Alternative Methods for Determining LCRs

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DRAFT – FOR DISCUSSION PURPOSES ONLY

Outline

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2017 Commitment

- **NYISO will evaluate and propose an alternative methodology for determining LCRs based on economic optimization**
  - ***This methodology will utilize the final NYSRC approved IRM***
- **2017 objective is not aimed at proposing an alternative methodology for developing the IRM**
  - ***Results including optimization of IRM will be presented for informational purposes only***
- **Based on the current timeline, it is unlikely any recommendation this year would lead to a change in the methodology used for determining 2018 LCRs**

Resource Constraints

- **NYISO is utilizing GE to provide MARS analysis for:**
  - ***Locational Exchange Factor (LEF)***
  - ***Alternative Methods for Determining LCRs***
- **The limited resources have been focused on the Locational Exchange Factor project due to its time-sensitive nature**
- **This redistribution of resources has delayed the progress of this project**

2017 Base Case

Scenario	GHIJ	J	K	Solution Cost (million $)
Tan45	91.5%	81.5%	103.5%	$4,414
Optimized Base Case	92.2%	78.1%	104.5%	$4,371

- **Base Case results in same LOLE (i.e., 0.1) with a lower cost of capacity**
- **The capacity cost is based on Unit Net CONE cost curves developed with GE in 2017**
- **The solution cost shown above is the long-term equilibrium**

Phase 1: Sensitivities

- Currently working with GE to evaluate and analyze the performance of the optimizer tool with respect to simple sensitivities (e.g., generation additions)
- These results were not ready at the time of this posting and will be provided at a future date

Phase 2: Transmission Security

- Evaluate the incorporation of additional transmission security constraints into the LCR optimization
- Seek to ensure NYSRC Transmission System Planning Performance Requirements and NYC System Operations local criteria are not violated
- Develop LCR floors that would account for transmission security reliability requirements
- Work with Planning and Operations to evaluate appropriate limits for the LCR floors for purposes of this analysis

Transmission Security

- LCR floors would be incorporated as a constraint within the optimization
- Optimization would result in LCRs that are the maximum of either the value associated with resource adequacy or the LCR floor
- Similar concept is utilized by ISO-NE
  - *Local Sourcing Requirements (LSR) is the local requirement for import constrained zones*
  - *It is the maximum value of either the Local Resource Adequacy Requirements (LRA) and the Transmission Security Analysis (TSA)*

Continuing Phase 2

- **Evaluating Cost Curves**
  - ***Understand effects of changes in CONE (using DCR peaking plant) on optimization results***
  - ***Develop methodology***
- **Shifting methods**
  - ***Develop greater understanding for how capacity is shifted using the optimization methodology***

2017 Project Development

Stage	Objective	Specific Topics:
Proof of Concept	Demonstrate alternative methodology in relation to guiding principles (*i.e.*, least cost, stability, robust, predictability)	Generation +/- Unit net CONE +/- Load +/- EFORd +/-
Refine Methodology	Modify the alternative method to ensure that all aspects have a purpose and are being performed as a result of sound market and engineering principles	Unit net CONE curves Potential Bounds Emergency assistance assumptions Modeling methodology
Market Simulations	Simulate realistic market situations to demonstrate performance of methodology	Changes in resources Topological changes Locality configurations
Defining Process	Develop a process for the methodology that ensures guiding principles are being achieved over time	Develop process of method Process timeline Transition methods
Demonstrating Market Benefits	Demonstrate the methodology results in market benefits and resolve any issues that arise from its implementation	LOLE Criterion Consumer impact Multiyear simulation Cost allocation
Final Market Design	Summarize all findings and develop a final market design for implementation	Develop final market design

Next Steps

- The NYISO will consider input received during today's ICAP Working Group meeting
- Any additional comments sent to deckels@nyiso.com will be considered
- The NYISO will return to a future ICAPWG meeting to discuss its progress and adjustments to the plan after considering comments or results

The mission of the New York Independent System Operator, in collaboration with its 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 policy makers, stakeholders and investors in the power system***

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