New York ISO
Independent System Operator

Proposed Approach for Considering Grid In Transition Recommendations in 2021

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Agenda

- Background
- Review the NYISO proposed subset of recommendations for 2021 from the December 7, 2020 presentation
  - Tracking & Metrics
  - Energy, Ancillary Services and Capacity Market Improvements
- Next Steps

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Background

- At MIWG/ICAPWG meetings throughout 2020 the NYISO reviewed the recommendations included in the Gap Analysis included in the Grid in Transition report.
- At the December 7, 2020 MIWG/ICAPWG meeting, NYISO reviewed a categorized list (by both area and time horizon) of specific components of those recommendations in the Grid in Transition report, the Gap Analysis, and the Climate Change Phase II report and received feedback from stakeholders.
  - These recommendations where categorized into short, medium and long term items
- The NYISO has evaluated that list of recommendation components and proposes to work on a subset of the list to inform the 2021 Master Plan and the 2022 Project Prioritization Process.
  - This presentation will briefly review the recommendations reviewed at the December 7, 2020 MIWG/ICAPWG meeting and will then focus on the work we propose to focus on in 2021

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Previous Presentations

- Dec. 7, 2020 – Proposed Approach for Considering Grid in Transition Recommendations
- Jul. 28, 2020 – Reliability and Market Considerations for a Grid in Transition: Reliability Gap Assessment Potential Market Design Improvements Part 3
- Jul. 7, 2020 – Grid in Transition: Reliability Gap Assessment Potential Market Design Improvements Part 2
- Jun. 22, 2020 – Reliability and Market Considerations for a Grid in Transition: Reliability Gap Assessment Potential Market Design Improvements
- Jun. 10, 2020 – Reliability and Market Considerations for a Grid in Transition: Operations Reliability Considerations

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A Grid in Transition – A Multi-Faceted Approach

New York's Clean Energy Policies

Policy Timeline

2019 — CLCPA Passed

2025
- CLCPA Solar: 6,000 MW mandate (distributed)
- NO_X Rule: In full effect
- Energy Storage : 1500MW target

2030
- CLCPA: 70% renewable electricity
- CLCPA Storage: 3,000 MW mandate

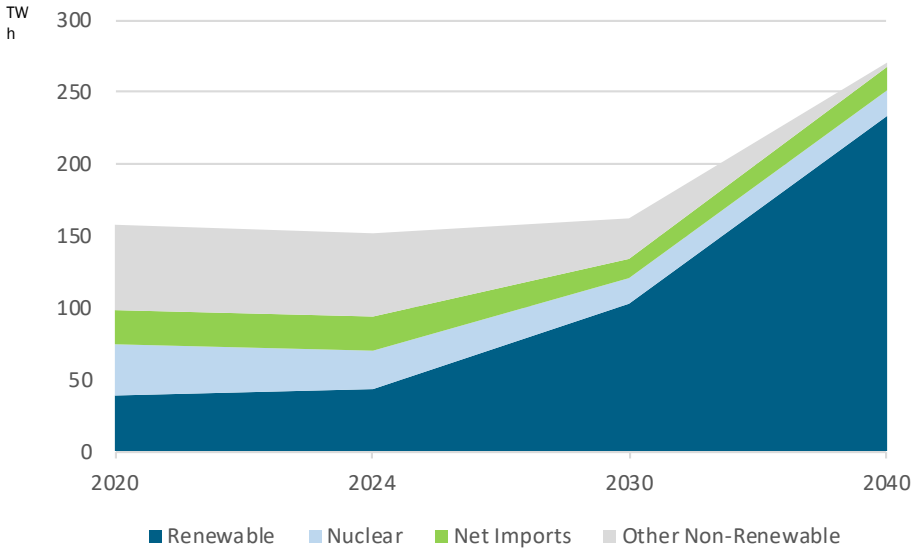
2035 — CLCPA OSW: 9,000 MW mandate

2040 — CLCPA: 100% zero emissions electricity

2050 — CLCPA: 85% NY economy-wide decarbonization

Annual Generation

A possible decarbonization path assuming a capacity addition model with "high electrification" load forecast, NYS policies and current wholesale market rules.



Sources and Notes: RGGI Auction Allowance Price and Volumes Results, New York Public Service Commission Order Adopting a Clean Energy Standard. August 1, 2016, New York DEC Adopted Subpart 227-3, New York Senate Bill S6599, Chart adapted from New York's Evolutions to a Zero Emission Power System, Modeling Operations and Investment Through 2040 Including Alternative Scenarios, ICAP/MIWG, June 22.

