745.54 MW LI: 6,494.56 MW G-J: 14,757.43 MW			
7	Existing Generating Unit Capacities	2025 Gold Book Values. Use min. (DMNC vs. CRIS) capacity value			
8	Proposed New Units (Thermal) and re-ratings	0 MW new units or re-ratings for Thermal resources (Attachment B1)			
9	Deactivations and Removals	114 MW* generator deactivations and removals (Attachment B2)			
10	Forced and Partial Outage Rates	Five-year (2020-2024) GADS data for each unit represented. Those units with less than five years – use representative data. (Attachment C1)			
11	Planned Outages	Planned Outages are removed from the IRM study			

\*Value as modeled in the 2026-2027 IRM FBC Special Sensitivity

# Generation Parameters

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
12	Summer Maintenance	Nominal 50 MW – divided equally as 2 negative 25 MW units in Load Zones J and K			
13	Combustion Turbine Derates	Derate based on temperature correction curves provided			
14	Existing and Proposed New Wind Units	151.6 MW* of land-based wind capacity additions. (Attachment B3) 2,702.3 MW* of qualifying wind. (Attachment G)			
15a	Land-Based Wind Shape	Actual hourly plant output over the period 2020-2024. New units will use zonal hourly averages or nearby units.			
15b	Offshore Wind Shape	Normalized offshore wind shapes as published by NYISO over the period 2020-2024			
16	Existing and Proposed New Solar Resources	0 MW of utility-scale solar capacity additions totaling 573.4 MW of qualifying solar capacity. (Attachments B3 and G2)			
17	Solar Shape	Actual hourly plant output over the period 2020-2024. New units will use zonal hourly averages or nearby units.			

\*Values as modeled in the 2026-2027 IRM FBC Special Sensitivity

# Generation Parameters

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
18	BTM:NG Program	No new BTM:NG resources, total Net ICAP of 265.2 MW (361.8 MW Gen, 96.6 MW Load) (Attachment B5)			
19	Small Hydro Resources	Actual hourly plant output over the period 2020-2024			
20	Large Hydro	Probabilistic model based on five years of GADS data (2020-2024)			
21	Landfill Gas (LFG)	Actual hourly plant output over the period 2020-2024			
22	New Energy Storage Resources (ESRs)	18 MW of new battery storage scheduled. (Attachment B4) 35 MW of total battery storage modeled. (Attachment G6)			
23	Energy Limited Resources (ELRs)	Based upon elections made by August 1 <sup>st</sup> , 2025  ES and small EL3 output limitations lifted at HB14			
24	Distributed Energy Resources (DERs)	480.5 MW of total DERs (Attachment B6)			

# Transactions- Imports and Exports

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
25	Capacity Purchases	Existing Rights: PJM – 1,080 MW, HQ – 1,190 MW in Summer, Varied (0 – 914 MW) in Winter. All contracts modeled as equivalent contracts.			
26	Capacity Sales	Long Term firm sales Summer 266.7 MW			
27	Forward Capacity Market (FCM) Sales from a Locality*	No sales modeled within study period			
28	Wheels through NYCA	300 MW HQ to ISO-NE equivalent contract			
29	New Unforced Capacity Deliverability Rights (UDRs)	Champlain Hudson Power Express: 1,250 MW new UDR from HQ to Load Zone J			
30	New External Deliverability Rights (EDRs)	No new EDRs identified			

\* 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	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
31	Interface Limits	Updates to the Dysinger East forward limit, West Central reverse limit, Moses South forward limit, Central East forward limits, Sprain Brook Dunwoodie South forward limit, Long Island export limits, and Norwalk Harbor to Long Island import limit (Attachment E1)			
32	New Transmission	Addition of Smart Path Connect project			
33	AC Cable Forced Outage Rates	All existing Cable EFORDs for NYC and LI to reflect most recent ten - year history (2015-2024) (Attachment E4)			
34	UDR Line Unavailability	Ten-year history of forced outages (2015-2024)*			

