New York ISO
Independent System Operator

NYCA IRM Requirement Study 2021-2022 Final Base Case (FBC) Model Assumptions Matrix

Maeve Conway

Resource Adequacy

ICS #238

September 29, 2020

Load Forecast Uncertainty

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
1	Peak Load Forecast (Preliminary Base Case – Parametric & Sensitivities)	2019 Gold Book NYCA: 32,202MW[1] NYC: 11,651 MW LI: 5,134 MW G-J: 15,911 MW	2020 Gold Book NYCA: 32,129MW[1] NYC: 11,460 MW LI: 5,139 MW G-J: 15,660 MW	Most recent Gold Book Forecast is used for Preliminary Base Case parametric study and sensitivity cases	N	Low (-)
2	Peak Load Forecast (Final Base Case)	October 2019 Fcst. NYCA: 32, 170 MW[2] NYC: 11,513 MW LI: 5,216 MW G-J: 15,776 MW	October 2020 Fcst. NYCA: 32,243 MW[2] NYC: 11,103.3 MW LI: 5,282.0 MW G-J: 15,393.3 MW	Forecast based on examination of 2020 weather normalized peaks	N	TBD
3	Load Shape (Multiple Load Shape)	Bin 1: 2006 Bin 2: 2002 Bins 3-7: 2007	Bin 1: 2006 Bin 2: 2002 Bins 3-7: 2007	ICS Recommendation	N	None
4	Load Forecast Uncertainty (LFU)-	Zonal Model to reflect current data with input from Con Ed and LIPA. (Attachment A)	Zonal Model to reflect current data with input from Con Ed and LIPA. (Attachment A1)	Based on TO and NYISO data analyses	N	Medium (+)
5	LFU Winter	Attachment A1	Attachment A2	Based on TO and NYISO data analyses	N	None

*(-) indicates a reduction in IRM while (+) indicates an increase. Range: Low < 0.5%, Medium 0.5% - 1%, High > 1%, Minimal indicates there may be some movement but within 0 to +/- 0.1%.
New Capacity resources will continue to be tracked by the NYISO. The Final Base Case resource list is subject to change based on project status' by October 2020.
1 The loads associated with the BTM-NG program need to be added to these values.
2 BTM-NG loads have been incorporated into these numbers.

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Generation Parameters

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
6	Existing Generating Unit Capacities	2019 Gold Book values. Use min. (DMNC vs. CRIS) capacity value	2020 Gold Book Values. Use min. (DMNC vs. CRIS) capacity value	Latest Gold Book publication	N	Minimal (+)
7	Proposed New Units (Thermal) and re-ratings	1,020 MW of new Thermal resources, plus 0 MW of project related re-ratings. (Attachment B1)	0 MW of new Thermal resources[3], plus 56.6 MW of project related re-ratings. (Attachment B1)	Latest Gold Book publication, NYISO interconnection queue and generation notifications	N	Minimal (-)
8	Deactivations and Removals*	1,205.9 MW of unit deactivations (Attachment B2)	1,104 MW of unit deactivations and 192.7 MW of unit removals (Attachment B2)	Latest Gold Book publications and generator notifications	N	Low (-)
9	Forced and Partial Outage Rates	Five-years (2014-2018) GADS data for each unit represented. Those units with less than five years – use representative data. (Attachment C)	Five-year (2015-2019) GADS data for each unit represented. Those units with less than five years – use representative data. (Attachment C)	Transition Rates representing the Equivalent Forced Outage Rates (EFORd) during demand periods over the most recent five-year period	N	Minimal (-)
10	Planned Outages	Based on schedules received by the NYISO and adjusted for history	Based on schedules received by the NYISO and adjusted for history	Updated schedules	N	Low (+)

[3] Hudson Ave GT 3 is returning from IIFO. This unit was not removed from the Preliminary Base Case while in IIFO and will continue to be modeled in the Final Base Case.

*Units that did not participate in the Capacity Market have been removed from this year's study

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Generation Parameters

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
11	Summer Maintenance	Nominal 50 MWs – divided equally between Zones J and K	Nominal 50 MWs – divided equally between Zones J and K	Review of most recent data	N	None
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's curves	N	None
13	Existing and Proposed New Wind Units[4]	0 MW of Wind Capacity additions totaling 1,891.7 MW of qualifying wind (Attachment B3)	126.5 MW of Wind Capacity additions totaling 1865.7 MW of qualifying wind (Attachment B3)	ICAP units based on RPS agreements, interconnection queue and ICS input.	N	Low (+)
14	Wind Shape	Actual hourly plant output over the period 2014-2018. New units will use zonal hourly averages or nearby units.	Actual hourly plant output over the period 2015-2019. 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	Low (+)
15	Existing and Proposed New Solar Resources[4]	Total of 51.5 MW of qualifying Solar Capacity. (Attachment B3)	0 MWof Solar Capacity additions totaling 31.5MW of qualifying Solar Capacity. (Attachment B3)	ICAP Resources connected to Bulk Electric System	N	None
16	Solar Shape	Actual hourly plant output over the period 2014-2018. New units will use zonal hourly averages or nearby units.	Actual hourly plant output over the period 2015-2019. 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	None