Grid in Transition – Key Takeaways

- **Climate Change Study[1]**
  - This study simulates the potential impacts of climate change and climate policy on the reliable operation of the New York power system
- **Grid In Transition Report[2]**
  - Describes emerging reliability and economic challenges facing New York's electricity sector
  - Proposes a path forward
- **Gap Analysis[3]**
  - Identifies gaps and new challenges to meet NYISO's mission to support a reliable and economically efficient electric system that are created by New York's decarbonization policies

[1]The Climate Change Impact and Resilience Study – Phase II: An Assessment of Climate Change Impacts on Power System Reliability in New York State was published October 15, 2020 and can be found under Climate Change Study at https://www.nyiso.com/ny-power-system-information-outlook

[2]The Reliability and Market Considerations for a Grid in Transition report ("Grid in Transition Report") was published on December 20, 2019, and can be viewed here: https://www.nyiso.com/documents/20142/2224547/Reliability-and-Market-Considerations-for-a-Grid-in-Transition-20191220%20Final.pdf/61a69b2e-0ca3-f18c-cc39-88a793469d50

[3]The Reliability Gap Assessment can be found in Appendix B of the Reliability and Market Considerations for a Grid in Transition report published December 20, 2019 https://www.nyiso.com/documents/20142/2224547/Reliability-and-Market-Considerations-for-a-Grid-in-Transition-20191220%20Final.pdf/61a69b2e-0ca3-f18c-cc39-88a793469d50

A Path Forward in 2021

- **The NYISO's wholesale markets can serve as an effective platform for achieving New York State environmental objectives.**
  - Through active engagement with stakeholders and policymakers, the NYISO is developing design improvements to meet the future challenges expected to arise with high levels of intermittent renewable and distributed energy resources.
- **The plan includes a set of enhancements that work together coherently and efficiently to satisfy New York's changing grid reliability needs.**
  - These opportunities are organized across three main points of focus (discussed on the next slide).
  - Some opportunities will require immediate attention while others might be something to consider as more information and experience becomes available.

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
  - 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 resources**
- And more…

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

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The Approach

- In the December 7, 2020 presentation individual items and recommendations were categorized and color coded as:
  - Short-Term or Underway: items that should be considered over the next 3+ years
  - Medium Term: items that should be considered beyond 3+ years or after Short-Term items have been considered
  - Long Term: items that are not pressing and should be considered after Short-Term and Medium-Term items have been considered
- The NYISO's proposed categorization is based on the information available to the NYISO at the time of the presentation and could be revised based on feedback or as more information becomes available.
- The slides used in the December 7, 2020 presentation are included in the appendix (marked as such) and those items that the NYISO proposes to focus on in 2021 are circled in green.

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Current 2021 Market Improvements Underway or Completed

2021 Market Improvements in other projects and initiatives

- There was a request to provide additional information about the underway or completed items and recommendations
- The next three slides provide brief overviews of these items. For more information please see the individual project descriptions in the January 19th, 2021 BPWG materials

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Current Market Improvements

Underway or Completed

- **Carbon Pricing [2021 Software Design]**
  - The proposal proceeded through the NYISO stakeholder process, and now awaits support from New York State. This phase of the NYISO's carbon pricing project will deliver a Software Design to effectuate the NYISO's carbon pricing proposal.
- **Comprehensive Mitigation Review [2021 MDC]**
  - Explore further modifications to the BSM tests
  - Explore the feasibility and value of more complex alternatives including fundamental capacity market redesign
- **DER Participation Model [2021 Deploy SD-WAN, Dev. Comp. for BSS & Billing Simulator and 2022 Deploy]**
  - In 2021, the NYISO will work on development of the required software including deployment of SD-WAN (Software-defined Wide Area Network), an enabling technology used for telemetry that is required for DER. Once SD-WAN is implemented; it could potentially be used for telemetry by Market Participants, including Demand-Side Ancillary Services Program (DSASP) resources and Energy Storage Resources (ESR). Completing software development of remaining components, testing, market trials, and deployment to the production environment are planned for 2022.