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

# Emergency Operating Procedures

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
35	Special Case Resources (SCRs)	<p>July 2025 – 898.1 MW based on registrations and modeled with maximum capacity of 724.2 MW derated by hourly response rates.</p> <p>Output limitations will be lifted 3 hours prior to the preliminary base case weighted average summer peak net load hour for Load Zones A-F (HB16) and G-K (HB14).</p>			
36	Other Emergency Operating Procedures (EOPs)	<p>400 MW of 10-min reserves maintained at load shedding</p> <p>Voluntary Curtailment limited to 3 calls per month.</p> <p>Public Appeals limited to 3 calls per year.</p> <p>866.8 MW of non-SCR/non-EDRP resources (Attachment D)</p>			
37	EOP Structure	10 EOP steps modeled			

# External Control Areas

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
38	PJM	PJM no longer updating their MARS model for NPCC. (Attachment E3)			
39	ISO-NE, Quebec, IESO	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)			
40	External Adjustments per Policy 5	If needed, add load to externals proportional to existing excess capacity.			
41	Reserve Sharing	All NPCC Control Areas indicate that they will initially share reserves equally among all members and then non-members.			
42	Emergency Assistance	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)			

# Miscellaneous

#	Parameter	2026-2027 Model Assumptions	2027-2028 Model Assumptions	Basis for Recommendation	Model Change
43	MARS Model Version	5.8.3837	5.10.4171	New MARS version completed testing by NYISO	N
44	Environmental Initiatives	No new rules for the 2026-2027 Capability Year			



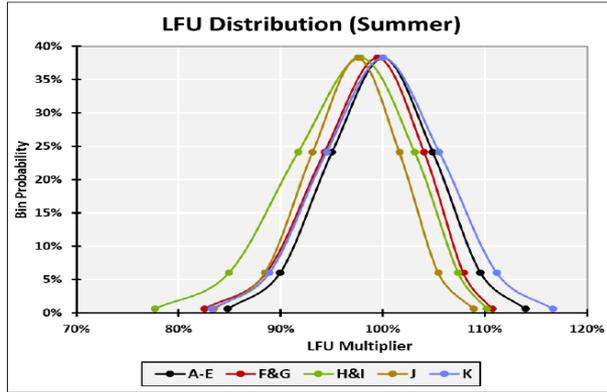


# Attachment A2

## NYCA Summer Load Forecast Uncertainty Model: 2026 and 2027

Load Forecast 2026

Load Forecast 2027



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: 2027

Bin	Bin z	Bin Probability	NYCA (2026-2027 IRM)	NYCA (2027-2028 IRM)	Difference
1	2.74	0.62%	110.48%		
2	1.79	6.06%	106.68%		
3	0.89	24.17%	103.22%		
4	0.00	38.29%	100.00%		
5	-0.89	24.17%	96.96%		
6	-1.79	6.06%	94.02%		
7	-2.74	0.62%	91.16%		



# Attachment B1

## New Thermal Units and Unit Re-Ratings

New Thermal Units and Unit Re-ratings (summer ratings)					
Project or Generator Name	Zone	2026 Gold Book (MW) CRIS	2026 Gold Book (MW) DMNC	New or Incremental (MW)	2027 MARS Model (MW)
New Units					
Total New Units and Uprates (MW)					





# Attachment B4

## New Energy Storage Resources

Energy Storage				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
New Battery Units				
<b>Total New Energy Storage</b>				

# Attachment B5

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

Generator Name	Zone	Resource Value (MW)**	Peak Load Adjustment (MW)**
<b>Existing:</b>			
Stony Brook	K	0.0	38.4
Greenidge 4	C	101.0	2.6
Lyons Falls Hydro	E	0.0	0.0
KIAC_JFK	J	128.0	17.4
Red Rochester	B	81.1	36.6
Oxbow (Fortistar - N.Tonawanda)	A	51.7	1.6
<b>Total BTM-NG</b>		<b>361.8</b>	<b>96.6</b>

\* 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).

