

Alternative Method for Determining LCRs

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Agenda

- **2018 Project Plan & Milestones**
- **2017 & 2018 Base Cases**
- **Next Steps**
- **Questions**

2018 Project Plan & Milestones

2018 Project Plan

■ Project Plan:

- Seek approval and file tariff revisions with FERC
- Update documentation, procedures, and processes
- Internal training
- Development of production software
- User acceptance testing of production software
- Deployment of production software

2018 Required Resources

■ Resources:

- GE Energy Consulting
- ICAP Market Design
- Resource Adequacy
- ICAP Market Operations
- Operations Engineering
- Legal

2018 Project Milestones

- February 14: Business Issues Committee
- February 28: Management Committee
- March 20: Board of Directors
- March 30: File Section 205 with FERC
- April: Updating documentation, procedures, processes
- June: FERC action
- June 29: Production Version Complete
- July: User Acceptance Testing
- September: Production Deployment

Project Plan & Requested Sensitivities

- **GE will be working towards a production version of the optimization tool**
 - Parallel projects associated with NYISO computing infrastructure (i.e., transition to cloud computing) increase the complexity of the transfer and required resources
- **NYISO staff will be working to update all internal documentation and processes, along with testing of production software**
- **The implementation deadline for January 2019 LCRs cannot be met if any steps in the project plan and timeline are postponed**
- **As a result of the strict project timeline and other projects' constraints on resources required for the steps towards implementation, the NYISO is responding in the following slides to some of stakeholders' requests for information but we are unable to conduct and present the additional sensitivities requested at the January 25th ICAPWG**

2017 & 2018 Base Cases

NYSRC Installed Capacity Requirement Reports

- Publically available on the NYSRC website
 - http://www.nysrc.org/NYSRC_NYCA_ICR_Reports.html
- Reports identify changes in topology and assumptions for the study year

2017 & 2018 Base Cases

- Load Forecast Uncertainty
- Interface limits
- EFORd on transmission and UDRs
- Net CONE Curves
- Transmission Security Floors

Load Forecast Uncertainty

- **Load in the model is broken out into 7 bins**
 - Bins are used to simulate different load levels
 - Each bin is associated with a probability of occurring
 - Highest bins (1-3) are main drivers of LOLE

2017 & 2018 Load Forecast Uncertainty

- H & I load forecast uncertainty decreased
- J & K load forecast uncertainty increased
- These would tend to increase southeast NY capacity requirement

	H & I			J			K		
	Bin 1	Bin 2	Bin 3	Bin 1	Bin 2	Bin 3	Bin 1	Bin 2	Bin 3
2017	111.13%	107.46%	102.91%	106.76%	104.75%	101.91%	114.00%	111.23%	108.02%
2018	108.22%	106.39%	102.93%	107.86%	105.47%	102.19%	115.86%	112.06%	106.95%
Δ	-2.91%	-1.07%	0.02%	1.10%	0.72%	0.28%	1.86%	0.83%	-1.07%

EFORd on Cables

- **Underground cables**
 - Increase in EFORd on Dunwoody South, ConEd LILCO, Y49Y50, Cross Sound Cable
- **UDRs**
 - Net increase in EFORd on the UDRs
- **These would tend to increase southeast NY capacity requirement**

