

2020-2021 Capability Year

Locational Minimum Installed Capacity Requirements (LCRs)

Kevin Osse

NYISO Market Operations

ICAP WG

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Purpose

- **This presentation provides final proposed LCRs for the 2020-2021 Capability Year**
 - Builds on the December 17, 2019 ICAP WG presentation
 - The final LCR report is also posted with these meeting materials
- **These results will be presented at the January 16, 2020 NYISO Operating Committee meeting**

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Process

- The NYISO determines LCRs consistent with the publicly-posted “Locational Minimum Installed Capacity Requirements Determination Process”
 - Located in the ICAP section of the NYISO public website
 - <https://www.nyiso.com/documents/20142/1408199/LCR-determination-process.pdf/2854dc25-301e-c506-1d88-2b13e0284ca1>
- The NYISO determines LCRs using LCR software that economically optimizes capacity requirements in the Zone J, Zone K, and the G-J Localities

Input assumptions

- **Installed Reserve Margin (IRM) study assumptions, adjusted for the LCR study**
 - Consists of MARS input files, referred to as the “IRM Final Base Case”
 - Adjustments for the LCR study:
 - The final 2020-2021 Capability Year peak load forecast, updated from the October peak load forecast
 - https://www.nyiso.com/documents/20142/9886217/2020_ICAP_V8.pdf/25f102ff-9d1e-da4c-6af3-4fbbf94070d8
 - After the load and capacity changes above, the approved IRM value of 18.9% is re-established
- **Set LCRs using a target loss of load expectation (LOLE) of 0.100, recognizing the NYSRC’s 18.9% IRM**

Input assumptions, cont'd

- LCR study load forecast

Area	Final 2020 IRM Study Load Forecast (MW) (10/2019)	Final 2020 ICAP/LCR Load Forecast (MW) (12/2019)	Change (MW)
Zone J (NYC)	11,512.0	11,477.1	-34.9
Zone K (LI)	5,216.2	5,269.5	53.3
The G-J Locality	15,775.9	15,695.3	-80.6
NYCA	32,168.7	32,348.4	179.7

Input assumptions, cont'd

Final 2020-2021 Capability Year Transmission Security Limits

Transmission Security Limit Calculation	Formula	G-J	NYC	LI	Source
Load Forecast (MW)	[A] = Given	15695.3	11477.1	5269.5	[1]
Bulk Power Transmission Capability (MW)	[B] = Given	3400	3200	350	[2]
UCAP Requirement (MW)	[C] = [A]-[B]	12295.3	8277.1	4919.5	
UCAP Requirement Floor	[D] = [C]/[A]	78.34%	72.12%	93.36%	
5-Year derating factor	[E] = Given	9.93%	10.05%	9.69%	[3]
ICAP Requirement (MW)	[F] = [C] / (1-[E])	13650.8	9201.9	5447.3	
Transmission Security Limit	[G] = ROUND([F]/[A], to 0.1% increments)	87.0%	80.2%	103.4%	

[1] 2020 Final ICAP Forecast (https://www.nyiso.com/documents/20142/9886217/2020_ICAP_V8.pdf/25f102ff-9d1e-da4c-6af3-4fbbf94070d8)

[2] 2020 Transmission Security Limit (TSL) Report (<https://www.nyiso.com/documents/20142/8583126/Summer-2020-N-1-1-analysis.pdf/727f5ce4-861f-2d6e-9b03-49d9af99cb87>)

[3] New York Control Area Installed Capacity Requirement Appendices, Figure A.4

(<http://nysrc.org/PDF/Reports/2020%20IRM%20Study%20Appendices%20Final.pdf>)

Input assumptions, cont'd

- **Final 2020-2021
Capability Year Net CONE
Curves**

- <https://www.nyiso.com/documents/20142/8583126/2020-Net-CONE.pdf/b0816522-cd41-02af-66c0-a3793c4fa9e5>

2020-2021 Capability Year LCRs: Net CONE Curves		
Location	LCR (%)	Net CONE (\$/kW-yr)
NYCA	111.5	103.5
	114.5	104.56
	117.5	105.14
	120.5	105.68
	123.5	106.2
G-J	84	155.59
	87	156.25
	90	156.98
	93	158.22
	96	159.03
Zone J	74.5	183.41
	77.5	187.39
	80.5	191.9
	83.5	194.38
	86.5	195.9
Zone K	96.5	138.95
	99.5	144.75
	102.5	150.05
	105.5	153.76
	108.5	155.9

2020-2021 Capability Year LCRs

2020-2021 Capability Year LCRs

- G-J Locality 90.0%
- New York City 86.6%
- Long Island 103.4%

- The final LCR report is posted with these meeting materials

Discussion

- **2020-2021 Capability Year LCRs differ from 2019-2020 Capability Year LCRs, which is expected**
- **Notable changes between the 2019-2020 and 2020-2021 study inputs and methods include:**
 - The updated system representation (i.e., the MARS LCR database)
 - Modeling the Cricket Valley generator as in-service, which creates congestion between Zone G and Zones H, I, J, and K.
 - This is the major driver for the increased NYC LCR
 - Modeling the generators Indian Point Unit 2 and Somerset as out-of-service
 - Updated external area models
 - Updated Load Forecast uncertainty
 - The NYSRC IRM Study Report discusses these changes
 - The New York City Locality and G-J Locality LCRs exceed their respective transmission security limits
 - The Zone K LCR was set by its Transmission Security Limit

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Questions?

Questions or comments can be sent to

IRM@nyiso.com

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



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