New York ISO
Independent System Operator

# 2023-2042 System & Resource Outlook


## Sarah Carkner

Manager, Long Term Assessments


## Business Issues Committee (BIC)

Thursday, June 20, 2024 - NYISO

# Agenda

- Overview
- Report & Technical Appendices
- Key Findings
- Next Steps
- Outlook Data Catalog

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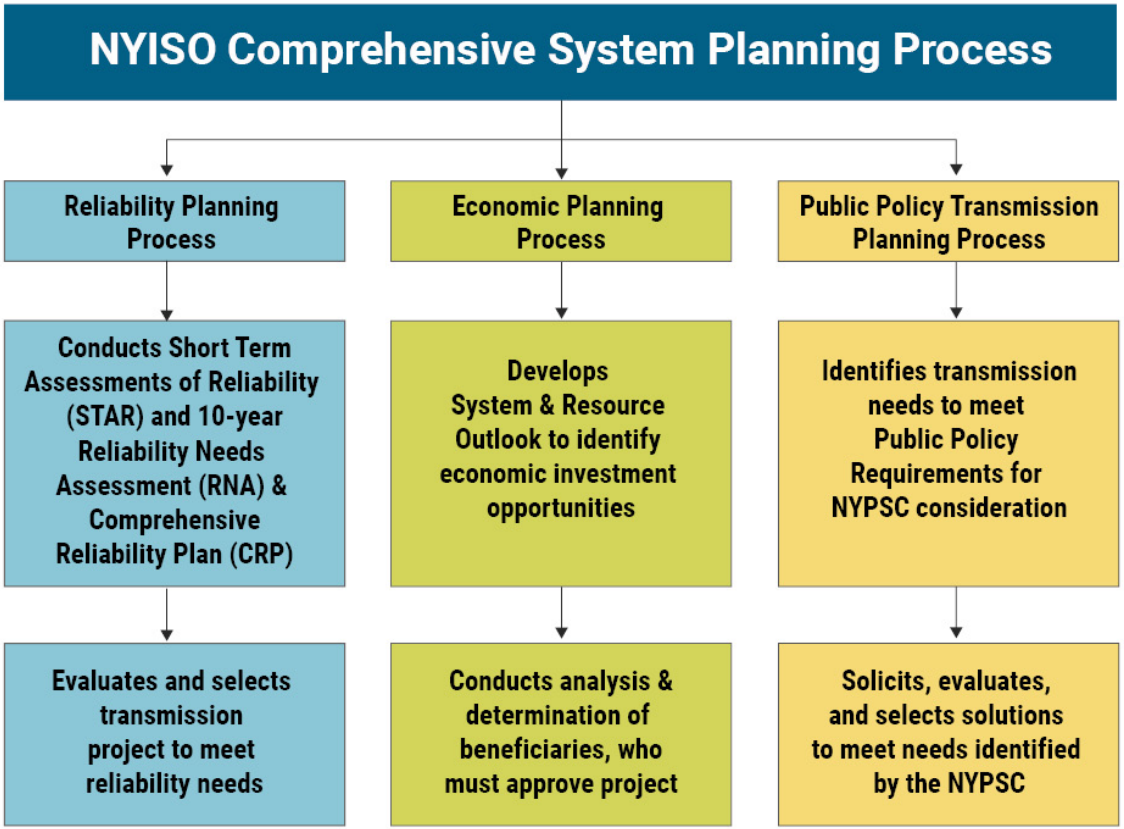
# Overview: NYISO's Economic Planning Process

# NYISO Comprehensive System Planning Process

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# 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 stakeholders and interested parties

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# Uses for System & Resource Outlook