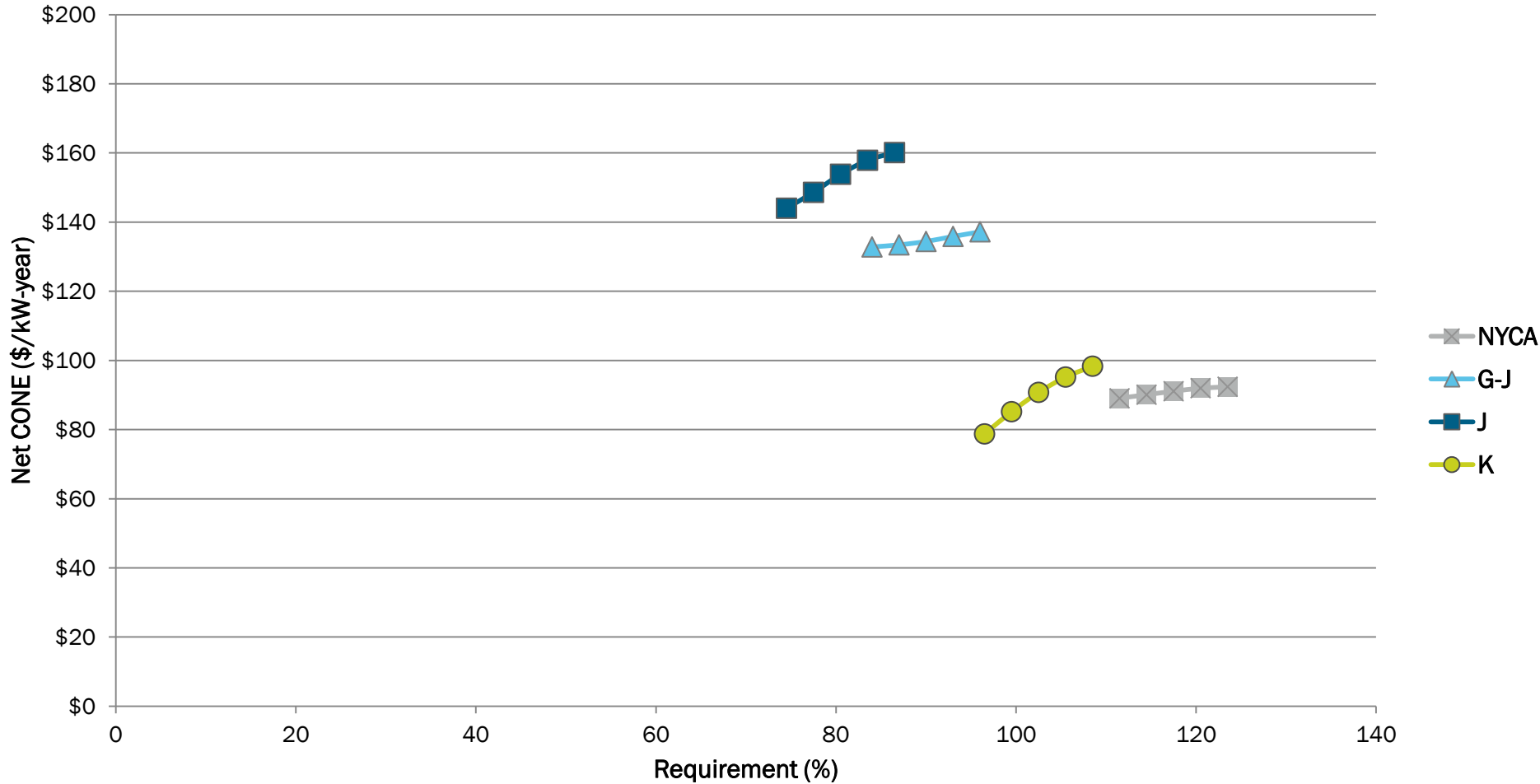
Interface Limits

- **Topological changes associated with the entry of the CPV**
 - More binding effect (or congestion) on UPNY-SENY and Marcy South
 - Increase of UPNY-ConEd and I to J & K
- **Northport Norwalk interface decrease**
 - 428/369 MW to 404/260 MW
- **Long Island Sum interface decrease**
 - 120/91/0 MW to 104/74/0 MW
- **Long Island West interface decrease**
 - 34 MW to 18 MW

