

# Reserve Enhancements for Constrained Areas

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# Agenda

- Project Background
- Project Scope
- Next Steps

# 2021 Approved Market Project

- The 2021 ‘Reserve Enhancements for Constrained Areas’ project deliverable is a Q4 Study Complete
- 2021 Project Schedule Milestone Update
- 2021 Approved Market Projects Product and Project Management
  - See Project 21 (Page 22 of 26)

# Previous Presentations

Date	Working Group	Discussion Points and Links to Materials
01-21-21	ICAPWG/MIWG	2021 Market Projects Outlook Presentation <a href="https://www.nyiso.com/documents/20142/18559701/2021%20Market%20Design%20Project%20Outlook.pdf/0094ad10-3eea-bf35-10ce-fb20592a6d33">https://www.nyiso.com/documents/20142/18559701/2021%20Market%20Design%20Project%20Outlook.pdf/0094ad10-3eea-bf35-10ce-fb20592a6d33</a>

# A Grid in Transition – A Multifaceted Approach

- **Aligning Market Incentives**
  - Carbon Pricing
  - Comprehensive Mitigation Review
- **Prepare for New Technologies**
  - DER Participation Model
  - Energy Storage Participation Model
  - Hybrid Co-Located Model
  - Hybrid Aggregation Model
- And more....

Aligning  
Competitive  
Markets and New  
York State Clean  
Energy Objectives



- **Review Energy & Ancillary Services Design for Incenting Flexibility**
  - More Granular Operating Reserves
  - Reserve Enhancements for Constrained Areas
  - Regulation Up & Down Services
  - Ramping Services
- **Evolve the Day Ahead and Real-Time Markets to improve managing Forecast Uncertainty**
- **Track certain market metrics to evaluate incentives for flexible**

Valuing Resource  
& Grid Flexibility



- **Enhancements to Resource Adequacy Modeling**
- **Improving Installed Capacity Market Incentives**
- **Review Capacity Market Resource Ratings to Reflect Reliability Contribution**
  - Expanding Capacity Eligibility
  - Tailored Availability Metric

Improving  
Capacity Market  
Valuation



# Operating Reserve Requirements Background

# Operating Reserve Requirements

- Currently, the NYISO procures fixed quantities of operating reserves in specified regions across the state.

A=most severe NYCA Operating Capability Loss (1310 MWs)	NYCA	EAST	SENY	NYC	LI
	Zone A-K	Zone F-K	Zone G-K	Zone J	Zone K
10 Minute Spinning Reserve	½ A = 655 MW	¼ A = 330 MW	0	0 MW	0 MW
10 Minute Total Reserve	A = 1310 MW	1200 MW	0	500 MW	120 MW
30 Minute Reserve	2 A = 2620 MW	1200 MW	1300-1800* MW	1000 MW	270-540 MW

\*Additional 0-500 MW will be added to SENY reserve region when the 'Reserves for Resource Flexibility' project is implemented [FERC Docket: ER21-625-000].

\*\* Supplemental Reserves (i.e., reserve beyond the minimum reserve requirements) may be established for any reserve region and/or existing reserve products after the 'Ancillary Services Shortage Pricing' proposal is implemented [See FERC Docket: ER21-1018-000 and the NYISO's proposed revisions to Section 15.4.7 of Rate Schedule 4 of the Services Tariff].

# Operating Reserve Requirements

## ■ Reasons for current Operating Reserve requirements

Based on most severe source contingency	Based on restoring transmission assets to Normal Operating Limits
<ul style="list-style-type: none"><li>• NYCA 30-minute</li><li>• NYCA 10-minute</li><li>• NYCA 10-minute spinning</li><li>• NYC 10-minute total</li></ul>	<ul style="list-style-type: none"><li>• EAST 30-minute</li><li>• EAST 10-minute total</li><li>• EAST 10-minute spinning</li><li>• SENY 30-minute</li><li>• NYC 30-minute</li><li>• LI 10-minute total</li><li>• LI 30-minute</li></ul>



# Project Background

# Project Background

- **The current static modeling of reserve regions and their associated requirements does not reflect the varying needs of the grid to respond to changes in system conditions by i) scheduling economic energy above 1310 MWs from individual suppliers when sufficient reserves are available or ii) shifting reserve procurements to lower-cost regions when transmission capability exists.**
- **A dynamic reserve procurement methodology would be useful to improve market efficiency through enhancing competition of suppliers, and better aligning market outcomes with how the power system is operated.**

# Project Scope

- **The Reserve Enhancements for Constrained Areas project study has two key components:**
  - i. **Dynamic Reserve Modeling**
    - Explore the feasibility of dynamically determining the minimum operating reserve requirements based on the single largest source contingency every market run.
  - ii. **Transmission as Reserves**
    - Explore dynamic allocation of reserves based on available transmission capability (includes SOM-2015-16)
    - **More Granular Operating Reserves**
      - Creating locational operating reserve requirements
        - » Consider modeling local reserve requirements in New York City load pockets based on available transmission capability (SOM-2017-1)
      - The NYISO believes an efficient more granular operating reserves concept is dependent on developing the transmission as reserves capabilities

# Next Steps

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- **Present Consumer Impact Methodology**
  - Targeted September 2021
- **Present Consumer Impact Analysis**
  - Targeted October 2021
- **Present Study Findings and Recommendations**
  - Targeted November 2021
- **Publish Study Report**
  - Targeted December 2021

# 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