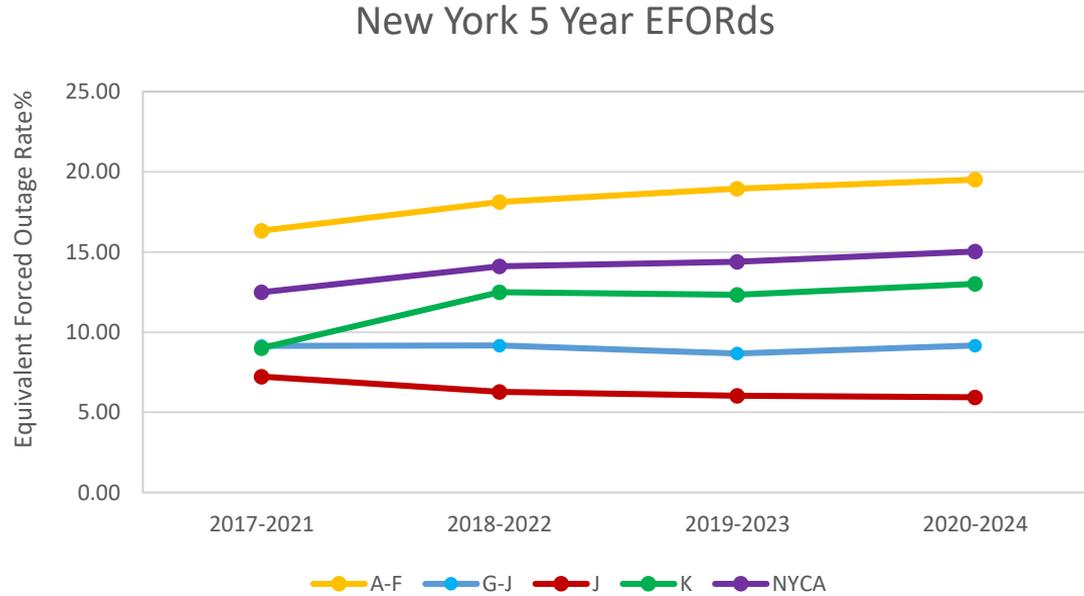
# Attachment B6

## Distributed Energy Resources

Distributed Energy Resources		
Capacity Region	Aggregation Type(s)	ICAP (MW)
A-E	Demand Side Resource (DSR)	480.4
F	-	0
G-I	Demand Side Resource (DSR)	0.1
J	-	0
K	-	0
Total Distributed Energy Resources		480.5

# Attachment C1

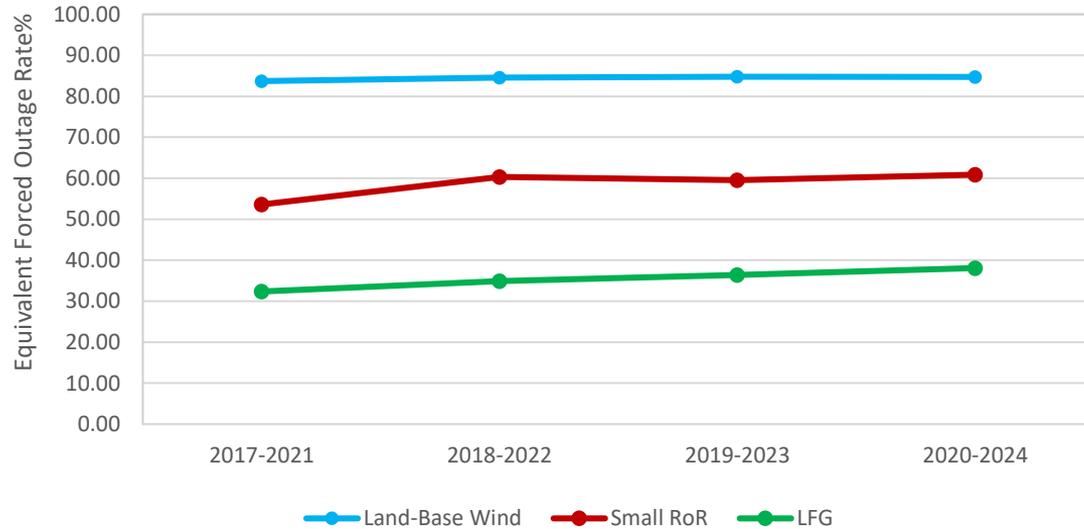
## NYCA Five Year Derating Factors – All Resources