Note: Updates on active projects will be done as part of their respective projects

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Current Market Improvements

Underway or Completed

- **Hybrid Co-Located Model [2021 Deploy]**
  - This project is a continuation of the 2020 Hybrid Storage model Market Design Complete commitment and will work to integrate the rules and software needed to enable large-scale weather dependent and energy storage resources to participate as co-located resources behind a single interconnection point. The 2021 project deliverable is Deployment for software changes necessary to support market participation.
- **Regulation Service [COMPLETED 9/1/20]**
  - Continue to monitor fleet changes and appropriately update statewide regulation procurement requirements.
- **Hybrid Aggregation Model (Hybrid Storage) [2021 MDC]**
  - This project is a continuation of the 2020 Hybrid Storage model effort and will develop market rules that allow the aggregation of an ESR and another Generator co-located behind the same point of interconnection to share a single PTID and act as a single resource. The 2021 project deliverable is a Market Design Complete.
  - Consider allowing hybrid aggregated resources to supply reserves (2021 MDC).

Note: Updates on active projects will be done as part of their respective projects

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Current Market Improvements

Underway or Completed

- **Operating Reserves**
  - Increasing statewide 10- and/or 30-minute operating reserve requirements
    - Ancillary Services Shortage Pricing [2021 Implementation]
    - Reserves for Resource Flexibility [2021 Implementation]
  - Reserve Enhancements for Constrained Areas (RECA) [2021 Study]
    - Develop reserve requirements dynamically including dynamic modeling of reserve locations and transmission congestion (includes SOM-2015-16)
    - Explore dynamic procurement of reserves based on largest source contingency and dynamic allocation of reserves based on available transmission capability
    - More Granular Operating Reserves [Included in RECA study]
      - Increasing locational thirty-minute total operating reserve requirements
        - » Consider modeling local reserve requirements in New York City load pockets (SOM-2017-1)

Note: Updates on active projects will be done as part of their respective projects

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Current Market Improvements

Underway or Completed

- **Planning Initiatives**
  - Provide more granular forecasts further out into the future [COMPLETED 2020]
    - 2020 Gold Book includes 30-year forecasts with granular data of forecast components
  - Provide transparent behind-the-meter solar forecasts [COMPLETED 2020]
    - Posted BTM solar forecasts and actuals beginning Nov. 2020
  - Revise the Economic Planning Process to include broader identifications of constraints and assessments of energy deliverability of future resources [COMPLETED 2020]
    - Implementation pending FERC acceptance of tariff revisions, expected April 2021
  - Perform system assessments for future resource mix scenarios [ONGOING]
    - 2020: Climate Change Study, CARIS 70x30 Scenario, RNA
    - 2021-2022: Comprehensive Reliability Plan, System & Resource Outlook

Note: Updates on active projects will be done as part of their respective projects

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Proposed Tracking & Metrics to be considered in 2021

Potential Tracking & Metrics

- **Establish a baseline and an early warning system to review if the market rules are consistent with what is needed for reliability. Starting with:**
  - Evaluate if net forecast uncertainty is causing inefficiencies and, if so, could the uncertainty be decreased. Tracking:
    - *Thermal unit commitments and revenues*
    - *Flexible resource uplift*
    - *Self scheduling of flexible resources*
  - Is sufficient Regulation being procured and what are the characteristics of units providing Regulation? How flexible are they?
    - *Tracking if increasing imbalances in RT are being met with Regulation Service*
  - Are changes needed to Reserves and are there sufficient providers of reserves?
    - *Are synchronous resources providing 30 minute reserves receiving uplift payments?*
    - *Unit commitment in RTD/RTC: Are units being committed in RTC with high shadow prices that are not there in RTD?*

Note: The operations plans for addressing the potential reliability concerns can be found in the June 10 2020 presentation Reliability and Market Considerations for a Grid in Transition: Operations Reliability Considerations

Potential Tracking & Metrics (cont.)

