2019 Master Plan: Final Release & Discussion

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December 3, 2019, 10 Krey Boulevard

Agenda

- Background
- Incremental Changes Since the August 29, 2019 Draft
- Next Steps
- Appendix: Project Overviews

Background

Background

- **In 2018, the NYISO created the first "Master Plan" at the request of stakeholders**
  - The goal was to create a single document that provided one cohesive, strategic multi-year vision for future market design enhancements
  - The document serves multiple purposes including providing valuable information for the NYISO's project prioritization and strategic planning processes
- **In response to stakeholder recommendations on the 2018 Master Plan:**
  - The NYISO has committed to updating the plan annually
  - The Master Plan template has been updated to better compare the level of effort required to obtain the expected benefits for each initiative
  - The template has been updated to improve the description of the intended purpose of each initiative

Strategic Themes

- **With the 2019 Master Plan, the NYISO aims to achieve three concurrent goals:**
  - Establish a clear framework for achieving the NYISO's vision of the future wholesale markets
  - Align the objectives for the next five years with the most recent Strategic Plan (2019-2023)
  - Support annual stakeholder-driven project prioritization efforts

Previous Presentations

Date	Working Group	Discussion points and links to materials
04-23-19	ICAPWG	Draft 1 Link to Presentation Link to Draft Document
05-22-19	ICAPWG	Draft 2 Link to Presentation Link to Draft Document
08-29-19	ICAPWG	Draft 3 (Final Draft) Link to Presentation Link to Draft Document

Incremental Changes Since the August 29, 2019 Draft

Incremental Changes

- **Five project timelines were modified:**
  - Reserves for Resource Flexibility: 2020 project milestone changed to Market Design Complete with Deployment in 2021
    - 2020 milestone change made to comport with 2020 Contingency Budget
  - Ancillary Services Shortage Pricing: 2020 project milestone changed to Market Design Complete with a Deployment in 2022
    - 2020 milestone change made to comport with 2020 Contingency Budget
  - More Granular Operating Reserves: 2021 Deployment milestone added to timeline
  - Grid in Transition: Issue Discovery removed from 2021 milestone, Ongoing retained for 2021
  - Energy Storage Resource Participation Model: Deployment milestone moved to Q4 2020
- **Language was added to reference the recent passing of the Climate Leadership and Community Protection Act (CLCPA)**

Next Steps

Next Steps

- **The NYISO has completed the 2019 Master Plan**
  - Discussions on the 2020 Master Plan are anticipated to begin early next year
- **At this time, the NYISO is asking for feedback on the process, layout, and content of the 2019 Master Plan in consideration of the 2020 Master Plan**
  - In addition to feedback provided at today's meeting, please feel free to submit any additional feedback to rpatterson@nyiso.com

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

Appendix

Project Overviews

Project Groupings

- **Each project is grouped into one of three initiatives discussed in the Strategic Plan:**
  - Grid Reliability and Resilience
    - Projects that serve to maintain reliability and efficient operation of the grid under normal, stressed, and extreme conditions
  - Efficient Markets for a Grid in Transition
    - Examining current and future products for how they support price formation, flexibility and resilience in a future with high renewables, energy storage, and distributed energy resources (DER)
  - New Resource Integration
    - Developing the participation models for new resource types, such as storage, DER, and aggregations
- **Although projects may address more than one initiative, the NYISO has elected to assign each project to only one initiative for purposes of the Master Plan**

Grid Reliability and Resilience

Project Name	2019	2020	2021	2022	2023	2024
Comprehensive System Planning Process Review	This project continues the effort that started in 2018 to review the comprehensive system planning process, and identify measures that could lead to more efficiently addressing the reliability, economic, and public policy needs.					
	Market Design Complete					
Reliability and Market Considerations for a Grid in Transition						
Further Discussions on Concepts Proposed in Grid in Transition Report Development of Potential Projects Resulting from Concepts Proposed	The goals of this study are to identify what market changes might be prudent in order to support reliability, efficient markets, and investment given the expected future resource mix and recent public policy actions. The NYISO is expecting this study to complete in 2019, when discussions will begin about the concepts proposed in the report. It is likely that projects, which may be included in future Master Plans, will develop as a result of this report and subsequent discussions; however, it is difficult to anticipate what those projects, and respective milestones, would be at this time.					
	Issue Discovery	Ongoing				

Grid Reliability and Resilience

Project Name	2019	2020	2021	2022	2023	2024
Enhancing Grid Resilience						
Enhancing Fuel and Energy Security	This project seeks to enhance NYISO markets to provide for anticipated generating fuel needs, which will support grid reliability.					
	Study Complete	**Concept Proposed**	**Ongoing**			
Reserves for Resource Flexibility	This project seeks to encourage resources to provide additional upward ramping capability, which will improve grid reliability and flexibility.					
	Concept Proposed	**Market Design Complete**	**Deployment**			
Large-Scale Solar On Dispatch	This project seeks to place front-of-the-meter solar resources on dispatch in the NYISO's energy markets, so that they can provide downward ramping capability when necessary and improve operational flexibility.					
			Market Design Complete	**Deployment**		

