New York ISO
Independent System Operator

Economic Planning Process

2023-2042 System & Resource Outlook

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Monday July 17, 2023

Agenda

- Outlook Scope & Schedule Review
- 2023-2042 System & Resource Outlook
  - Benchmarking (see other presentation posted)
  - Study Improvements
  - High Level Assumptions Review
- Next Steps
- Questions, Comments, & Feedback

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Outlook Scope & Schedule Review

System & Resource Outlook Objectives

1. Create a biennial report that summarizes the current assessments, evaluations, and plans in the biennial Comprehensive System Planning Process
2. Produce a twenty-year projection of system conditions for demand, generation, and transmission across the New York transmission system
3. Identify, rank, and group congested elements
4. Assess the potential benefits of addressing congestion
5. Develop informative scenario cases
6. Perform technical analyses to inform internal and external stakeholders

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Uses for System & Resource Outlook

- Identify potential challenges to meeting the New York State CLCPA targets
- Inform stakeholders and policy makers where future public policy needs may exist
- Define renewable generation pockets
- Prepare system models to perform Economic Transmission Project Evaluation and/or Requested Economic Planning Studies

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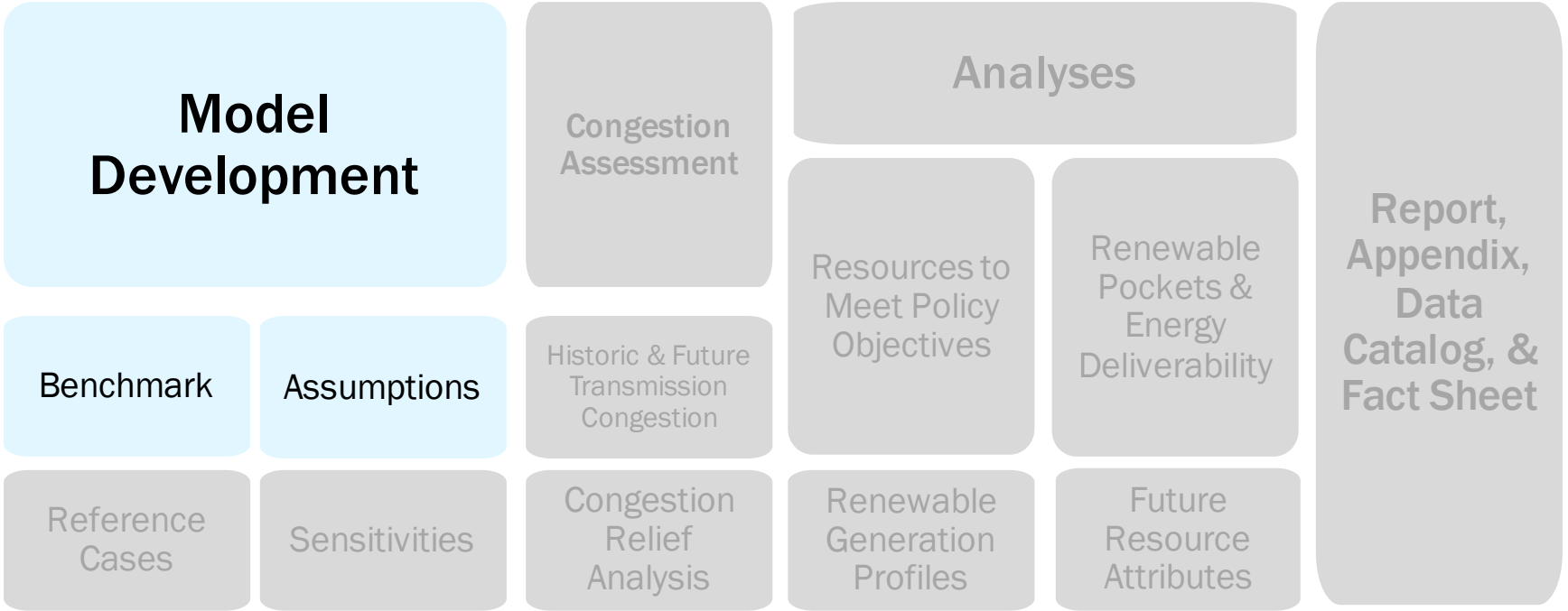
System & Resource Outlook Scope



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Preliminary Targeted Study Schedule