# 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

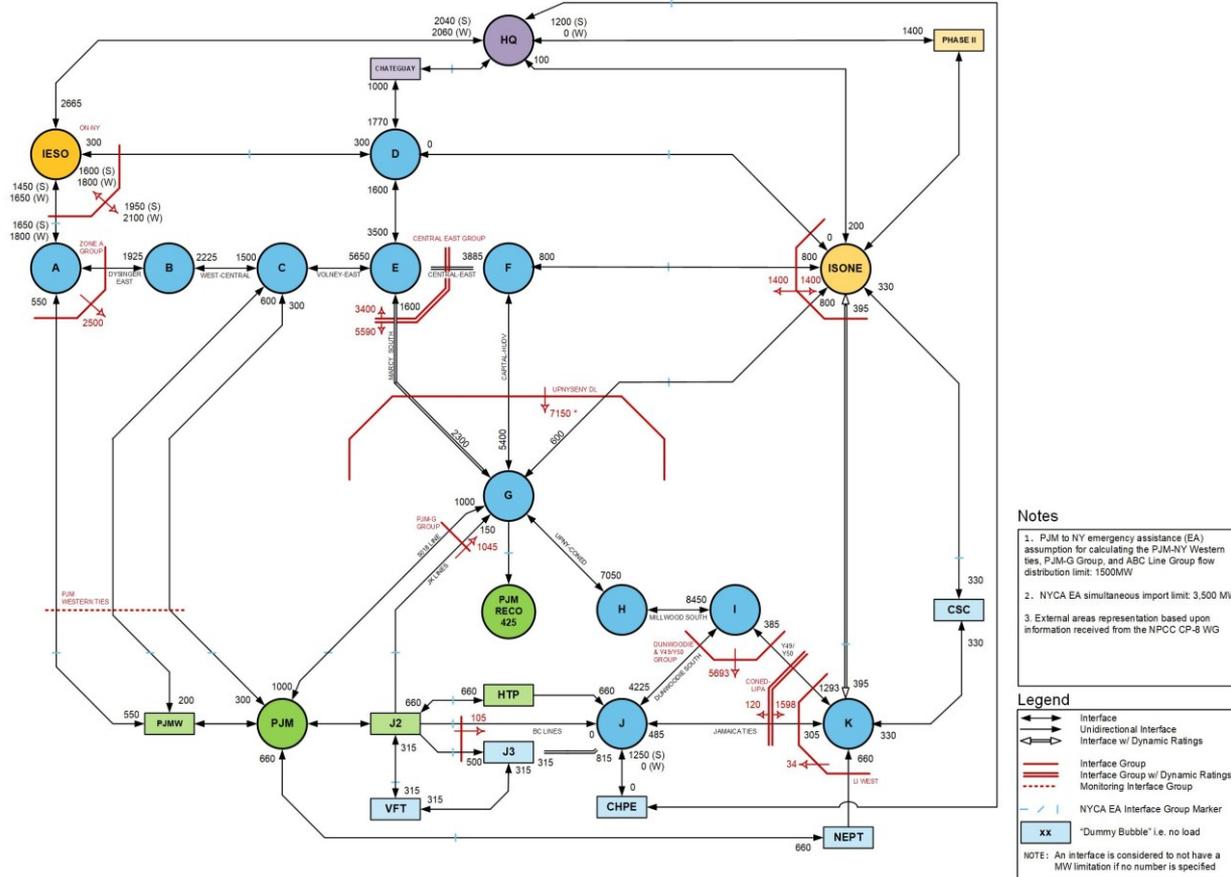
# Attachment D

## Emergency Operating Procedures

Step	Procedure	2026-2027 IRM MW Value	2027-2028 IRM MW Value
1	Special Case Resources – Load, Gen	898.1 MW Enrolled / 724.15 MW Modeled	
2	5% manual voltage Reduction	64.58 MW	
3	Thirty-minute reserve to zero	655 MW	
4	Voluntary industrial curtailment	267.12 MW Limited to 3 calls per month	
5	General Public Appeals	74 MW Limited to 3 calls per year	
6	5% remote voltage reduction	461.06 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	