[4]Units that did not participate in the Capacity Market have been removed from this year's study

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Generation Parameters

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
17	BTM- NG Program	No new BTM NG resources (Attachment B4)	Two new BTM NG resource (Attachment B5)	Both the generation of the participating resources and the full host loads are modeled.	N	Low (-)
18	Small Hydro Resources	Actual hourly plant output over the period 2014-2018.	Actual hourly plant output over the period 2015-2019.	Program randomly selects a hydro shape of hourly production from the most recent five-year period for each model iteration.	N	Low (+)
19	Large Hydro	Probabilistic Model based on five years of GADS data (2014-2018)	Probabilistic Model based on five years of GADS data (2015-2019)	Transition Rates representing the Equivalent Forced Outage Rates (EFORd) during demand periods over the most recent five-year period.	N	Low (-)
20	Landfill Gas	Actual hourly plant output over the period 2014-2018.	Actual hourly plant output over the period 2015-2019.	Program randomly selects a LFG shape of hourly production from the most recent five-year period for each model iteration.	N	None
21	New ESR (Energy Storage Resources)[4]	0 MW of new battery storage resource scheduled (see attachment B3)	0 MW of new battery storage scheduled. 0MW of total battery storage modeled (see attachment B4)	Sensitivities on simplified model and GE software enhancement	N	None
22	Energy Limited Resources (ELR)	ELR not modeled with any duration limitation	Based upon elections made by August 1st 2020	Existing elections are made by August 1st and will be incorporated into the model.		TBD

[4]Units that did not participate in the Capacity Market have been removed from this year's study

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Transactions- Imports and Exports

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
23	Capacity Purchases	Existing Rights: PJM – 1,080 MW HQ – 1,110 MW All contracts modeled as equivalent contracts	Existing Rights: PJM – 1,080 MW HQ – 1,110 MW All contracts modeled as equivalent contracts	Grandfathered Rights, ETCNL, and other awarded long-term rights.	N	None
24	Capacity Sales	Long Term firm sales Summer 281.1 MW	Long Term firm sales Summer 265.9 MW	These are long term FERC-approved contracts.	N	Minimal (+)
25	FCM Sales from a Locality[5]	No sales modeled within study period	No sales modeled within study period	White paper, NYISO recommendation	N	None
26	Wheels through NYCA	300 MW HQ to NE equivalent contract	300 MW HQ to NE equivalent contract	Developed Model per ICS presentations	N	None
27	New UDRs (Unforced capacity Deliverability Rights)	No new UDR projects	Projects with expired CRIS will be modeled as Emergency Assistance Only: HTP	Updated to reflect modified elections for 2021 received by August 1st 2020	N	Minimal
28	New EDRs (External Deliverability Rights)	0 MWs for 2020 Study	0 MWs for 2021 Study	No new External Deliverability Rights scheduled for 2021 Study	N	None

[5] 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.

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Topology

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
29	Interface Limits	Updated UPNY-SENY interface group, Jamaica ties (from J to K), and UPNY- ConEd interface. The Cedars bubble merged into the HQ bubble (Attachment E)	Removal of PJM-SENY Group Interface, PSEG-LI updates to increase Zone K Imports/Exports: Jamaica ties no longer dependent on Barrett Availability (Attachment E-E4)	Based on the most recent NYISO studies and processes, such as Operating Study, Operations Engineering Voltage Studies, Comprehensive System Planning Process, and additional analysis including interregional planning initiatives.	N	Minimal (-)
30	New Transmission	None Identified	None Identified	Based on TO provided models and NYISO's review	N	None
31	AC Cable Forced Outage Rates	All existing Cable EFORs for NYC and LI to reflect most recent five-year history (2014-2018)	All existing Cable EFORds for NYC and LI to reflect most recent five-year history (2015-2019)	TO provided transition rates with NYISO review.	N	Low (-)
32	UDR Line Unavailability	Five year history of forced outages (2014-2018)	Five year history of forced outages (2015-2019)	NYISO/TO Review	N	Low (-)