2023 Q3	Month	July					August				September			
	Week	1	2	3	4	5	1	2	3	4	1	2	3	4
	Benchmarking	X	X	X										
	Assumptions Development	X	X	X	X	X	X	X	X	X	X	X	X	X
	CapEx Model Development	X	X	X	X	X	X	X	X	X	X	X	X	X
	Production Cost Model Development	X	X	X	X	X	X	X	X	X	X	X	X	X
	CapEx Results													
	Production Cost Results													
	Analyses													
	Report													

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2023-2042 System & Resource Outlook

Benchmarking

- Production cost model benchmark performed over past several weeks
- Detailed benchmarking results provided in next presentation today
- See presentation posted with today's material here:
  - https://www.nyiso.com/documents/20142/38814673/07a_07172023_ESPWG_PCM_Benchmark_Results_Final.pdf
- Draft Appendix also posted for review here:
  - https://www.nyiso.com/documents/20142/38814673/07b_07172023_ESPWG_DRAFT%20Appendix%20-%20Production%20Cost%20Model%20Benchmark_Final.pdf

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Study Improvement Considerations

- In November 2022, the NYISO held a Lessons Learned session for the 2021-2040 Outlook (Link)
- Stakeholders provided recommendations for process and modeling improvements for the 2023-2042 Outlook
- The NYISO performed detailed review and estimated level of effort for study updates, which totaled **> 300** engineer weeks
- The NYISO prioritized improvements by balancing impact and level of effort

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Study Improvements Selected

- **Stakeholder Communication**
  - Increase lead-time for report review (e.g., Appendix attached today)
  - Continue Data Catalog every presentation
  - Increased clarity on schedule and timeline (see Schedule slides)
- **Capacity Expansion Model**
  - Add external pools
  - Improve time representation
  - Add 8-hour energy storage as candidate for expansion (MMU Recommendation)
  - Model generation supply curves for renewable technologies
  - Update ELCC curves
  - CLCPA goal model for “70x30”
- **Production Cost Model**
  - Improve energy storage modeling (MMU Recommendation)
  - Evaluate “spillage” via copper-sheet model
  - Improve hydro model to better capture pondage capability
- **Renewable Modeling**
  - Develop new offshore wind, land-based wind, and solar hourly profiles

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High Level Study Assumptions

- Meant to provide general direction of futures to be modeled
- More detailed assumptions will be reviewed and discussed at upcoming meetings
- Preliminary assumptions lockdown dates
  - Capacity Expansion Model – October
  - Production Cost Model – November
- For reference, 2021-2040 Outlook assumptions:
  - Production Cost Model (Link)
  - Capacity Expansion Model (Link)

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Preliminary High Level Assumptions

Assumptions	Base	Contract	Policy
Load	2023 Gold Book Baseline Forecast	2023 Gold Book Baseline Forecast	2023 Gold Book Policy Forecast
Generation	2023 Gold Book List of Generators	Consistent with Base Case	Consistent with Contract Case (including new generation)
New Generation	As per the inclusion rules in the 2022 RNA/2023 Q3 STAR	2022 NYSERDA RFP additions	Determined by policies and economics via capacity expansion modeling
Retirements	2022 RNA/2023 Q3 STAR	Age and contract based	Determined by policies and economics via capacity expansion modeling
Transmission Topology (Powerflow Case)	2022 RNA	2022 RNA	2022 RNA
New Transmission Projects	LIPPTN, CHPE, NYPA Smart Path	LIPPTN, CHPE, NYPA Smart Path, JU P1/P2, CPNY	LIPPTN, CHPE, NYPA Smart Path JU P1/P2, CPNY

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Next Steps

Next Steps

- Benchmark Presentation (Nischal Rajbhandari)
- Continue Capacity Expansion Model Development
- Develop Detailed Model Assumptions
- Upcoming Stakeholder Presentations
  - 8/22 ESPWG

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Questions, Comments, & Feedback?

Email additional feedback to:
JFrasier@nyiso.com

2023-2042 System & Resource Outlook Data Catalog

Report

Report Placeholder

Study Summary

Summary Placeholder

Stakeholder Presentations

November 18, 2022

- 2021 Outlook Lessons Learned
- NYSERDA Outlook Suggestions

June 16, 2023

- 2023-2042 Outlook Kickoff

July 17, 2023

- 2023-2042 Outlook Benchmark
- 2023-2042 Outlook Update

Report Appendices

Data Documents

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Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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