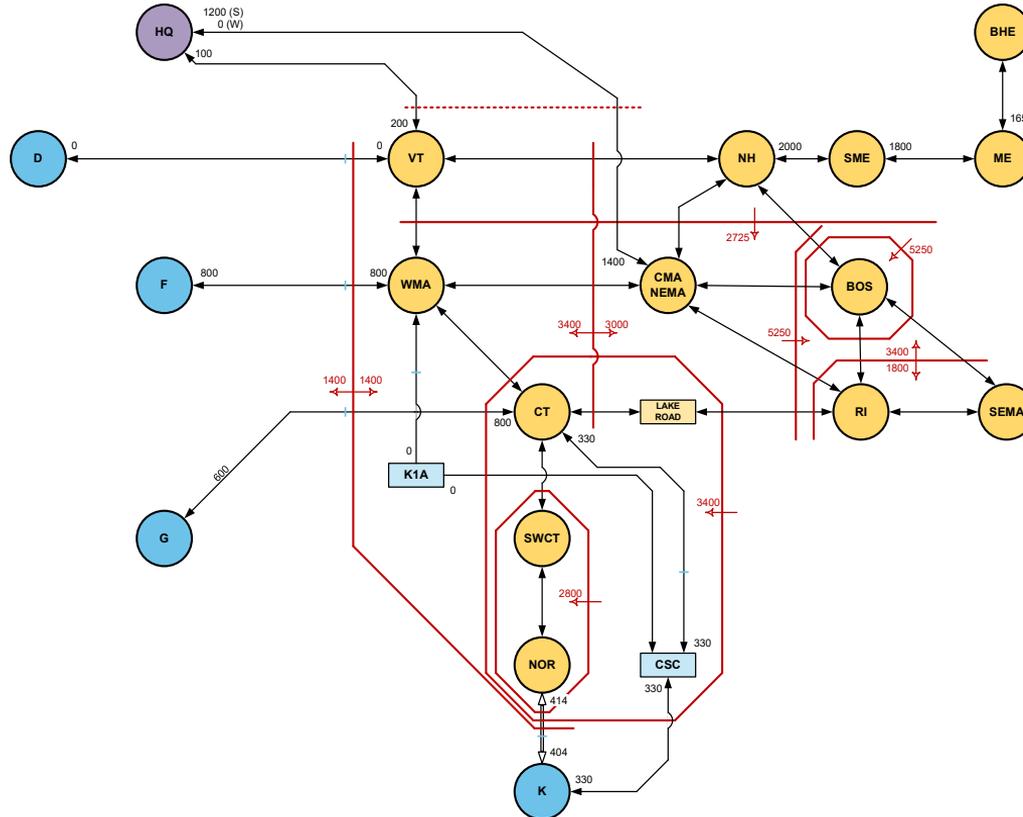
# Attachment E1

## IRM Topology



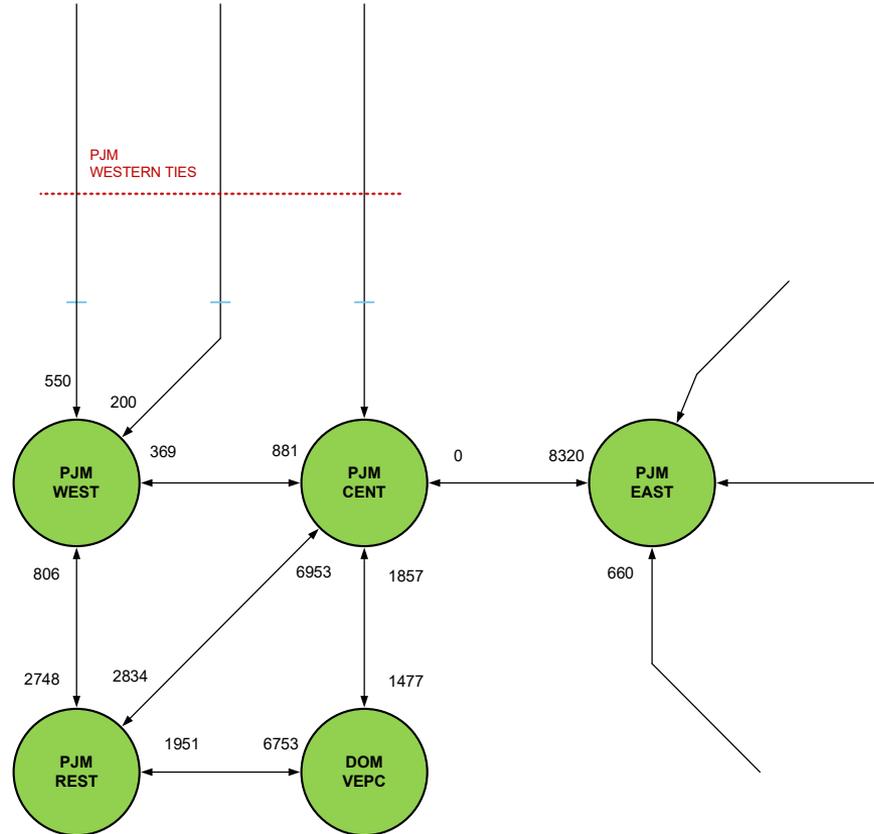
# Attachment E2

## ISO-NE 14 Bubble Model



# Attachment E3

## PJM Bubble Model



# Attachment E4

10-year Cable Outage Rate	
2015-2024	2016-2025
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.

# Attachment E5

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						
<b>Total EA**</b>	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 2026 Model Assumptions and 2026-2027 IRM Studies

SCR Performance for 2027-2028 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									
F									
G - I									
J									
K									
All Zones									

SCR Performance for 2026-2027 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	260.5	82.33%	85.85%	85.54%	79.20%	75.61%	0%	0%	91.85%
F	87.8	72.95%	79.54%	82.43%	83.29%	83.40%	70.40%	66.99%	89.18%
G - I	73.9	61.08%	69.85%	72.12%	73.52%	74.47%	71.50%	0%	83.46%
J	453.0	57.53%	62.61%	66.97%	70.70%	72.29%	66.09%	0%	72.92%
K	23.1	51.20%	57.99%	63.12%	65.49%	64.82%	63.35%	52.63%	75.13%
All Zones	898.1	66.77%	72.08%	74.61%	74.35%	73.83%	66.38%	58.14%	

# Attachment G

## Wind Units Modeled

To be updated for 2027-2028 IRM Study

Wind				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
Arkwright Summit Wind Farm [WT]	A	78.4	78.4	78.4
Ball Hill Wind [WT]	A	100	107.5	100
Bliss Wind Power [WT]	A	100.5	100.5	100.5
Erie Wind [WT]	A	15	15	15
Steel Wind [WT]	A	20	20	20
Baron Winds (Phase 1 and 2) [WT]	C	300	238.4	238.4
Canandaigua Wind Power [WT]	C	125	125	125
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	126	126
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	81	81