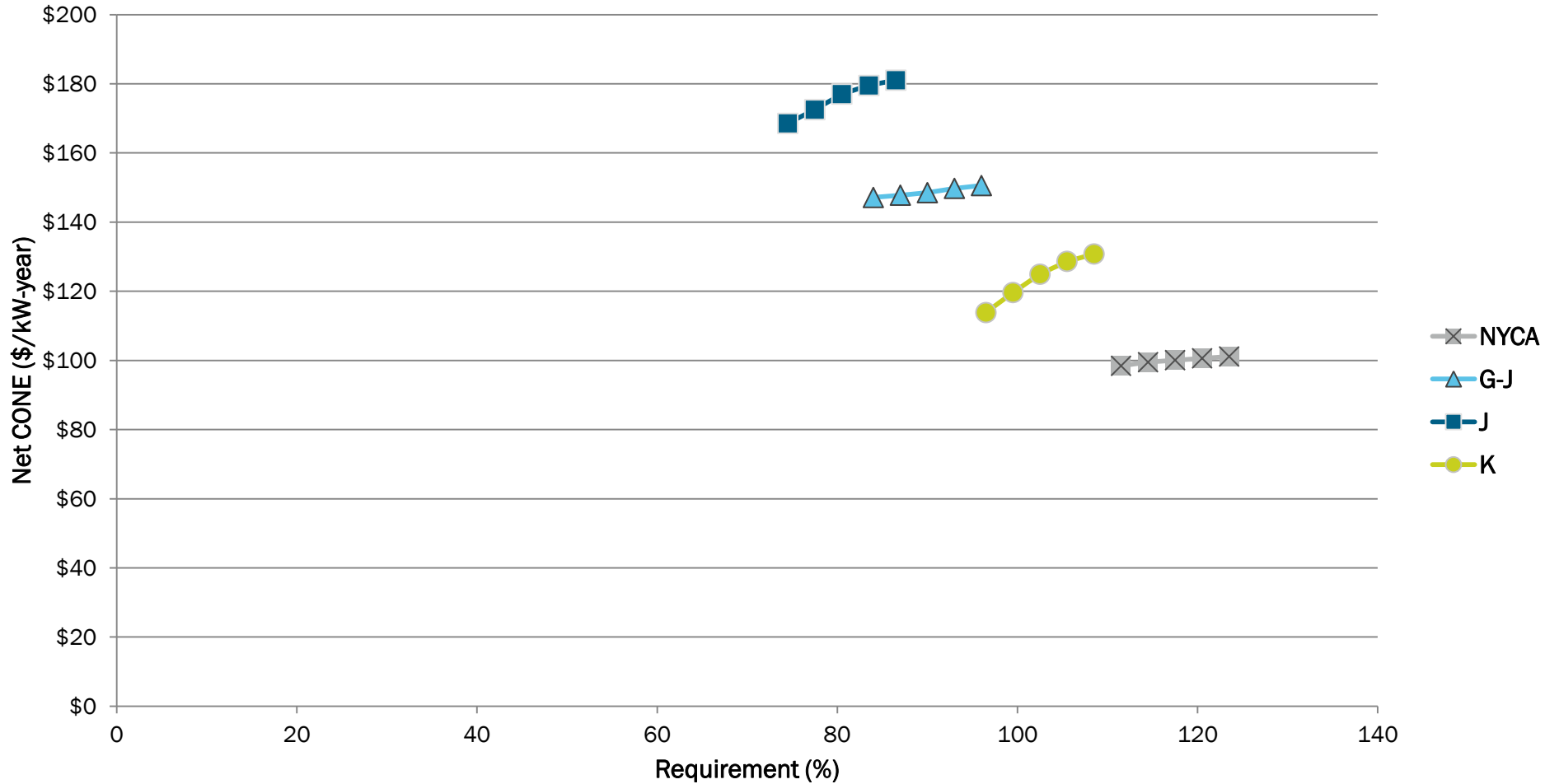
Net CONE Curves

- All net CONE curves increase from 2017 to 2018
- Relative order of the cost of the localities remained the same (i.e., J being the largest net CONE followed by G-J, K, and NYCA)

2017 Net CONE Curves



2018 Net CONE Curves (Uncollared)



2018 Transmission Security Limits

Transmission Security Requirements	G-J	Zone J	Zone K
Load Forecast (MW)	15,890	11,541	5,445
Transmission Security Import Limit (MW)	3,000	3,175	350
Transmission Security UCAP Requirement (MW)	12,890	8,366	5,095
Transmission Security UCAP Requirement (%)	81.1%	72.5%	93.6%
5 Year EFORd (%)	9.55%	9.05%	9.26%
Transmission Security ICAP Requirement (MW)	14,250	9,198	5,615
Transmission Security LCR Floor (%)	89.7%	79.7%	103.1%

Changes from 2017 to 2018

- The changes from the 2017 base case to the 2018 base case required more capacity in southeast New York in order to meet the reliability criteria (i.e., $LOLE \leq 0.1$ days/year)
 - This is observed in both the current and the optimization methodologies

2017 & 2018 LCRs

	Approved LCRs			Optimized LCRs		
	G-J	J	K	G-J	J	K
2017	91.5%	81.5%	103.5%	90.7%	80.2%	104.2%
2018	94.5%	80.5%	103.5%	90.8%	79.7%	107.5%

2017 & 2018 LCRs (ICAP MW)

	Approved LCRs (MW)			Optimized LCRs (MW)		
	G-J	J	K	G-J	J	K
2017	14,696.1	9,511.1	5,617.0	14,569.8	9,354.7	5,652.5
2018	15,042.5	9,288.9	5,605.6	14,432.0	9,198.2	5,856.1
Δ Locality MW	346.4	-222.2	-11.5	-137.9	-156.5	203.6
Δ Southeast New York MW	334.9			65.7		

- In 2018, both the current and optimized base cases require more capacity in southeast New York

Design Objectives

- **The alternative methodology is consistent with the design objective and guiding principles**
 - Maintains reliability
 - Transparent
 - Predictive
 - Efficient allocation of capacity

Next Steps

Next Steps

- The NYISO will consider input received during today's ICAP Working Group meeting
- BIC on February 14th
- Additional comments sent to deckels@nyiso.com will be considered

Questions?

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits 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 policy makers, stakeholders and investors in the power system



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