- **Tracking run-limited resources to understand the services they provide and their limitations**
  - Need for cataloging/tracking energy/run-limited resources such as ESRs, demand response, emissions restricted output, noise restricted output, etc.
    - *This could be included in the Expanding Capacity Eligibility process that will report out the current amount of duration limited MWs each year*

Note: The operations plans for addressing the potential reliability concerns can be found in the June 10 2020 presentation Reliability and Market Considerations for a Grid in Transition: Operations Reliability Considerations

Potential Market Improvements to be considered in 2021

Potential Energy & Ancillary Service Market Improvements

- Improve monitoring and investigate resource variability and forecast uncertainty
  - Understand and consider ways to reduce load forecast data and process latency
  - Understand and consider ways to reduce intermittent resource forecast data and process latency
- Operating Reserves
  - Improve combined cycle (CC) Modeling of Slow Ramp region

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Potential Capacity Market Improvements

- **Enhancing Resource Adequacy Modeling**
  - Investigate opportunities to evolve current models and methods to account for:
    - Growth in Load Forecast Uncertainty
    - Load Shapes represented in the RA model
  - Improve the alignment of the IRM and LCR process
    - Re-assess the merits of incorporating load forecast updates between the IRM and LCR determinations
    - Support the NYSRC's efforts to evaluate incorporating TSL into the IRM determination process
    - Assess if further information or process improvements would provide value to ensure the IRM/LCR determinations are intuitive and transparent

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Next Steps

Next Steps

- Early March – review of Tracking & Metrics
- Q1 – begin discussions of Capacity Market and/or Resource Adequacy Improvements
- Q2 – begin discussions of Energy Market Improvements
- The NYISO is seeking stakeholder input on the proposed recommendation components. Feedback can be provided at today's meeting or in writing after today's meeting.
    - Please send any written feedback to Debbie Eckels DEckels@nyiso.com

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Appendix

The Approach

- In the December 7, 2020 presentation individual items and recommendations were categorized and color coded as:
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Slide from December 7 Presentation

Aligning Competitive Markets and New York State Clean Energy Objectives

Aligning Market Incentives

- Carbon Pricing
- Comprehensive Mitigation Review

Slide from December 7 Presentation

- Short-Term or Underway
- Medium Term
- Long Term

Slide from December 7 Presentation

Prepare for New Technologies

- **Implement a cohesive set of market rules to accommodate new resource technologies such as:**
  - Distributed Energy Resources (DER)
    - Sunset DADRP, DSASP
  - Co-Located Storage Resources
  - Hybrid Storage Resources
  - Non-continuous and Long Duration Energy Storage Resources
  - Enabling improved Demand Participation
    - Evolve SCR and EDRP Programs
  - Sunset other market products

•Short-Term or Underway
•Medium Term
•Long Term

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Slide from December 7 Presentation

Planning for the Future

•Short
Underway
•Medium Term
•Long Term

- **Providing transparency and information to promote market efficiency**
  - Perform system assessments for future resource mix scenarios
  - Provide transparent behind the meter solar forecasts
  - Consider providing more granular forecasts further out
  - Revise the Economic Planning Process to include broader identifications of constraints and assessments of energy deliverability of future resources
- **Assessing Reliability Issues**
  - Continue to leverage Reliability Needs Assessments and other planning studies to:
    - Consider if the impact of grid forming inverters requires changes in existing processes
    - Consider need for Inertia Response
    - Evaluate voltage support and system strength needs

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Slide from December 7 Presentation

Valuing Resource and Grid Flexibility

Slide from December 7 Presentation

Valuing Resource & Grid Flexibility

- **This section has been grouped onto the following sub-sections:**
  - Potential Tracking and Metrics
  - Potential Energy Market Design Improvements
    - Improve managing resource variability and forecast uncertainty
      - Evaluate improvements to forecast latency and accuracy
      - Revisit interregional coordination improvements
      - Real-time Dispatch (RTD)
      - Real-Time Commitment (RTC)
      - Day Ahead Market (DAM)
    - Track run-limited resources
    - Other
  - Potential Ancillary Service Market Improvements
    - Operating Reserves
    - Regulation
    - Frequency Response
    - Cost-based Ancillary Services
    - Expanded Ancillary Services
  - Potential Other Market Process Improvements

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Slide from December 7 Presentation

Potential Tracking & Metrics

- **Establishing a baseline and an early warning system**
  - Net forecast uncertainty
    - Consider tracking thermal unit commitments and revenues
    - Consider tracking flexible resource uplift
    - Consider tracking self scheduling of flexible resources
  - Regulation and the providers of regulation
    - Consider tracking if increasing imbalances in RT are being met with regulation service
    - Consider tracking evolving demands for regulation service
    - Consider tracking characteristics of regulation providers
  - Reserves and the providers of reserves
    - Is the NYISO getting significant amounts of DR providing reserves? If not why not?
    - Are synchronous resources providing 30 minute reserves receiving uplift payments?
    - Does the stepwise construct of the demand curves create inefficiencies with resource commitments?
    - Unit commitment in RTD/RTC: Are units being committed in RTC with high shadow prices?
    - Is the $25/$40 demand curve step setting prices in DAM, RTC, RTD?
  - Consider tracking Energy Limited Resources' available energy over the operating day
  - Track real-time interchange transaction offers and projected prices from RTC and neighbors look-ahead tools and address any consistent biases to improve liquidity

