

# 2019 Market Projects

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Capacity, DER, and Energy Market Design Teams

**ICAPWG/MIWG**

January 8<sup>th</sup>, 2019



# The Team

- **The Market Design Team (led by Mike DeSocio) is composed of 3 focused teams**
- **Capacity Market Design (led by Zach T. Smith)**
  - Amanda Carney
  - Emily Conway
  - Sarah Carkner
  - Ryan Patterson
- **Distributed Resources Integration (led by James Pigeon)**
  - Michael Lavillotti
  - Michael Ferrari
- **Energy Market Design (led by Whitney Lesnicki)**
  - Ethan Avallone
  - Jennifer Boyle
  - Pallavi Jain
  - Ashley Ferrer

# Purpose

- Our objective is to share the 2019 Capacity, DER, and Energy Market Design projects including anticipated schedule and deliverables with stakeholders
- The following slides include the project description, schedule and deliverables of each project that was prioritized for 2019

# Capacity Market Design

# Capacity Market Project Overview

2019 Capacity Market Design Projects	Q1	Q2	Q3	Q4	2019 Deliverable
Enhancing Fuel and Energy Security	CD	S			Q2 Study
External Capacity Performance & Obligations	PR	MDCP	MDC		Q3 MDC
Tailored Availability Metric	PR	CD	MDCP		Q3 MDCP
Demand Curve Reset	PR		S	S	Q4 Study
Competitive Entry Exemption for Additional CRIS	PR	CD	MDC		Q3 MDC
Repowering	PR	CD	MDC		Q3 MDC

KEY

PR	Project Review	MDCP	Market Design Concept Proposed	FR	Functional Requirements
S	Study	MDC	Market Design Complete	CD	Continuing Discussions

# Enhancing Fuel and Energy Security

Amanda Carney, Associate Market Design Specialist



# Enhancing Fuel and Energy Security

## ■ Background:

- This project is driven by the consideration of future changes to New York's fuel supply mix as well as the expected increased demands for natural gas, which may challenge the ability to meet electric system demands under certain stressed system conditions
- The Fuel Security Study is intended to evaluate the reliability of the NY grid under strained fuel conditions and identify any areas where the NYCA system may need to be enhanced in terms of fuel and energy security

# Enhancing Fuel and Energy Security

- **2019 Deliverable: Q2 2019 - Study Complete**
- **Project Description:**
  - Study the impacts of a specific cold weather period on grid resilience and fuel and energy security



# Enhancing Fuel and Energy Security

## ■ Stakeholder Engagement Plan:

- Q1 2019
  - Consultant to present proposed study assumptions and scenarios to stakeholders
  - Consultant to present preliminary findings to stakeholders
- Q2 2019
  - Consultant to present final report to stakeholders

# External Capacity Performance & Obligations

Amanda Carney, Associate Market Design Specialist



# External Capacity Performance & Obligations

## ■ Background:

- The External Capacity Performance & Obligations project is a continuation of efforts in 2018, which were prompted by a 2017 Analysis Group report that identified areas where the NYISO could improve its market design in order to incentivize performance and reliability of external capacity suppliers
- Link to [AG Report](#)

# External Capacity Performance & Obligations

- **2019 Deliverable: Q3 2019 - Market Design Complete**
- **Project Description:**
  - Continue to examine the energy delivery and eligibility requirements for external capacity suppliers

# External Capacity Performance & Obligations

## ■ Stakeholder Engagement Plan:

- Q1 2019
  - Continued market design and tariff discussions with a proposed vote on the External SRE Penalty proposal
- Q2 2019
  - Discuss proposed market solutions that are aimed at enhancing reliability through refining the eligibility and energy delivery of external capacity suppliers
- Q3 2019
  - Present revised tariff
  - Market Design Complete Presentation

# Tailored Availability Metric

Emily Conway, Associate Market Design Specialist



# Tailored Availability Metric

- **Background:**

- The Tailored Availability Metric is a new project as part of the ongoing Performance Assurance effort, which was prompted by a 2017 Analysis Group report that identified areas where the NYISO could improve its market design in order to incentivize performance and reliability of all capacity suppliers
- Link to [AG Report](#)