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Emergency Operating Procedures

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
33	Special Case Resources	July 2019 –1,282 MW based on registrations and modeled as 873 MW of effective capacity. Monthly variation based on historical experience.	July 2020 –1195 MW based on registrations and modeled as 822 MW of effective capacity. Monthly variation based on historical experience.	SCRs sold for the program discounted to historic availability. Summer values calculated from July 2020 registrations. Performance calculation updated per ICS presentations on SCR performance. (Attachment F)	N	Low (-)
34	Other EOPs	692 MW of non-SCR/non-EDRP resources (Attachment D)	844.4 MW of non-SCR/non-EDRP resources [6] (Attachment D)	Based on TO information, measured data, and NYISO forecasts	N	Low (-)
35	EOP Structure	12 EOP Steps Modeled	10 EOP steps modeled	Based on agreement with ICS, step 1 and 2 separated, step 3 removed	Y	Minimal (-)

[6]NYISO proposes to model "General Public Appeals" MW using the same value as the 2020 IRM study unless a Transmission Owner presents analysis supporting an alternate MW value.

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External Control Areas

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
36	PJM	Load and Capacity data provided by ISONE/NPCC CP-8 Data may be adjusted per NYSRC Policy 5 (Attachment E)	Load and Capacity data will be provided by ISONE/NPCC CP-8 Data may be adjusted per NYSRC Policy 5 (Attachment E)	Initial Review performed by the NPCC CP-8 WG prior to Policy 5 changes	N	Low (-)
37	ISONE, Quebec, IESO	Load and Capacity data provided by ISONE/NPCC CP-8 Data adjusted per NYSRC Policy 5 (Attachment E)	Load and Capacity data will be provided by ISONE/NPCC CP-8 Data adjusted per NYSRC Policy 5 (Attachment E)	Initial Review performed by the NPCC CP-8 WG prior to Policy 5 changes	N	Low (-)
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	White paper on external Control Area adjustments	N	Low (-)
39	Reserve Sharing	All NPCC Control Areas indicate that they will initially share reserves equally among all members and then among non-members	All NPCC Control Areas indicate that they will initially share reserves equally among all members and then among non-members	Per NPCC CP-8 WG	N	None
40	Emergency Assistance	Statewide Limit of 3,500 MW of emergency assistance allowed from neighbors.	Statewide Limit of 3,500 MW of emergency assistance allowed from neighbors.	White Paper on Modeling of Emergency Assistance for NYCA in IRM studies	N	None

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Miscellaneous

#	Parameter	2020 Model Assumptions	2021 Model Assumptions	Basis for Recommendation	Model Change	Est. IRM Impact*
41	MARS Model Version	Version 3.22.6	3.31.1546	Per testing and ICS recommendation	Y	None
42	Environmental Initiatives	Proposed rules would not take effect until after the summer of 2020	No new rules for 2021 Capability Year	Review of existing regulations and rules	N	None

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Attachments

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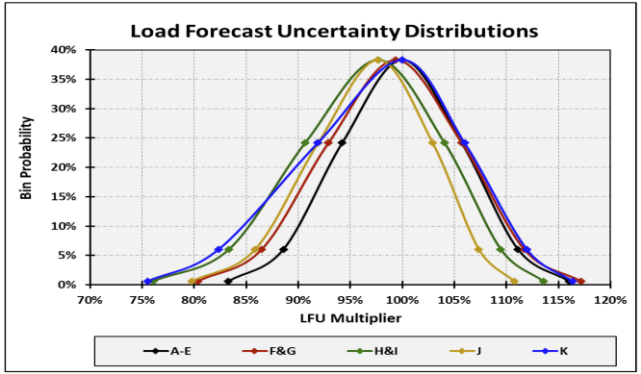
Attachment A1

