

# Market Design Concepts to Prepare for Significant Renewable Generation

**Ancillary Services Shortage Pricing**  
**Reserve Procurement for Resilience**

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**Market Issues Working Group**

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## NYS CLEAN ENERGY STANDARD GOALS



	Carbon Pricing in the Wholesale Markets	Market Design Concepts to Prepare for Significant Renewable Generation
<b>Forum</b>	Integrating Public Policy Task Force (IPPTF)	Market Issues Working Group (MIWG)
<b>Led by</b>	NYISO + NY DPS + NYSERDA	NYISO
<b>Objective</b>	To further explore options to incorporate the cost of carbon dioxide into wholesale energy markets with the goal of contributing to achieving New York State's public policies, while providing the greatest benefits at the least cost to consumers and appropriate price signals to incentivize investment and maintain grid reliability.	To propose, analyze and develop new energy and capacity market products and/or rule changes that would incent the participation of resources that can enhance the availability, flexibility, predictability, and dispatchability of the NY power system.
<b>2018 Deliverables</b>	Draft proposal and supporting rationale for how carbon could be priced in NY's wholesale electricity markets.	<ol style="list-style-type: none"> <li>1. Market Design Concept Proposals for viable near-term products and rule enhancements.</li> <li>2. 3-5 year vision for market design.</li> </ol>



## MASTER PLAN - Q2 2018

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# Agenda

- Background
- Re-evaluate Shortage Pricing for Ancillary Services
- Timeline
- Appendix: Previous Presentations for the Integrating Public Policy (IPP) Initiative

# Background

- The NYISO conducted a preliminary review of the market design concepts proposed in the Market Assessment with 50% Renewables Report (2017 Market Assessment).
- Concepts were evaluated according to the following criteria:
  - Whether the product or rule change would incentivize performance attributes such as availability, predictability, flexibility, and dispatchability.
  - Need demonstrated by the results of the NYISO's 2017 Market Assessment.
  - Anticipated future system need based on observations from other control areas or other NYISO studies.
- The NYISO recommends that concepts which may offer benefits but are not yet well defined be prioritized as future studies or longer-term market design efforts.

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# Background

- **The NYISO recommended that the following potential design concepts be further explored during Q1 and Q2 2018:**
  1. Flexible ramping product to address forecast uncertainty
  2. Re-evaluate shortage pricing for Ancillary Services
  3. Review performance incentives for negative LBMP's
  4. More frequent transaction scheduling
- **Market Design Concept Proposals for these products or rule changes will be considered for inclusion in the Master Plan**

# Re-Evaluate Shortage Pricing for Ancillary Services

- As part of earlier presentations on the Market Design Concepts to Prepare for Significant Renewable Generation, this topic was described as follows:
  - Shortage pricing could incent market participants to offer more flexibility and responsiveness in real-time (RT).
  - Incremental reserve value could be evaluated:
    - Operating reserves could be procured beyond the minimum requirements at lower price points.
    - This would assist in reflecting the incremental value the reserve requirement provides.
    - Potential design would also signal constrained NYS Power System conditions more gradually.
- The NYISO now proposes that these efforts be pursued as two separate projects:
  - Ancillary Services Shortage Pricing
  - Reserve Procurement for Resilience

# Performance Assurance

- The NYISO also discussed procuring additional operating reserves above minimum requirements when cost effective (*i.e.*, Reserve Procurement for Resilience) as part of the management response to the Analysis Group’s Performance Assurance Report (Performance Assurance Management Response)\*
- The development of an appropriate market design concept to achieve this goal will require significant resources.
- The NYISO recommends that this effort be pursued as an independent project separate from re-evaluating current Ancillary Services Shortage Pricing.
  - It will be included in the 2019 project prioritization process as “Reserve Procurement for Resilience”.
  - This market design could assist in reflecting the incremental value additional operating reserve provides, as well as signal constrained NYS Power System conditions more gradually.

\*Presentation: [http://www.nyiso.com/public/webdocs/markets\\_operations/committees/bic\\_miwg/meeting\\_materials/2018-02-21/Performance%20Assurance%20Feb%2021%20ICAPWG%20FINAL.pdf](http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2018-02-21/Performance%20Assurance%20Feb%2021%20ICAPWG%20FINAL.pdf)

Management Response: [http://www.nyiso.com/public/webdocs/markets\\_operations/committees/bic\\_miwg/meeting\\_materials/2018-02-21/Performance%20Assurance%20Management%20Response%20Feb%2021%20MIWG%20FINAL.PDF](http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2018-02-21/Performance%20Assurance%20Management%20Response%20Feb%2021%20MIWG%20FINAL.PDF)



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# Operating Reserve Projects from the Performance Assurance

