

2018 Master Plan

Wholesale Markets for the Grid of the Future

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Agenda

- Background
- Objective
- Enhancing Fuel and Energy Security
- Carbon Pricing
- Revised Project Timelines
- Next Steps

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Background

- **The NYISO has committed to publishing a “Master Plan” in 2018 that provides one cohesive strategic vision for market design:**
 - Considers the interdependencies of continuing projects, new market design concepts identified in 2017 and 2018, and existing FERC compliance directives.
 - Intended to provide a comprehensive 5-year plan that will enable the NYISO to prepare for anticipated changes to the bulk power system.
 - Does not include all market design initiatives.
 - Focused on projects that contribute to preparing for the evolution of the grid.

Strategic Themes

- Across the spectrum of current and proposed market design initiatives, three unifying themes have been identified:
 - **Resource Flexibility:**

Incenting resource flexibility, which includes the ability to respond rapidly to dynamic system conditions, provide controllable ramp with fast response rates, and startup/shutdown quickly and frequently, will be a key element to any market enhancements developed by the NYISO.
 - **Grid Resilience:**

The ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event.
 - **Price Formation:**

In order to provide efficient operational and investment signals to an increasingly diverse mix of supply resources, the markets must continue to evolve to maintain and improve alignment between the design of wholesale markets and the reliability needs of the system.
- The Master Plan describes these themes and how various initiatives fit within them.
- Project efforts are grouped to facilitate logical prioritization.
- Final project prioritization will be subject to stakeholder feedback.

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Objective

- **The objective of this presentation is to share the NYISO's revised Master Plan, which incorporates stakeholder feedback.**
 - The revised Master Plan is posted under today's MIWG materials.
 - The first draft is posted under the 5/15/18 MIWG materials.
- **The NYISO has considered both written and verbal stakeholder feedback for this revision.**

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Enhancing Fuel and Energy Security

- **The NYISO proposes to add one new project to the Master Plan.**
 - The NYISO is concerned that future changes to New York's fuel supply mix as well as the expected increased demands for natural gas may challenge the ability to meet electric system demands under certain stressed system conditions.
- **This project would study fuel and energy security for the New York State grid looking over a ten year horizon and consider opportunities for market design enhancements.**
- **The NYISO recommends that this project be prioritized as a study in 2019 and, if necessary, implementation of market design changes to follow in 2021.**

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Carbon Pricing

- **In response to the first draft of the Master Plan, stakeholders commented that the NYISO should accelerate the proposed implementation timeline for Carbon Pricing.**
 - NYISO staff considered the implications that an accelerated Carbon Pricing implementation would have on other strategic initiatives.
 - The revised Master Plan timeline accommodates Carbon Pricing implementation in 2021.
 - Implementing Carbon Pricing in 2021 would require the delay or removal of a number of other strategic initiatives, which will be discussed in this presentation.
- **The NYISO also considered whether it would be possible to implement carbon pricing in 2020.**
 - To accommodate this timeline, many more efforts within the Master Plan would be impacted.
 - The NYISO would consider this alternative plan if significant stakeholder survey feedback identifies the Carbon Pricing project as their top priority.

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Stakeholder Feedback on Project Timelines

- Some stakeholders have requested that the NYISO indicate how long each project would take if not competing with other projects for the same resources.
 - Since multiple initiatives must be undertaken simultaneously, the NYISO declines to provide individual timelines that consider how quickly each project could be done in the absence of all others.
- The Master Plan represents the NYISO's recommendation for project prioritization and implementation, in consideration of the following factors:
 - Project interdependencies
 - FERC compliance directives
 - Continuing implementation projects
 - Perceived value and urgency
 - Time required for adequate analysis
 - Anticipated time required for requirements definition, software development, and testing.
 - NYISO resource limitations

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Revised Project Timelines

- The Master Plan suggests timelines for product development and identifies target dates for key milestones.
 - Project milestones in 2019 and beyond are recommendations only.
 - Projects will be selected each year through the stakeholder prioritization process, within the NYISO's Budget and Priorities Working Group (BPWG).
- **As part of market design development, analysis is conducted to determine whether:**
 - The proposed market design concept or rule change is needed.
 - The value that the proposed market design concept or rule change would provide.
 - The expected complexity of the implementation effort.
- **After completing such analysis, the NYISO may recommend that certain designs not move forward to implementation.**

Revised Project Timelines

- **The NYISO's recommendations recognize three staggered collections of project priorities.**
 - The first priority reflects those projects with the greatest anticipated value in the near term.
 - The second priority reflects those projects that will require additional time to evaluate.
 - The third priority reflects those projects that have a longer time horizon of value contributions, require further consideration to evaluate the market benefits, or would benefit from experiences gained in other markets before committing to.
- **Implementation timelines for first priority projects reflect well understood resource constraints and priorities.**
- **Implementation timelines for second and third priority projects are less certain and likely to be revised during future project prioritization cycles.**

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2021 Carbon Pricing

- This version of the Master Plan timeline reflects the NYISO's current recommendation and is published in the Revised Master Plan draft with today's MIWG materials.
- The proposed addition of the Enhancing Fuel and Energy Security project and acceleration of Carbon Pricing implementation to 2021 necessitate significant changes to project timelines.

Strategic Initiative or Project	Impact	Change from First Draft
Reserve Procurement for Resilience	Implement in 2022	+ 1 year
More Frequent Interchange Scheduling	No work planned	Removed from Master Plan
Mitigation of 100+ kV Transmission Constraints	No work planned	Removed from Master Plan
Constraint Specific Transmission Shortage Pricing	Implement in 2023	+ 1 year
RTC-RTD Convergence Improvements	No work planned	Removed from Master Plan

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2020 Carbon Pricing

These changes to Master Plan project timelines would be necessary to implement Carbon Pricing in 2020:

Strategic Initiative or Project	Change from 2021 Carbon Pricing	Change from First Draft
Renewable and Storage Aggregation	+ 2 years	+ 2 years
Reserve Procurement for Resilience	+ 2 years	+3 years
More Granular Operating Reserves	+ 2 years	+ 2 years
Ancillary Services Shortage Pricing (SOM)	+ 2 years	+ 2 years
Flexible Ramping Product	+ 2 years	+ 2 years
Dynamic Reserve Requirements (SOM)	+ 2 years	+ 2 years
More Frequent Interchange Scheduling	-	Removed
Solar on Dispatch	+ 1 year	+ 1 year
Mitigation of 100+ kV Transmission Constraints	-	Removed
Constraint Specific Transmission Shortage Pricing	-	+ 1 year
RTC-RTD Convergence Improvements	-	Removed

Next Steps

- **June 12, 2018**
 - Present Master Plan at MC.
- **June 13, 2018**
 - Present Master Plan at MIWG.
- **June 15, 2018**
 - Stakeholders receive final project prioritization survey.
- **June 26, 2018**
 - Deadline for stakeholders to submit project prioritization survey.
- **Update 2018 Master Plan as necessary, pending stakeholder project prioritization scores**
- **Going Forward**
 - Develop annual Master Plan with stakeholder input

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Questions?

We are here to help. Let us know if we can add anything.

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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