NYCA Summer Load Forecast Uncertainty Model: 2021 and 2020

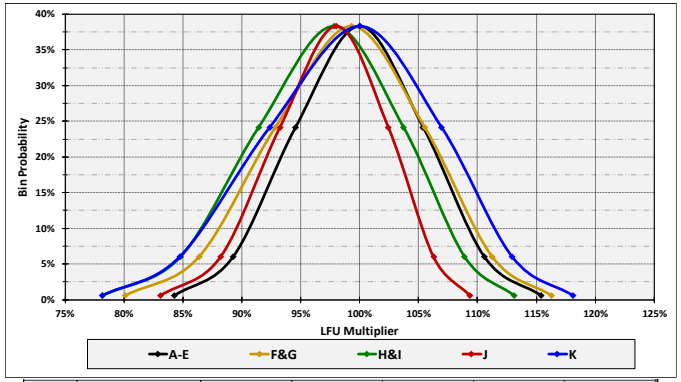
Load Forecast 2021



Bin	Probability	A-E	F&G	H&I	J	K
B1	0.62%	116.02%	117.17%	113.56%	110.73%	116.38%
B2	6.06%	111.11%	111.70%	109.46%	107.33%	111.97%
B3	24.17%	105.70%	105.70%	104.06%	102.89%	105.98%
B4	38.30%	100.00%	99.36%	97.68%	97.67%	100.00%
B5	24.17%	94.22%	92.89%	90.66%	91.91%	91.88%
B6	6.06%	88.58%	86.48%	83.35%	85.86%	82.34%
B7	0.62%	83.28%	80.33%	76.06%	79.79%	75.52%

Delta	A-E	F&G	H&I	J	K
B1 - B4	16.02%	17.80%	15.88%	13.06%	16.38%
B4 - B7	16.72%	19.04%	21.62%	17.88%	24.48%
Total Range	32.74%	36.84%	37.50%	30.94%	40.87%

Load Forecast 2020



Bin	Probability	A-E	F&G	H&I	J	K
B1	0.62%	115.39%	116.28%	113.11%	109.38%	118.09%
B2	6.06%	110.57%	111.25%	108.90%	106.28%	112.92%
B3	24.17%	105.39%	105.52%	103.72%	102.45%	106.93%
B4	38.30%	100.00%	99.31%	97.82%	98.04%	100.00%
B5	24.17%	94.58%	92.86%	91.43%	93.24%	92.36%
B6	6.06%	89.29%	86.39%	84.79%	88.19%	84.73%
B7	0.62%	84.30%	80.12%	78.15%	83.07%	78.16%

Delta	A-E	F&G	H&I	J	K
B1 - B4	15.39%	16.97%	15.30%	11.34%	18.09%
B4 - B7	15.70%	19.19%	19.66%	14.97%	21.84%
Total Range	31.09%	36.16%	34.96%	26.31%	39.93%

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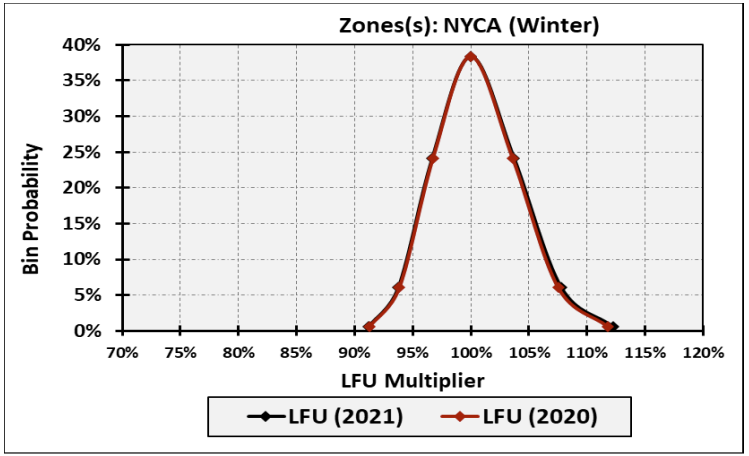
Attachment A2

NYCA Winter Load Forecast Uncertainty Model: 2020 and 2021



Zones(s): NYCA (Winter)					
Bin	**Probability**	**Wthr**	**MW**	**LFU (2021)**	**LFU (2020)**
B1	0.62%	53.75	25,593	112.22%	111.80%
B2	6.06%	47.98	24,577	107.77%	107.52%
B3	24.17%	42.20	23,648	103.69%	103.59%
B4	38.30%	36.43	22,806	100.00%	100.00%
B5	24.17%	30.66	22,051	96.69%	96.75%
B6	6.06%	24.89	21,383	93.76%	93.85%
B7	0.62%	19.12	20,802	91.22%	91.28%
	Design	36.43	22,806		

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Attachment B1

New Thermal Units and Unit Re-Ratings[7]

Proposed New Thermal Units and Unit Re-ratings (summer ratings)					
Project or Generator Name	Zone	2020 MARS Model (MW)	2020 Gold Book (MW)	New or Incremental (MW)	2021 MARS Model (MW)
New Units					
Sithe Independence	C	956.4	956.4	56.6	1013.0
Total New Units		956.4	956.4	56.6	1013.0

[7] Unit re-ratings are for generation facilities that have undergone uprate projects.