# Tailored Availability Metric

- **Deliverable: Q3 2019 – Market Design Concept Proposed**
- **Project Description:**
  - This initiative will focus on exploring modifications to the derating factor calculation to improve the measurement of the availability of a resource relative to peak load hours
    - For generators using GADS data, the current rolling-average EFORd calculation does not take into account a resource's failure to operate during hours of high demand in comparison to hours of low demand
    - Similarly, for all other resources, the derating factor calculation might be able to more accurately measure performance
  - A tailored calculation should incentivize resources and enhance reliability during critical operating periods



# Tailored Availability Metric

## ■ Stakeholder Engagement Plan:

- January, 2019: Problem Description
- February, 2019: Discussion of Analysis
- April – July, 2019: Discussion of Analysis and Proposal
- August – September, 2019: Market Design Concept Proposal

# Demand Curve Reset

Sarah Carkner, Associate Market Design Specialist



# Demand Curve Reset

## ■ Background:

- The ICAP Demand Curve reset (DCR) is conducted on a regular, periodic basis (currently every 4 years, prior to 2014 it was every 3 years)
  - Resetting the Installed Capacity Demand Curves is a process that takes approximately 18 months
- The values for the DCR are determined by an independent consultant, discussed with stakeholders, and filed with FERC at the end of the DCR process
  - The NYISO Staff Recommendation goes to the Board for approval, including consideration of stakeholder feedback