•Short-Term or Underway
•Medium Term
•Long Term

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Potential Energy Market Design Improvements

Slide from December 7 Presentation

- **Improve managing resource variability and forecast uncertainty**
  - Reduce load forecast latency
  - Reduce intermittent resource forecast latency
  - Account for increased RT load forecast uncertainty
  - Potential gains from partnering with neighboring ISOs to participate in the regional NPCC ACE diversity program
  - Evaluate more frequent and/or 5-minute interchange scheduling protocols with neighbors
  - Revisit broader regional markets (BRM) and regional dispatch to improve regional coordination and enable external resources to support NYCA's flexibility needs
  - Real-Time Dispatch (RTD)
    - Consider enhancements to the Real-Time Dispatch Corrective Action Mode (RTD-CAM) that would allow for periodic quick dispatches to address high system volatility
    - Consider adjusting look-ahead evaluations of RTD and RTC to be more consistent with the timing of external transaction ramp and gas turbine commitment. (SOM-2012-13)
    - Consider if commitment of quick start units should be in RTD (less impacted by RTC forecast latency)
      - Determine whether all real-time interchange scheduling move to RTD

•Short-Term or Underway
•Medium Term
•Long Term

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Potential Energy Market Design Improvements (Cont.)

Slide from December 7 Presentation

- **Improve managing resource variability and forecast uncertainty (cont.)**
  - Real-Time Commitment (RTC)
    - Consider ways to improve 15-minute and CTS scheduling by reducing forecast latency and/or move the process into RTD
    - Consider adjusting look-ahead evaluations of RTD and RTC to be more consistent with the timing of external transaction ramp and gas turbine commitment. (SOM-2012-13)
    - Does RTC need to look out further to commit slower resources due to changes in weather conditions from the Day Ahead (this may require another settlement)
      - This may help with real-time price formation concerns following SREs or other commitments that lead to depressed RT prices

•Short-Term or Underway
•Medium Term
•Long Term

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Potential Energy Market Design Improvements (Cont.)

Slide from December 7 Presentation

- **Improve managing resource variability and forecast uncertainty (cont.)**
  - Day Ahead Market (DAM)
    - Are changes in the forecast load and the reliability commitment pass needed?
    - Revisit using maximum forecast for the hour to ensure the DAM commits resources to meet the maximum ramping needs across the hours and day
    - Alternatively consider understating the ramp rates of resources in SCUC
    - Consider explicitly modeling ramp in DAM
      - What are locational ramp requirements?
    - Evaluate whether sub-hourly commitments might be needs in critical parts of the day
      - Are mid-hour schedules needed to balance predictable solar ramp?

- Short-Term or Underway
- Medium Term
- Long Term

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Potential Energy Market Design Improvements (Cont.)

Slide from December 7 Presentation

•Short-Term
Underway
•Medium Term
•Long Term

- **Track run-limited resource**
  - Need for cataloging/tracking energy/run-limited resources such as ESRs, demand response, emissions restricted output, noise restricted output, etc.
    - Determine whether constraints can be effectively managed through existing market participation rules
  - Energy/Run Limited Resource Management
    - Develop new concepts: dispatch price based on energy in storage
    - Develop the ability to manage energy limits over a day or more (i.e., more than 24 hours)
    - Are additional market power mitigation measures needed?
- **Other**
  - Consider increasing the energy offer floor for internal resources (SOM-2019-2)

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Potential Ancillary Service Market Improvements