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Attachment B2

Deactivations and Removals

Announced Unit Deactivations since 2020 IRM Study		
Generator Name	**Zone**	**CRIS (MW)**
West Babylon 4	K	49.0
Indian Point 3	H	1,040.4
Glenwood GT1	K	14.6
Total Deactivations		1,104

Attachment B2

Deactivations and Removals[4]

Unit Removal since 2020 IRM Study			
Generator Name	**Type**	**Zone**	**CRIS(MW)**
Arkwright Summit Wind Farm	Wind	A	78.4
Copenhagen Wind	Wind	E	79.9
Shoreham Solar	Solar	K	24.9
Montauk Battery Storage	Energy Storage	K	5.0
Albany LFGE[8]	Land Fill Gas	F	4.5
Total Removals			192.7

[4]Units that did not participate in the Capacity Market have been removed from this year's study
[8]Albany LFGE unit removed from 2021 IRM Model Assumptions due to IIFO status

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Attachment B3

New Intermittent Resources

Wind				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS Cris
New Wind Units				
Cassadaga Wind, LLC	A	126.0	126.5	126.0
Total		126.0	126.5	126.0

Attachment B3

New Intermittent Resources

Solar				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS Cris
New Solar Units				
TotalNewSolar	N/A	N/A	N/A	N/A
Total New Intermittent		126.0	126.5	126.0

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	N/A	N/A	N/A	N/A

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Attachment B5

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

Attachment B4 -Units in the Behind the Meter Net Generation Program*			
Generator Name	**Zone**	**Resource Value (MW)[9]**	**Peak Load Adjustment (MW)[10]**
Existing:			
Stony Brook	K	36.2	42.0
Greenidge 4	C	103.4	32.0
New:			
Lyons Falls Hydro	E	8.0	2.7
	J		21.3
Total BTM-NG			98.0

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

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

[10]Based on Average Coincident Host Load (ACHL)

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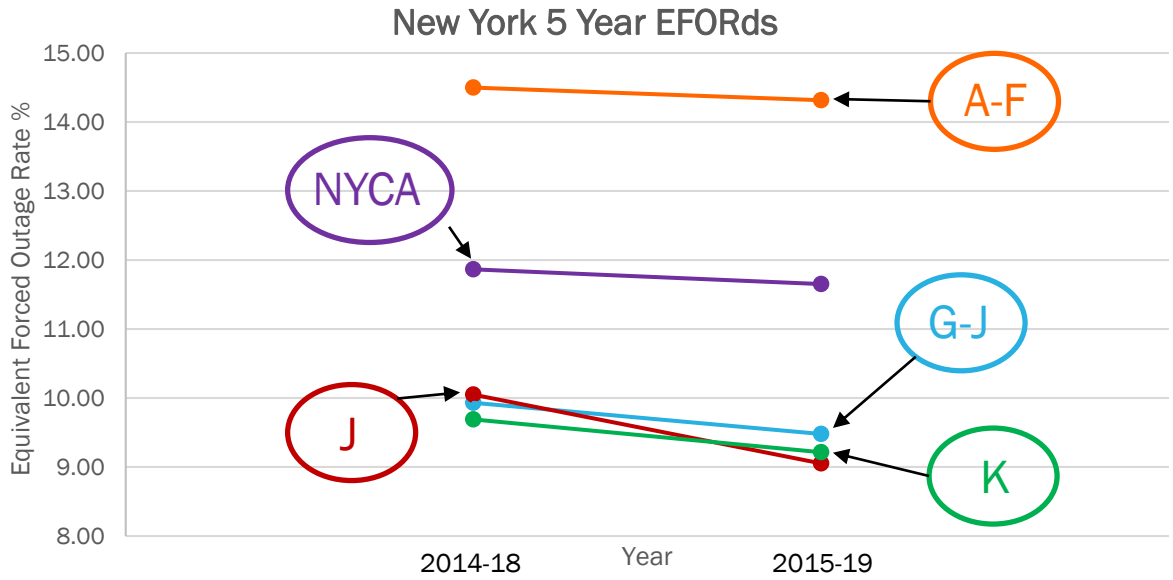
Attachment C

NYCA Five Year Derating Factors



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Attachment D

Emergency Operating Procedures

Step	Procedure	2020 MW Value	2021 MW Value
1	Special Case Resources –Load, Gen	1,282 MW Enrolled/ 873 MW modeled	1,195 MW Enrolled/ 822 MW modeled
2	5% manual voltage Reduction	57 MW	59.64 MW
3	Thirty-minute reserve to zero	655 MW	655 MW
4	5% remote voltage reduction	347 MW	445.42 MW
5	Voluntary industrial curtailment	207 MW	259.36 MW
6	General Public Appeals	80 MW	80 MW
7	Emergency Purchases	Varies	Varies
8	Ten-minute reserves to zero	1,310 MW	1,310 MW
9	Customer disconnections	As needed	As needed
10	Adjustment used if IRM is lower than technical study margin	As needed	As needed