# Demand Curve Reset

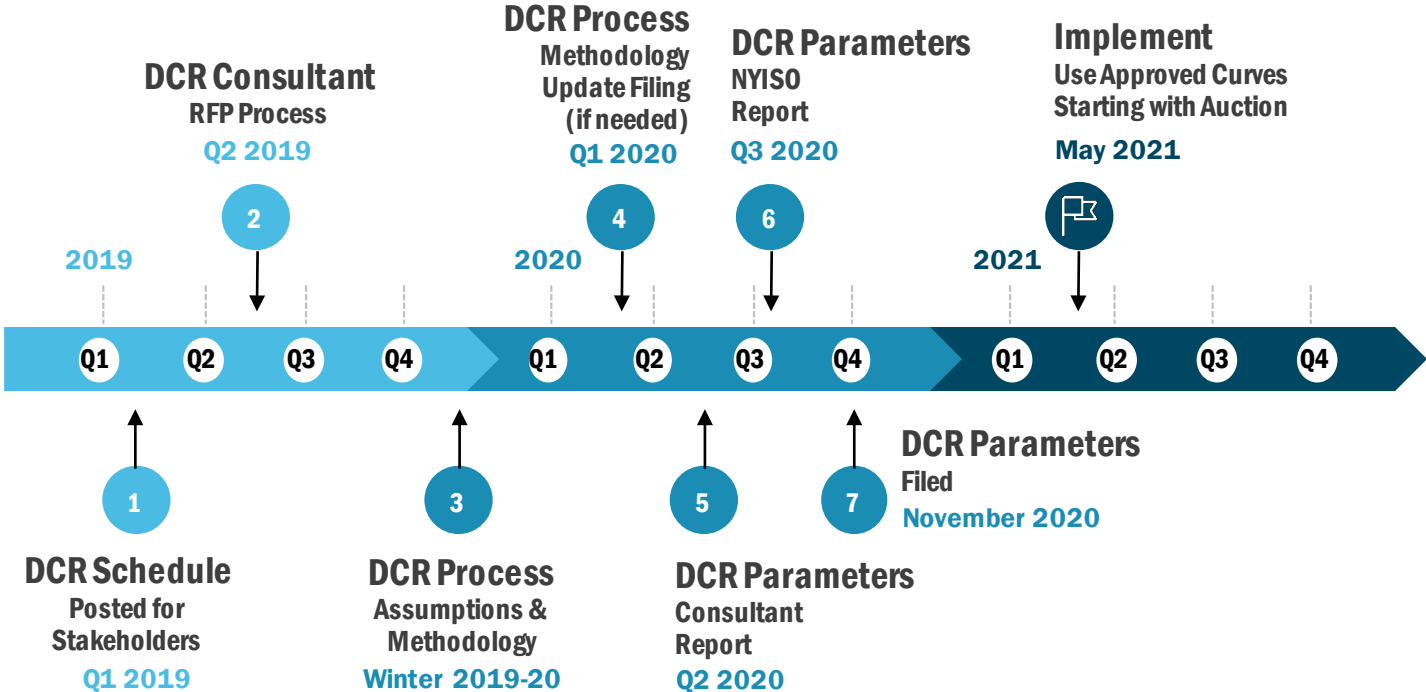
## ■ Deliverable: Q2 2019 – Issue RFP

- 2019 Commitment: Study Defined
  - Sign contract with independent consultant and sign-off from ICAP Market Design manager on project's principle, methodology, and framework

## ■ Project Description:

- The Demand Curve Reset will be ongoing from 2019-2021
- The DCR process begins in 2019, applicable to years 2021-2025
  - The NYISO will select an independent consultant to conduct a study of the parameters, assumptions and methodology used to set the NYISO's Installed Capacity Demand Curves

# Demand Curve Reset



# Demand Curve Reset

- **Stakeholder Engagement Plan:**
  - A draft schedule of the DCR process is posted with today's material
  - The NYISO is seeking feedback from stakeholders on the draft schedule

# Competitive Entry Exemption for Additional CRIS

Ryan Patterson, Associate Market Design Specialist



# CEE for Additional CRIS

## ■ Background:

- Throughout 2014 and 2015, the NYISO worked with stakeholders to develop the original Competitive Entry Exemption (CEE) for new projects, as well as BSM Rules for Additional CRIS Requests
  - These rules were accepted by FERC and are currently in use today
  - FERC's order for the NYISO to file CEE tariff provisions pre-dated the NYISO's filing of its Additional CRIS Rules, and the stakeholder-approved Additional CRIS rules did not include CEE for Additional CRIS
  - The NYISO noted in a filing on March 13<sup>th</sup>, 2015 that it “was not opposed to a CEE for Additional CRIS, but that it was beyond the scope of [FERC's original CEE] order and that CEE for Additional CRIS would require additional considerations beyond the rules currently being considered for the CEE”
  - This project seeks to continue to develop a CEE specifically for Additional CRIS requests



# CEE for Additional CRIS

- **Deliverable: Q3 2019 – Market Design Complete**
- **Project Description:**
  - This project aims to develop with stakeholders eligibility rules for a Competitive Entry Exemption for projects that request additional CRIS MW
  - MDCP presented in September 2018
  - Proposed tariff revisions presented in November 2018
  - Project consists of the following:
    - Determining the applicability and scope of a Competitive Entry Exemption for Additional CRIS MW requests
    - Discuss the impact of a Competitive Entry Exemption for Additional CRIS MW on the ICAP Market
    - Update draft tariff revisions based upon further design enhancements and stakeholder input, and propose tariff revisions for a vote

# CEE for Additional CRIS

- Stakeholder Engagement Plan:
  - Q1 2019
    - Discuss refinements to original design proposal
  - Q2 2019
    - Discuss draft tariff language
  - Q3 2019
    - Present revised tariff language
    - BIC & MC vote on final market design
  - Q4 2019 - If approved by stakeholders
    - Seek BOD Approval
    - File tariff revisions with FERC

# Repowering

Ryan Patterson, Associate Market Design Specialist



# Repowering

## ■ Background:

- Statistically speaking, fleet turnover in NYC has been relatively slow compared to plants nationwide
  - Unique hurdles in NYC raise concerns about barriers to entry that inhibit the ability of new 'greenfield' projects to displace incumbent generators
  - If barriers to entry exist, upward pressure on capacity prices do not necessarily favor repowering over retaining an existing facility
- The NYISO has initiated discussions with stakeholders to determine:
  - Whether the existing market rules are sufficient to facilitate the repowering and replacement of existing generating units, or
  - Whether new rules should be considered to specifically address the concerns with repowering projects and to encourage private investment in the same, and
  - What a repowering-specific exemption to the BSM rules that is compatible with market-based principles, and does not seek to support or encourage subsidized new entry, might look like