Efficient Markets for a Grid in Transition

Project Name	2019	2020	2021	2022	2023	2024
Carbon Pricing	The NYISO's Carbon Pricing proposal seeks to harmonize New York State public policy and the NYISO's wholesale markets by incorporating the social cost of carbon dioxide emissions when scheduling resources through the energy markets.					
	Market Design Complete	Functional Requirements	Deployment			
Evolution of Ancillary Services						
Ancillary Services Shortage Pricing	The purpose of this project is to evaluate the NYISO's Ancillary Services shortage pricing values, considering the implications of the grid of the future and the payment incentives in neighboring markets, including pay-for-performance capacity market designs.					
	Study Complete	Market Design Complete		Deployment		
More Granular Operating Reserves	This project seeks to establish a new operating reserve region for Load Zone J in 2019 and propose future enhancements to reserve procurement in constrained load pockets of New York City.					
	Market Design Complete		Deployment			
Reserve Enhacements for Constrained Areas	This project seeks to dynamically procure operating reserves based on system needs and transmission capabilities, which will enable operating reserves to be scheduled more efficiently in constrained areas.					
			Study Complete	Functional Requirements	Development Complete	Deployment

Efficient Markets for a Grid in Transition

Project Name	2019	2020	2021	2022	2023	2024
Enhancing Locational Price Formation						
Constraint Specific Transmission Shortage Pricing	This project seeks to improve resource scheduling efficiency and investment signals by enhancing the way that constraints on the transmission system are priced in the NYISO's energy markets.					
	Market Design Complete		Development Complete	Deployment		
Enhanced Fast Start Pricing	This project seeks to revise pricing logic for resources that can start up in 30 minutes or less, to improve price formation and incentivize new investment.					
	Functional Requirements	Deployment				
Locational Marginal Pricing of Capacity	An opportunity exists to better align capacity market clearing prices with the marginal reliability value of capacity in each Locality.					
		Issue Discovery				

Efficient Markets for a Grid in Transition

Project Name	2019	2020	2021	2022	2023	2024
Reliability Value of Resources						
Demand Curve Reset	The demand curve reset is a quadrennial study required by the NYISO Services Tariff of the various parameters used to set the Installed Capacity Demand Curves that seeks to align the capacity market with the expected costs of adding new capacity in New York State.					
	Study Defined	Study Complete			Study Defined	Study Complete
Expanding Capacity Eligibility/Capacity Values	Every four years, the NYISO will select a consultant to reassess the reliability benefit of short duration resources in the NYISO markets and provide the right investment signals to developers.					
	Functional Requirements	Development Complete	Deployment	Study Defined	Study Complete	
Tailored Availability Metric	This project looks to incentivize capacity resources to be available and perform during peak hours of operation.					
	Concept Proposed	Market Design Complete	Deployment			

Efficient Markets for a Grid in Transition

Project Name	2019	2020	2021	2022	2023	2024
Capacity Market Fundamentals						
Improving Capacity Price Formation	The Improving Capacity Price Formation project aims to examine the effects of using different slopes and shapes for the ICAP Demand Curves.					
			Study Complete	Market Design Complete	Development Complete	
Capacity Zone Evaluation	The Capacity Zone Evaluation project will review the existing rules that govern how, when and why Capacity Zones are established, changed or eliminated, and evaluate if additional rules or modifications to the existing rules are needed.					
			Study Complete	Concept Proposed	Market Design Complete	Development Complete
Comprehensive Mitigation Review	This project will conduct a holistic evaluation to consider whether the current framework of Buyer-side Market Power Mitigation ("BSM") rules will be adequate in a future with significant penetration of weather-dependent intermittent, energy storage, and distributed energy resources that are expected to result from policy objectives such as those found in the CLCPA and CES mandates.					
		Market Design Complete	Deployment			

New Resource Integration

Project Name	2019	2020	2021	2022	2023	2024
Class Year/Interconnection Queue Redesign Review	This project continues the effort that was started in Q1 2019 to review the interconnection process, and identify key areas that could lead to improvements that could (1) expedite the interconnection study process overall, particularly Class Year Study, (2) limit the possibility for a single or few projects may cause delays to numerous other projects, (3) provide an alternative and/or expedited process for deliverability analyses and BSM determinations, where appropriate; and (4) add efficiencies to the					
	Deployment					
New Resource Participation Models						
Energy Storage Resource Participation Model	This project aims to deploy a participation model for Energy Storage Resources with a minimum size of 100kW to effectively participate in the NYISO's energy, capacity and ancillary services markets.					
	Development Complete	Deployment				
Hybrid Storage Model	This project seeks to develop market participation rules for front-of-the-meter generators co-located with energy storage resources.					
		Market Design Complete	Functional Requirements	Development Complete	Deployment	

New Resource Integration

Project Name	2019	2020	2021	2022	2023	2024
DER Integration						
DER Participation Model	This effort will position the NYISO for future trends in electric grid advancements and allow for aggregations, including DER to participate in the wholesale electricity markets as well as more closely align those resources with limited duration capability to their respective Capacity payments.					
	Functional Requirements	**Software Design**	**Deployment**			
NYISO Pilot Framework	This effort would allow NYISO staff to engage and learn about nascent technologies and their applications on the electric power system which would allow staff to prepare for future market design changes.					
	Study Complete	**Study Complete**				
Meter Service Entity for DER	This project seeks to create a third party metering construct providing additional flexibility, optionality, and a modern approach to data services currently unavailable to Market Participants.					
	Functional Requirements		**Deployment**			
Dual Participation	The NYISO's proposed market design will allow resources that provide wholesale market services to also provide services to entities outside of the NYISO wholesale markets (e.g., the utility or a host facility).					
	Development Complete	**Deployment**				