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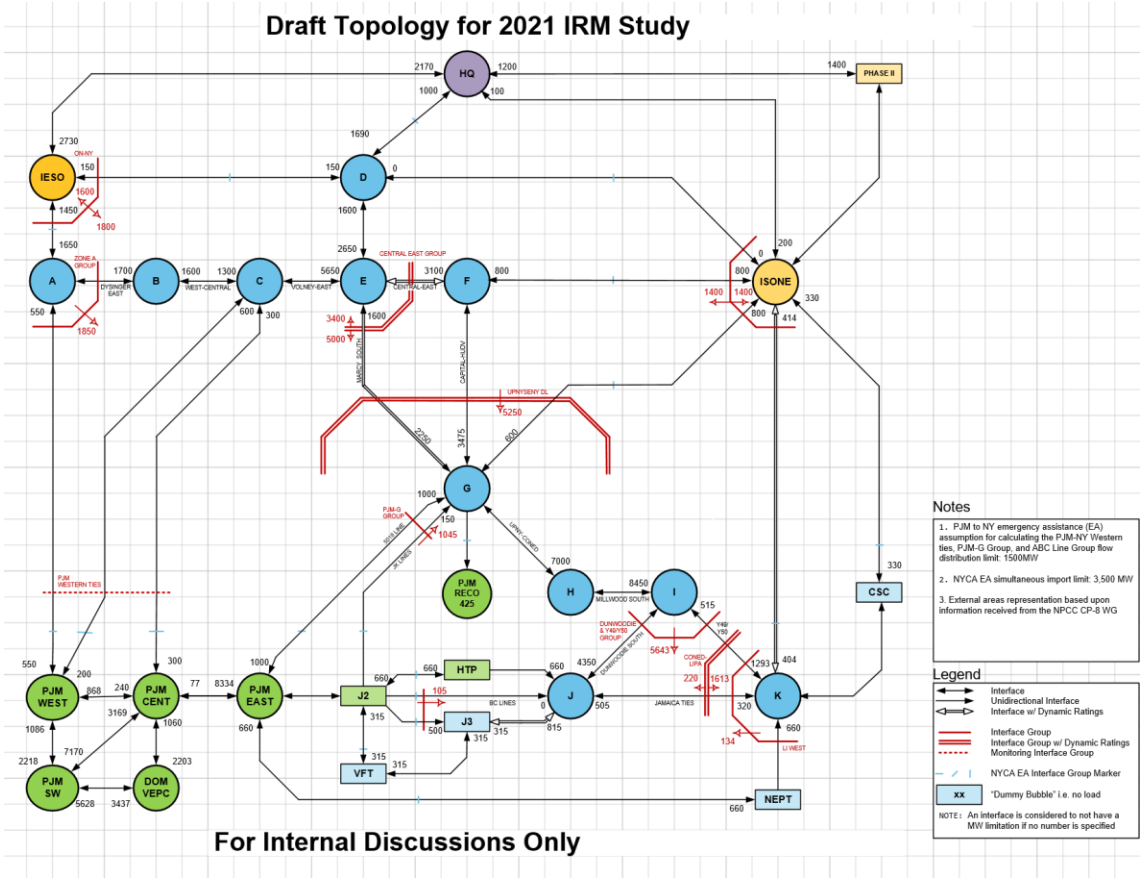
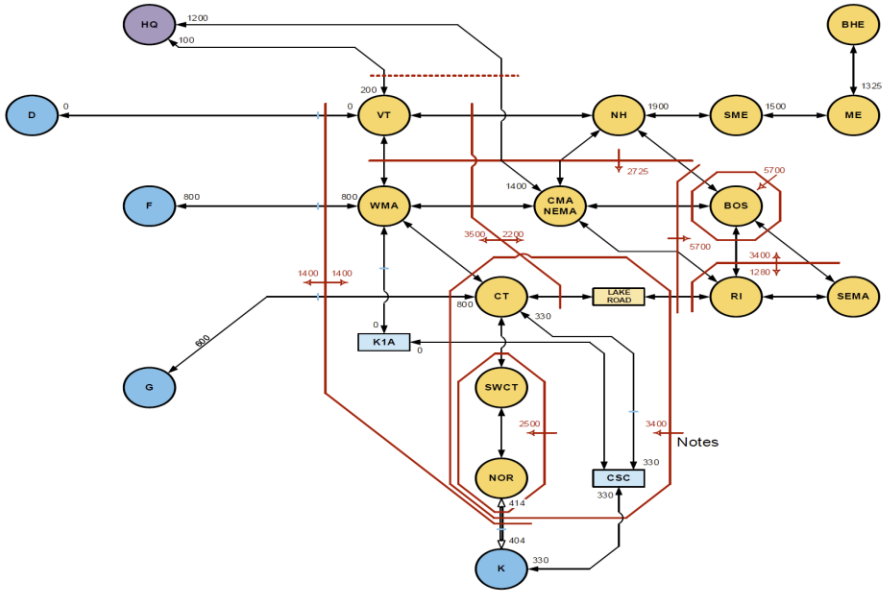
Attachment E