- Identify potential challenges to meeting the New York State CLCPA mandates
- Inform stakeholders and policymakers 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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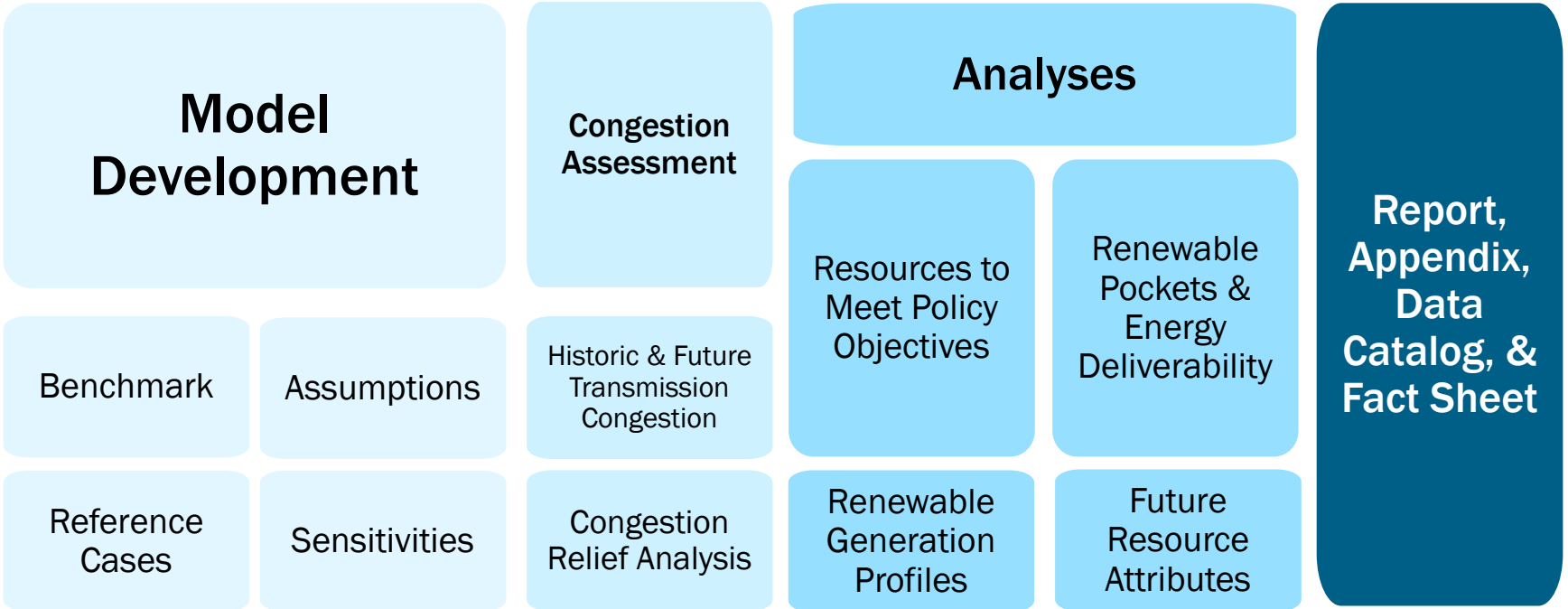
# System & Resource Outlook Scope

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# Report & Technical Appendices

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- Appendix C: Capacity Expansion Assumptions Matrix
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- Appendix E: Renewable Profiles & Variability
- Appendix F: Dispatchable Emission-Free Resources
- Appendix G: Production Cost Model Results
- Appendix H: Capacity Expansion Model Results
- Appendix I: Transmission Congestion Analysis
- Appendix J: Renewable Generation Pockets
- Appendix K: Capacity Expansion Model Sensitivity Analysis

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# Key Findings

# Key Finding 1: Demand

- ✓ Electric energy consumption is projected to increase significantly in response to the economic development and decarbonization energy policies. Resources and the transmission system necessary to meet the changing energy demand need to evolve accordingly.

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# Key Finding 2: Demand

- ✓ Siting large loads in electrical proximity to renewable resources, or siting resources near large loads, may benefit both the loads and the resources, particularly if located upstream of known constraints.