# Repowering

- **Deliverable: Q3 2019 – Market Design Complete**
- **Project Description:**
  - This project seeks to determine whether a mitigation exemption for Repowering projects in Mitigated Capacity Zones is warranted, and how the Repowering exemption would be structured
  - MDCP presented in December 2018
  - Project consists of the following:
    - Discussing whether a Repowering exemption from BSM rules is warranted
    - Evaluating how a Repowering exemption would function and its effects on the market
    - If an exemption to the BSM rules is determined to be warranted, drafting tariff language for a proposed Repowering exemption

# Repowering

- **Stakeholder Engagement Plan:**
  - Q1 2019
    - Discuss and refine scope, eligibility, and design
  - Q2 2019
    - Analyze impact of potential market design
    - Present draft tariff language
  - Q3 2019
    - Present revised tariff language
    - BIC & MC vote on final market design
  - Q4 2019 - If approved by stakeholders
    - Seek BOD Approval
    - File tariff revisions with FERC

# DER Market Design

# DER Project Overview

2019 Energy Market Design Projects	Q1	Q2	Q3	Q4	2019 Deliverable
DER Participation Model	MDC	CD	CD	FR	Q4 FRS
NYISO Pilot Framework	S	S	S	S	Q4 Study
Enabling Technologies for DER	PR	S			Q2 Study

## KEY

PR	Project Review
S	Study

MDCP	Market Design Concept Proposed
MDC	Market Design Complete

FR	Functional Requirements
CD	Continuing Discussions



# Enabling Technology for DER

Michael Lavillotti, Senior Market Design  
Specialist



# Enabling Technology for DER

## ■ Background:

- Technological advancements and public policy support are encouraging greater adoption of Distributed Energy Resources (DER) to meet consumer energy needs as well as system needs. DER offer the potential to make load more dynamic and responsive to wholesale market price signals, potentially improving overall system efficiencies.

# Enabling Technology for DER

- **Deliverable: Q2 2019 – Study Complete**
- **Project Description:**
  - This project will research the extent to which the NYISO's currently available market data and data delivery mechanisms enable DER participation. This project will also identify whether additional NYISO market data, data delivery process improvements, and/or delivery methods are necessary to assist REV development opportunities and DER participation.

# Enabling Technology for DER

## ■ Anticipated Deliverables:

- If the NYISO determines additional market data, data delivery process improvements, and/or delivery methods are necessary, it is anticipated that a business approved FRS documenting the requirements for this need will be developed. Such requirements would also include:
  - Any potential changes needed to price validation process
  - As-needed changes to the BMS software

# Enabling Technology for DER

- Stakeholder Engagement Plan:
  - Q1/Q2 2019
    - Evaluate and identify any needed upgrades
    - Discuss market facing finding with stakeholders

# DER Participation Model Market Design

Michael Lavillotti, Senior Market Design  
Specialist



# DER Participation Model Market Design

## ■ Background:

- The NYISO is currently developing a set of market rules for Distributed Energy Resources (DER) that will enable DER participation in NYISO's Capacity, Energy and Ancillary Services markets. The NYISO is also evaluating, in conjunction with this project, potential modifications to the structure of the Capacity Market as a whole.

# DER Participation Model Market Design

- **Deliverable: Q4 2019 – Functional Requirements**
- **Project Description:**
  - Continue drafting tariff enhancements to implement the Energy Market dispatchable DER Participation Model as posted for the December 18<sup>th</sup> MIWG/ICAPWG
    - Begin reviewing this tariff with stakeholders in Q1 2019
  - Continue working with the Capacity Market Design team to refine the Capacity Market design for the dispatchable DER Participation Model
    - Begin reviewing Capacity Market tariff with stakeholders once the design is complete
  - Will develop a software FRS once the complete Market Design is approved by stakeholders with a goal of “FRS Complete” for the calendar year 2019



# DER Participation Model Market Design

## ■ Stakeholder Engagement Plan:

- Q1 2019
  - Finalize Capacity market design
  - Finalize tariff revisions
- Q2 2019
  - Submit tariff filing to FERC, and begin functional requirements
  - Begin developing manual updates
- Q3 2019
  - Continue development of manual updates
- Q4 2019
  - Complete Functional Requirements