## Management Response and the 2017 Market Assessment

- The NYISO is currently considering three projects for prioritization in 2019 that would propose enhancements to the NYISO's operating reserve products:
  - More Granular Operating Reserves
  - Reserve Procurement for Resilience
  - Ancillary Services Shortage Pricing
- These efforts were recommended as part of the Performance Assurance Management Response and 2017 Market Assessment.
- The NYISO will provide a Market Design Concept Proposal by June 2018 for the Ancillary Services Shortage Pricing and Reserve Procurement for Resilience projects as part of the IPP Master Plan.
- A description of each of these projects is included on the next few slides

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# More Granular Operating Reserves

- The Performance Assurance Management Response also indicated that the NYISO should consider establishing and securing a separate 10 minute reserve requirement for New York City.
  - New York State Reliability Council (NYSRC) reliability rules require that “[s]ufficient ten (10) minute operating reserves shall be maintained in the NYC zone” – NYSRC Reliability Rules
  - Doing so would provide locationally specific market signals consistent with the reliability need.
  - In addition, exploring load pocket reserves would further enhance the locationally specific value of maintaining short notice responsive resources in desirable locations.
- This effort is being proposed as an additional project for 2019 prioritization.

# Reserve Procurement for Resiliency

- Enhancements to the construction of the current operating reserve shortage pricing should be discussed with stakeholders to explore the benefits of procuring additional operating reserves to incent resource performance and promote grid resiliency.
  - Specifically, by using a concept akin to the capacity market approach that provides the ability for procuring excess capacity through the Installed Capacity Demand Curves.
    - The NYISO could similarly procure additional operating reserves above minimum requirements when cost effective.
    - These reserve schedules would enhance resiliency by recognizing the value of resource availability to be responsive to unanticipated real-time operating needs.
    - The additional financial incentives would encourage procurement of the necessary fuel obligations and incent improved resource performance.

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# Ancillary Services Shortage Pricing

- Ancillary Services Shortage Pricing incents market participants to offer more flexibility and responsiveness in RT.
  - In response to the anticipated increases in future system volatility and importance of ancillary services, as well as recent capacity market performance rules at other ISOs/RTOs, the NYISO and its stakeholders should consider:
    - A re-evaluation of shortage pricing values for each product relative to other products
    - The potential need to increase certain shortage pricing values
    - The potential implementation of more gradual steps in the demand curves for ancillary services

# Timeline

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# Timeline

- **April 24, 2018**
  - Discuss draft outline of the IPP Master Plan with stakeholders
- **May 9, 2018**
  - Continue to discuss Ancillary Services Shortage Pricing initiative with stakeholders
- **May 23, 2018**
  - Continue discussions regarding the draft outline of the IPP Master Plan with stakeholders
- **May 31, 2018**
  - Continue to discuss Ancillary Services Shortage Pricing initiative with stakeholders
- **June 13, 2018**
  - Present Final IPP Master Plan

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# Appendix: Previous Presentations

# Previous Presentations

Date	Working Group	Discussion points and links to materials
9-12-16	Budget & Priorities Working Group (BPWG)	Presentation of stakeholder feedback, <a href="#">proposed scope of the project</a>
10-19-16	Market Issues Working Group (MIWG)	Presentation providing more detail on the scope and timeline of the project
11-22-16	Market Issues Working Group (MIWG)	Presentation <a href="#">updating project status</a>
1-31-17	Market Issues Working Group (MIWG)	<a href="#">Integrating Public Policy Update (Phases 1 and 2)</a>
2-16-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Study Description and Assumptions Review</a>
3-28-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Study Description and Assumption Update</a>
4-24-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Preliminary DAM Results</a>
6-21-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Real-time Study Description and Assumptions</a>
7-13-17	ICAP Working Group (ICAP WG)	<a href="#">The ICAP Market - Preliminary Findings (Phase 2)</a>
8-22-17	ICAP Working Group (ICAP WG)	<a href="#">IPP Phase 2 Capacity Market Results and background information</a>
8-25-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 2: Simulation Progress</a>
9-25-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 2: RT Energy Market Simulation Results</a>
10-3-17	Market Issues Working Group (MIWG)	<a href="#">Presentation discussing market assessment paper</a>
10-16-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 3: Initial Concepts under Consideration</a>
11-02-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 3: Stakeholder Feedback Posted</a>
12-5-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 3: Review of Potential Market Product and/or Structure Enhancements</a>
12-20-17	Market Issues Working Group (MIWG)	<a href="#">Market Assessment for Accommodating Public Policy</a>
1-10-18	Market Issues Working Group (MIWG)	<a href="#">Market Assessment for Accommodating Public Policy: Stakeholder Feedback</a>
1-25-18	Market Issues Working Group (MIWG)	<a href="#">Accommodating Public Policy: Initial Prioritization</a>
3-7-18	Market Issues Working Group (MIWG)	<a href="#">Flexible Ramping Product</a>
4-3-18	Market Issues Working Group (MIWG)	<a href="#">Initial MDCP: Flexible Ramping Product</a>
4-3-18	Market Issues Working Group (MIWG)	<a href="#">More Frequent Transaction Scheduling</a>

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**RK  
VDENT  
OPERATOR**

# 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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