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	74	74
Maple Ridge Wind [WT01]	E	231	231	231
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	132	132
<b>Total</b>		<b>2,784.7</b>	<b>2,725.5</b>	<b>2,702.3</b>

# Attachment G1

## Wind Units Not Currently Participating in ICAP Market

Wind					
Resource	Zone	Nameplate (MW)	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
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
Cassadaga Wind [WT]	A	126.5	0.0	0.0	0.0
<b>Total</b>		<b>252.6</b>	<b>109.9</b>	<b>0.0</b>	<b>0.0</b>

# 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
<b>Total</b>		<b>573.4</b>	<b>573.4</b>	<b>573.4</b>

# 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
<b>Total</b>		<b>25.0</b>	<b>0.0</b>	<b>0.0</b>

\*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
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
<b>Totals</b>		<b>97.4</b>	<b>98.9</b>	<b>97.4</b>

# 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
<b>Total</b>		<b>13.2</b>	<b>0.0</b>	<b>0.0</b>

# Attachment G6

## Energy Storage Resources

Energy Storage				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability vs. CRIS
KCE NY 6	A	20	17	17
Arthur Kill Energy Storage 1	J	15	15	15
Pomona ESR	G	3	3	3
<b>Total</b>		<b>38</b>	<b>35</b>	<b>35</b>

# 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	11,700	12,000	19,720	39%
2	25,000 - 26,000	600		12,300		38%
3	24,000 - 25,000	2,550		14,250		28%
4	23,000 - 24,000	4,200		15,900		19%
5	22,000 - 23,000	5,575		17,275		12%
6	<22,000	No Constraint				No Constraint

\* As modeled in the 2026-2027 IRM FBC Special Sensitivity

\*\* 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.