# DER Participation Model References

Date	Working Group	Discussion points and links to materials
03-06-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design: Aggregations</a>
04-26-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design: Measurement &amp; Configuration</a>
06-01-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design: Updates</a>
06-19-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design: Updates</a>
07-26-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design Updates: Energy Market Bid to Bill Examples</a>
10-09-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design Update: Wholesale Obligations for Dual Participation</a>
10-10-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design Update</a>
11-05-18	Market Issues Working Group (MIWG)	<a href="#">DER Market Design Updates</a>
12-18-18	Market Issues Working Group (MIWG)	<a href="#">DER Overall Energy Market Design Review</a>

# DER Pilot Program

Michael Ferrari, Associate Market Design  
Specialist



# DER Pilot Program

- **Background:**

- The NYISO kicked off a pilot program to work with interested parties to establish Pilot Projects in 2018 as part of the DER Roadmap effort
  - Purpose is to demonstrate Aggregation/DER capabilities, integration, coordination, and dual participation
- The Pilot Projects will provide value to NYISO stakeholders and Pilot Participants by:
  - Demonstrating their capabilities to provide existing dispatchable market products and meet relevant performance requirements
  - Engaging and exercising their DER technologies and solutions in a simulated ISO dispatch environment
  - Coordinating with the NYISO and Utilities to dispatch DER aggregations
- 3 proposals were selected by the NYISO in 2018 including aggregations comprised of the following:
  - High-rise buildings capable of curtailing load
  - In-front-of-the-meter battery energy storage facilities co-located with solar
  - In-front-of-the-meter battery energy storage facilities

# DER Pilot Program

- **Deliverable: Q4 2019 – Study Complete**
- **Project Description:**
  - This project will continue to use the Pilot Program framework (software and program rules) created in 2018 to allow developers and the NYISO to better understand DER capabilities and uses as well as support REV demonstration efforts. This will ultimately inform the NYISO of possible changes to market rules to appropriately incorporate new technology capabilities and meet grid needs.

# DER Pilot Program

## ■ Stakeholder Engagement Plan:

- Q2-Q4 2019
  - Share with internal and external stakeholders the findings and results of the pilot projects that complete their demonstration periods
- Q1 2020
  - Evaluate the feasibility of a 2nd round of pilot projects for selection and entry into the Pilot Program

# Energy Market Design

# Energy Market Project Overview

2019 Energy Market Design Projects	Q1	Q2	Q3	Q4	2019 Deliverable
Energy Storage Resource Participation Model	FR				Q3 Dev Complete
Carbon Pricing	CD	MDC			Q2 MDC
Reserve Procurement for Resilience	PR	S	MDCP		Q3 MDCP
More Granular Operating Reserves	PR	MDCP	MDC	FR	Q3 MDC
Ancillary Services Shortage Pricing	PR	CD	S	S	Q4 Study
Constraint Specific Transmission Shortage Pricing	MDCP	MDC		FR	Q2 MDC
Enhanced Fast Start Pricing			FR		Q3 FRS

## KEY

**PR** Project Review  
**S** Study

**MDCP** Market Design Concept Proposed  
**MDC** Market Design Complete

**FR** Functional Requirements  
**CD** Continuing Discussions



# Constraint Specific Transmission Shortage Pricing

Jennifer Boyle, Market Design Specialist

# Constraint Specific Transmission Shortage Pricing

## ■ Project Background:

- The most recent 2017 State of the Market report includes a recommendation to utilize constraint specific demand curves to set transmission constraint Shadow Prices during transmission shortages.
  - The MMU continues to recommend the implementation of constraint specific transmission demand curves that would allow for prices to better align with the severity of transmission constraints.
- The NYISO currently uses a single graduated transmission constraint pricing mechanism to set prices under many transmission constraint conditions. However, some transmission constraints are not resolved using this graduated mechanism.
- In 2018, the NYISO published a study<sup>1</sup> which highlights recommendations to develop enhancements to the current graduated transmission pricing mechanism.