Slide from December 7 Presentation

- Short-Term or Underway
- Medium Term
- Long Term

- **Operating Reserves**
  - Increasing statewide 10- and/or 30-minute operating reserve requirements
    - Ancillary Services Shortage Pricing
    - Reserves for Resource Flexibility
  - Monitor and manage sustainability of resources providing 10-minute and 30-minute reserves
  - Reserve Enhancements for Constrained Areas
    - More Granular Operating Reserves
      - Increasing locational thirty-minute total operating reserve requirements
        - » Consider modeling local reserve requirements in New York City load pockets (SOM-2017-1)
    - Develop reserve requirements dynamically including dynamic modeling of reserve locations and transmission congestion (includes SOM-2015-16)
  - Consider whether real-time offers should allow costs for providing reserves
  - Expand provider eligibility and improve modeling of existing resources to ensure reserves are deliverable
    - Consider allowing aggregations of DERs and hybrid resources to supply reserves
    - Improve combined cycle (CC) Modeling of Slow Ramp region
    - Evaluate Treatment of response rates use in scheduling/deploying reserves
  - Consider more sloped/continuous demand curves
  - Determine need for longer lead time replacement reserves

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Potential Ancillary Service Market Improvements (Cont.)

Slide from December 7 Presentation

•Short-Term
Underway
•Medium Term
•Long Term

- **Regulation Service**
  - Continue to monitor fleet changes and appropriately update statewide regulation procurement requirements
  - Consider improvements to resource requirements for providing regulation
  - Investigate benefits of separate “up” and “down” service
  - Revisit regulation pricing
  - Investigate how to include transmission congestion when awarding regulation capacity
  - Investigate the potential for new resource types to supply frequency response capability
  - Investigate the ability to use regulation to meet sustained imbalances up or down without large ACE imbalances

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Potential Ancillary Service Market Improvements (Cont.)

Slide from December 7 Presentation

•Short-Term
Underway
•Medium Term
•Long Term

- **Frequency Response**
  - Depending on findings of long term studies, consider whether market or cost-based mechanisms are necessary to compensate for inertial response
- **Cost-based Ancillary Services**
  - Reactive Supplier Requirements
  - Improve Voltage Support Incentives
  - Review NYCA-wide and Local Black Start Requirements and Incentives
- **Expanded Ancillary Services**
  - Ramping Services
    - Investigate the need for ramping services
    - Investigate the need for a zonal ramping product
  - Consider valuing system strength and/or short circuit capabilities
    - Do we need to pay grid forming capabilities?

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Other Potential Market Process Improvements

Slide from December 7 Presentation

•Short-
Underway
•Medium Term
•Long Term

- **Considering shortening the Real-time Market close process from 75-minutes before the top of the operating hour**
  - In the alternative, consider allowing updating certain offer data closer to the binding RTC/RTD evaluation window
- **Consider resource outage scheduling improvements to accommodate shifts in net load variations due to intermittent resource penetration**
  - This has implications with defining the Peak Load Windows, used for enforcing capacity supplier obligations

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Slide from December 7 Presentation

Improving Capacity Market Valuation

Enhancing Resource Adequacy Modeling

Slide from December 7 Presentation

•Short-Term
Underway
•Medium Term
•Long Term

- **Investigate and where needed evolve current models and methods to account for**
  - Growth in Load Forecast Uncertainty
  - Load Shapes represented in the RA model
- **Investigate and where needed evolve current modeling of energy limited resources especially during periods of multi-day needs**
  - Modeling the variability of Wind and Solar
  - Additional BTM Solar modeling
  - Winter only resources
  - Co-located Storage Resources
- **Review NYISO's Resource Adequacy design versus other control areas and build off of the lessons learned/recommendations from that review**

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Improving Installed Capacity Market Incentives

Slide from December 7 Presentation

•Short-
Underway
•Medium Term
•Long Term

- Explore multiple-value pricing, a fundamental capacity market redesign where different resource classes have different demand curves based on their characteristics
- Explore capacity requirements based on transmission security considerations
- Consider updates to the Demand Curve structure
  - Review the shape and zero crossing point
  - Consider modifying the translation of the annual revenue requirement for the demand curve unit into monthly demand curves that consider reliability value. (SOM-2019-4)
- Consider what would be needed to expand software to support additional localities
- Update design to allow for transition from summer peaking to winter peaking control area

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Review Capacity Market Resource Ratings

Slide from December 7 Presentation

- Expanding Capacity Eligibility
- Tailored Availability Metric
- Capacity value study while considering Effective Load Carrying Capability (ELCC) methodology for valuing all resources contribution to reliability
- Evaluate using performance based measures for resources that currently rely on availability based metrics like EFORd
- Consider deliverability study assumptions for capacity suppliers to ensure all capacity can be delivered during gross and net load peaks

- Short-Term or Underway
- Medium Term
- Long Term

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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

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Questions?