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# Key Finding 3: Supply Resources

- ✓ Dispatchable emission-free resources must be developed to provide the capacity, energy, and other essential grid services required to achieve the policy mandate for a zero-emissions grid by 2040.

# Key Finding 4: Supply Resources

- ✓ New York will require three times the capacity of the current New York generation fleet to meet projected future electricity demands.

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# Key Finding 5: Supply Resources

- ✓ The coordination of new generator additions and existing generator retirements is essential to maintain the reliability of the New York power system while simultaneously pursuing achievement of CLCPA.

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# Key Finding 6: Supply Resources

- ✓ Uncertainty in siting new renewable generation could lead to delays in or inefficient expansion of the transmission and distribution systems.

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# Key Finding 7: Transmission

- ✓ Historic levels of investment in the transmission system are happening but more will be needed.

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# Key Finding 8: Transmission

- ✓ Actionable expansion opportunities: To fully utilize the transmission facilities already in place, additional dynamic reactive power support must be added to the grid in upstate New York to alleviate curtailment over the Central East interface.

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# Key Finding 9: Transmission

- ✓ Opportunities for further transmission investment in Western and Northern New York should be monitored as resources are developed in those regions.

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# Key Finding 10: Transmission

- ✓ Planning energy exchange with neighboring systems is becoming more complex and will be increasingly so in the future as each system transitions to more decarbonized systems.

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# Next Steps

# Next Steps

- Seek Business Issues Committee recommendation
- Seek Management Committee recommendation on June 27, 2024
- Seek Board of Directors approval in July 2024

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# Questions, Comments, & Feedback?

Email additional feedback to:
SCarkner@nyiso.com

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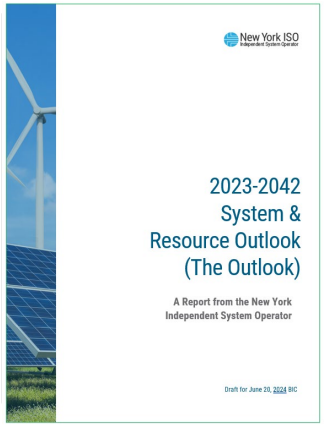
# 2023-2042 System & Resource Outlook Data Catalog

## Report




## Study Summary

Summary Placeholder

## Report Appendices

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Appendix K: Capacity Expansion Model Sensitivities

## Data Documents

Reference Case Input Assumptions
Reference Case Results

## 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

**August 22, 2023**
- 2023-2042 Outlook Preliminary Reference Case Assumptions

**September 21, 2023**
- 2023-2042 Outlook Reference Case Assumptions Update

**October 24, 2023**
- 2023-2042 Outlook Reference Case Assumptions Update

**November 2, 2023**
- 2023-2042 Outlook Reference Case Assumptions Update & Preliminary Base Case Results

**November 21, 2023**
- 2023-2042 Outlook Reference Case Updates

**December 19, 2023**
- 2023-2042 Outlook Reference Case Updates & Preliminary Contract Case Results

**January 23, 2024**
- 2023-2042 Outlook Reference Case Updates

**February 22, 2024**
- 2023-2042 Outlook Reference Case Updates & Final Base & Contract Case Results

**March 1, 2024**
- 2023-2042 Outlook Preliminary Contract Case Renewable Pockets & Capacity Expansion Scenario Results

**March 21, 2024**
- 2023-2042 Outlook Policy Case Updates

**April 4, 2024**
- 2023-2042 Outlook Policy Case Updates

**April 30, 2024**
- 2023-2042 Outlook Policy Case Updates & Preliminary Policy Case Renewable Pockets

**May 3, 2024**
- 2023-2042 Outlook Status Updates

**May 14, 2024**
- 2023-2042 Outlook Status Updates and Preliminary Draft Report

**June 7, 2024**
- 2023-2042 Outlook Preliminary Key Findings and Draft Report

2021-2040 System & Resource Outlook Data Catalog

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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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