1. [https://www.nyiso.com/documents/20142/2549789/Constraint%20Specific%20Transmission%20Shortage%20Pricing%20-%20Paper\\_Final.pdf/7f69227a-7ca8-656e-b895-0f8147635319](https://www.nyiso.com/documents/20142/2549789/Constraint%20Specific%20Transmission%20Shortage%20Pricing%20-%20Paper_Final.pdf/7f69227a-7ca8-656e-b895-0f8147635319)

# Constraint Specific Transmission Shortage Pricing

- **Deliverable: Q2 2019 – Market Design Complete**
- **Project Description:**
  - The 2019 project will continue 2018 efforts to develop a complete market design for enhancements to the current graduated transmission pricing mechanism.
  - The NYISO will seek stakeholder approval of a completed market design for the proposed enhancements.
  - The NYISO will be developing and finalizing internal business requirements based on the approved market design by the end of 2019.

# Constraint Specific Transmission Shortage Pricing

## ■ Stakeholder Engagement Plan:

- Q1 2019
  - Complete Market Design proposal and propose specific enhancements to the current transmission constraint pricing logic to stakeholders.
  - Conduct Consumer Impact Analysis and present results to Market Participants.
- Q2 2019
  - Finalize design proposal (including development/review of accompanying tariff revisions).
  - Present/review final design at MIWG.
  - Seek stakeholder approval at BIC and MC.
- Q3 – Q4 2019
  - Develop and finalize internal business requirements based on the approved market design

# Enhanced Fast Start Pricing

Jennifer Boyle, Market Design Specialist

# Enhanced Fast Start Pricing

- **Project Background:**

- On December 20, 2017, FERC instituted a proceeding in Docket No. EL18-33, pursuant to FPA section 206 concerning fast start pricing in NYISO markets.
- The NYISO filed an Initial Brief<sup>1</sup> on February 12, 2018 outlining the NYISO's proposed approach to amend its tariffs and revise its market software to:
  1. Modify pricing logic to allow fast-start resources' commitment costs to be reflected in prices; and
  2. Allow the relaxation of all dispatchable fast-start resources' economic minimum operating limits by up to 100 percent for the purpose of setting price.
- FERC has not yet issued a final order

1. [https://nyisoviewer.etariff.biz/ViewerDocLibrary//Filing/Filing1351/Attachments/20180212\\_NYISOInitialBrief\\_FastStart206.pdf](https://nyisoviewer.etariff.biz/ViewerDocLibrary//Filing/Filing1351/Attachments/20180212_NYISOInitialBrief_FastStart206.pdf)

# Enhanced Fast Start Pricing

- **Deliverable: Functional Requirements** (to be developed after FERC issues a final order)
- **Project Description:**
  - 2019 efforts include work to finalize the design for incorporating FERC directives into the NYISO's fast start pricing rules.

# Enhanced Fast Start Pricing

- Stakeholder Engagement Plan:
  - 2019
    - Discuss the NYISO's design approach with stakeholders



# More Granular Operating Reserves

Ashley Ferrer, Market Design Specialist

# More Granular Operating Reserves

## ■ Project Background:

- This project has the potential to provide locationally specific market signals consistent with reliability needs.
  - Originally recommended in the 2017 State of the Market and 2018 Management Response to Analysis Group's *Capacity Resource Performance in the NYISO Markets: An Assessment of Wholesale Market Options*.
- High level Market Design Concept Proposal presented in June 2018.

# More Granular Operating Reserves

- **Deliverable: Q3 2019 – Market Design Complete**
- **Project Description:**
  - This project consists of three components:
    1. Establishing 10-minute reserve requirement in NYC.
    2. Evaluating load pocket reserves.
    3. Reviewing generator reserve performance.