IRM Topology



Attachment E1

ISO-NE 14 Bubble Model



Attachment E2

Group Limits

NYCA Group Interfaces				
	2021 IRM		2020 IRM	
	Forward	Reverse	Forward	Reverse
UPNYSENY	5250	99999	5600	99999
UPNYSNY2	N/A	N/A	6950	99999
CE_GRP	N/A	N/A	5000	3400
CPV&E_G	N/A	N/A	2275	99999
LI_SUM	1593	104	1593	104
LI_WEST	99999	134	99999	18
DSY49Y50	5643	1999	5600	1999
A_EAST	1850	99999	1850	99999

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Attachment E3

Interface Limits

NYCA Interface Limits				
	2021 IRM		2020 IRM	
	Forward	Reverse	Forward	Reverse
DYSINGER EAST	1700	1999	1700	1999
WEST CENTRAL	1300	1600	1300	1600
VOLNEY EAST	5650	1999	5650	1999
MOSES_SOUTH	2650	1600	2650	1600
CENTRAL EAST	3100	1999	3100	1999
MARCY SOUTH	2250	1600	2275	1600
CAPITAL HUDSON VALLEY	3475	1999	3475	1999
UPNY - CONED	7000	1999	6000	1999
MILLWOOD SOUTH	8450	1999	8450	1999
DUNWOODIE SOUTH	4350	1999	4400	1999
CONED LILCO	320	505	320	505
AREA I TO AREA K	1293	515	1293	342

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Attachment E4

Dynamic Limits

Central East Voltage Limits, Oswego Complex Units								
	IRM2021				IRM2020			
Dependency	9MILP1, 9MILP2, FPNUC1, STHIND, OS05, OS06				9MILP1, 9MILP2, FPNUC1, STHIND, OS05, OS06			
Units Available	E_TO_F		E_TO_FG		E_TO_F		E_TO_FG	
	Forward	Reverse	Forward	Reverse	Forward	Reverse	Forward	Reverse
6	3100	1999	5000	3400	3100	1999	5000	3400
5	3050	1999	4925	3400	3050	1999	4925	3400
4	2990	1999	4840	3400	2990	1999	4840	3400
3	2885	1999	4685	3400	2885	1999	4685	3400
2	2770	1999	4510	3400	2770	1999	4510	3400
All Other Conditions	2645	1999	4310	3400	2645	1999	4310	3400

LI_NE: Northport Units 1-4				
Units Available	IRM2021		IRM2020	
	Norwalk to K	K to Norwalk	Norwalk to K	K to Norwalk
4	260	414	260	414
All Other Conditions	404	414	404	414

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Dynamic Limits Continued

ConEd-LIPA: Barrett Units 1 & 2				
Units Available	IRM2021		IRM2020	
	IJ to K	K to IJ	IJ to K	K to IJ
2	1613	220	1593	104
1	1613	200	1593	74
0	1613	130	1593	0

Staten Island Import Limits, AK and Linden CoGen Units							
				IRM2021		IRM2020	
Unit Availability				J_TO_J3		J_TO_J3	
AK02	AK03	LINCOG1	LINCOG2	Forward	Reverse	Forward	Reverse
A	A	A	A	315	200	315	200
U	A	A	A	315	500	315	500
A	U	A	A	315	700	315	700
A	A	U	A	315	500	315	500
A	A	A	U	315	500	315	500
All Other Conditions				315	815	315	815

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Dynamic Limits Continued

UPNYSENY					
Units Available					
CPV	Cricket	Athens	IRM2021	IRM2021 (2020 Topology)	IRM2020
2	3	3	5250	5260	6950
2	3	2	5100	5060	6750
1	3	3	5350	5345	6700
2	2	3	5200	5200	6550
2	1	3	5150	5140	6150
1	1	3	5250	5275	5950
2	0	3	5100	5130	5800
All Other Conditions			5350		6600