# More Granular Operating Reserves

- **Stakeholder Engagement Plan:**

- Q1 2019
  - Discuss More Granular Operating Reserves benefits, concepts, and impacts
- Q2 2019
  - Discuss Market Design Concept Proposal
- Q3 2019
  - Present complete Market Design proposal and associated tariff revisions

# More Granular Operating Reserves

## ■ Requesting Stakeholder Feedback:

- NYISO is considering accelerating the implementation of the Zone J reserve requirement to June 2019 based on some stakeholders feedback
  - Load pocket operating reserve concepts would continue to follow the timeline on the previous slide
- This would require completing market design and voting by March, leading to an abbreviated stakeholder process, limited analysis and no consumer impact analysis
- Today, the NYISO is looking for feedback on whether stakeholders support moving forward with this accelerated timeline to implement a NYC specific reserve requirement
  - If there is sufficient support for the accelerated implementation, the timeline on the previous slide would be revised accordingly

# Reserve Procurement for Resilience

Ethan Avallone, Senior Market Design Specialist

# Reserve Procurement for Resilience

## ■ Project Background:

- Project recommended in the 2018 Management Response to Analysis Group's *Capacity Resource Performance in the NYISO Markets: An Assessment of Wholesale Market Options*.
- High level Market Design Concept Proposal presented in June 2018
- Targeting a more detailed Market Design Concept Proposal for Q3 2019.

# Reserve Procurement for Resilience

- **Deliverable: Q3 2019 – Market Design Concept Proposed**
- **Project Description:**
  - This effort will consider enhancements to the current operating reserve shortage pricing construct to facilitate procurement of additional operating reserves beyond established minimum requirements to incent resource performance and promote grid resiliency.
  - Procurement of additional reserves above minimum requirements could enhance resilience by recognizing the value of resource availability to be responsive to unanticipated real-time operating needs.
  - The additional financial incentives could also encourage procurement of the necessary fuel to meet scheduled obligations and incent improved resource performance.



# Reserve Procurement for Resilience

## ■ Stakeholder Engagement Plan:

- Q2 2019
  - Discuss Reserve Procurement for Resilience and possible benefits within New York
- Q3 2019
  - Discuss benefits, concepts and impacts
  - Present Market Design Concept Proposal

# Carbon Pricing

Ethan Avallone, Senior Market Design Specialist

# Carbon Pricing

## ■ Project Background:

- In 2016, stakeholders requested that the NYISO consider Carbon Pricing to better harmonize New York State public policy and the NYISO wholesale markets.
- In late 2017, the Integrating Public Policy Task Force (IPPTF) was initiated to discuss Carbon Pricing.
- These task force discussions led to the IPPTF Carbon Pricing proposal, posted on December 7, 2018.

# Carbon Pricing

- **Deliverable: Q2 2019 - Market Design Complete**
- **Project Description:**
  - This project will complete the development of the Carbon Pricing market design, including supporting tariff language.
  - The NYISO will look for stakeholder approval in Q2 2019.

# Carbon Pricing

## ■ Stakeholder Engagement Plan:

- Q1 2019
  - Continue carbon pricing discussions with stakeholders.
  - Collaborate with stakeholders providing necessary additional clarity on analysis, finalizing proposal and reviewing draft tariff language.
- Q2 2019
  - Stakeholder vote on Carbon Pricing market design.
- See more detailed Carbon Pricing Stakeholder Engagement Plan posted with today's materials

# Ancillary Services Shortage Pricing

Pallavi Jain, Associate Market Design Specialist

# Ancillary Services Shortage Pricing

## ■ Background:

- Project recommended in:
  - 2017 State of the Market
  - 2018 Management Response to Analysis Group's *Capacity Resource Performance in the NYISO Markets: An Assessment of Wholesale Market Options*.
  - 2017 Integrating Public Policy report published by the NYISO.
- High level Market Design Concept Proposal presented in May 2018.

# Ancillary Services Shortage Pricing

- **Deliverable: Q4 2019 – Study Complete**
- **Project Description:**
  - This project will reevaluate the NYISO's current Ancillary Services shortage pricing values and consider the interaction of the Operating Reserve, Regulation Service, and Transmission Shortage Cost pricing levels.
  - Performance incentives in neighboring ISO/RTO regions indicate that a review of the NYISO's current shortage pricing values could offer significant value.
  - In addition, the relative value of ancillary services and resources flexibility may increase as the NYISO moves toward a future with more intermittent renewable resources.
  - Further improvements to the current shortage pricing values could enhance the financial incentives for the construction and operation of resources with specific capabilities in desirable locations.



# Ancillary Services Shortage Pricing

## ■ Project Approach:

- The Ancillary Services shortage pricing assessment (Q4 study), which will re-evaluate shortage pricing values, could lead to the recommendation for potential increase to certain shortage pricing values or implementation of more gradual demand curve steps.
- The potential changes to pricing levels recommended by the study could require a re-evaluation of shortage pricing levels from other 2019 projects:
  - Constraint Specific Transmission Shortage Pricing
  - More Granular Operating Reserves
  - Reserve Procurement for Resilience
- The NYISO will complete the detailed design proposals for the above projects prior to evaluating a design for Ancillary Services Shortage Pricing project.

# Ancillary Service Shortage Pricing

## ■ Stakeholder Engagement Plan:

- Q1 2019
  - Continue to discuss Ancillary Services Storage Pricing project with stakeholders
- Q2 2019
  - Perform preliminary research
  - Outline study approach with stakeholders
- Q3 2019
  - Perform preliminary analysis
  - Seek stakeholder feedback
- Q4 2019
  - Present completed study to Market Participants

# Energy Storage Resource (ESR) Participation Model

Pallavi Jain, Associate Market Design Specialist

# ESR Participation Model

## ■ Background:

- In 2017, the NYISO published a State of Storage report which outlines the options for ESRs to participate in the NYISO markets.
- The ESR participation model was prioritized as a key project with a deliverable of Market Design complete in Q3 of 2018.
- FERC issued Order No. 841 on February 15, 2018 directing “each RTO/ISO to revise its tariff to establish a participation model consisting of market rules that, recognizing the physical and operational characteristics of electric storage resources, facilitates their participation in the RTO/ISO markets.”

# ESR Participation Model

- **Deliverable: Q3 2019 – Development Complete**
- **Project Description:**
  - In 2018, NYISO in collaboration with its stakeholders developed a participation model for Energy Storage Resources, which it filed with the FERC on December 3, 2018 to comply with FERC Order No. 841 directives.
  - This project will continue to develop manuals, users guides and software for the storage participation model consistent with the rules submitted in compliance with Order No. 841 (adjusted if necessary, as directed by the Commission).

# ESR Participation Model

## ■ Stakeholder Engagement Plan:

- December 2018
  - NYISO filed its compliance filing with FERC on 12/3/2018.
- Q1-Q2 2019
  - Discuss opportunity cost mitigation.
  - Initiate Software development to implement participation model for Energy Storage Resources.
- Q3-Q4 2019
  - Present Manual changes accommodating ESRs.
  - Conduct Market Training workshops to enable registered/ new ESRs to effectively participate in the NYISO markets.
  - Complete Software development to implement participation model for Energy Storage Resources.

# Next steps:

Continue discussions at upcoming ICAPWG/MIWG

# Feedback/Questions?

email: [deckels@nyiso.com](mailto:deckels@nyiso.com)



# Reference

Date	Working Group	Discussion points and links to materials
06/12/2018	MC	<a href="#">2018 Master Plan</a>
10/02/2018	ICAPWG/MIWG	Constraint Specific Transmission Shortage Pricing <a href="#">Study Review and Study Paper</a>
12/17/2018	IPPFT	<a href="#">Carbon Pricing Proposal</a> and <a href="#">Additional Analysis Update</a>
10/26/2018	MIWG	<a href="#">Proposed Tariff Revisions for the ESR Participation Model</a>
06/13/2018	MIWG	<a href="#">Reserve Procurement for Resilience</a>
06/13/2018	MIWG	<a href="#">More Granular Operating Reserves</a>
05/31/2018	MIWG	<a href="#">Ancillary Services Shortage Pricing</a>

## Supporting Documentation

- [2017 State of the Market](#)
- [2018 Management Response to Analysis Group's Capacity Resource Performance in the NYISO Markets: An Assessment of Wholesale Market Options and presentation](#)
- [2017 Market Assessment - Integrating Public Policy: A Wholesale Market Assessment of the Impact of 50% Renewable Generation](#)

# 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



[www.nyiso.com](http://www.nyiso.com)