E to G		
Units Available		
CPV	IRM2021	IRM2020
2	1750	N/A
1	2000	N/A
0	2250	N/A

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Attachment F

SCR Determinations 2021 and 2020 IRM Studies

SCR Performance for 2021 IRM Study						
Super Zones	Enrollments (July 2020)	Forecast (2021)[1]	Performance Factor[2]	UCAP (2021)	Adjustment Factor[3]	Model Value
A-F	622.8	622.8	0.862	537.2	0.949	509.5
G-I	102.0	102.0	0.747	76.2	0.851	64.9
J	427.3	427.3	0.693	296.2	0.752	222.7
K	43.0	43.0	0.706	30.3	0.821	24.9
Totals	1195.1	1195.1		**940.0**		**822.1**
					Overall Performance = 68.8%	

SCR Performance for 2020 IRM Study						
Super Zones	Enrollments (July 2019)	Forecast (2020)	Performance Factor	UCAP (2020)	Adjustment Factor	Model Value
A-F	629.3	629.3	0.867	545.9	0.942	514.3
G-I	125.5	125.5	0.756	94.9	0.851	80.8
J	478.9	478.9	0.691	330.8	0.753	249.0
K	48.2	48.2	0.718	34.6	0.823	28.5
Totals	1281.9	1281.9		**1006.1**		**872.5**
					Overall Performance = 68.1%	

1. These values represent no growth from July 2020 ICAP based enrollments.
2. Performance Factor based on ACL methodology
3. 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)

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Attachment G

Wind Units Modeled

Wind				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
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
Cassadaga Wind [WT]	A	126.0	126.5	126.0
Total		**1,861.9**	**1,865.7**	**1,859.4**

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Attachment G1

Wind Units Not Modeled

Wind				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
Erie Wind [WT]	A	0.0	0.0	0.0
Steel Wind [WT]	A	0.0	0.0	0.0
Arkwright Summit Wind Farm [WT]	A	78.4	0.0	0.0
Western NY Wind Power [WT]	B	0.0	0.0	0.0
Fenner Wind Power [WT]	C	0.0	0.0	0.0
Marsh Hill Wind Farm [WT]	C	0.0	0.0	0.0
Copenhagen Wind [WT]	E	79.9	0.0	0.0
Total		**158.3**	**0.0**	**0.0**

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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
Total		**31.5**	**31.5**	**31.5**

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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**

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Attachment G4

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	2.0	2.0
Broome LFGE [IC]	C	2.1	2.1	2.1
High Acres Group [IC] (23767)	C	9.6	9.6	9.6
Ontario LFGE [IC]	C	7.6	11.2	7.6
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
Madison County LFGE [IC]	E	1.6	1.6	1.6
Oneida-Herkimer LFGE [IC]	E	3.2	3.2	3.2
Colonie LFGTE [IC]	F	6.4	6.4	6.4
Totals		**92.5**	**96.1**	**92.5**

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Attachment G5

LFG Units Not Modeled

LFG				
Resource	Zone	CRIS (MW)	Summer Capability (MW)	Lesser of Summer Capability VS CRIS
Monroe Livingston [IC]	B	2.4	0.0	0.0
Steuben County LFGE [IC]	C	3.2	0.0	0.0
Albany LFGE [IC]	F	4.5	5.6	4.5
Total		**10.1**	**5.6**	**4.5**

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Assumption Matrix History

Date	Ver	Preliminary Base Case	Date	Ver	Final Base Case
1/17/19	V0.0	Preliminary assumptions without attachments.	9/2/20	V9.0	Hudson Ave GT3 added, ELR line added
2/21/20	V1.0	Preliminary assumptions without attachments.			
3/19/20	V2.0	Preliminary assumptions without attachments.			
4/15/20	V3.0	Added in LFU Models, Data from Draft of Gold Book A-B4 and E	9/16/20	V10.0	Hudson Ave GT3 modified
5/27/20	V4.0	Final Gold Book Data Update, Update Units, Update Topology	9/29/20	V11.0	Albany LFG IIFO removed, Fall Load Forecast applied
6/23/20	V5.0	Change G-J Load forecast number, add ISO NE topology diagram, add Sithe Independence to rerate			
6/29/20	V6.0	Update to EOP steps from 9 to 10, table added for removed units, Wind units total MW adjusted			
8/5/20	V7.0	Update SCRs, EOPs, Unit Table, IRM impact value per change			
8/17/20	V8.0	Update to SCR table, update to IRM impact for externals			

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Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system

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Questions?

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