New York ISO
Independent System Operator

Updates on NYISO's Comprehensive System Planning Process

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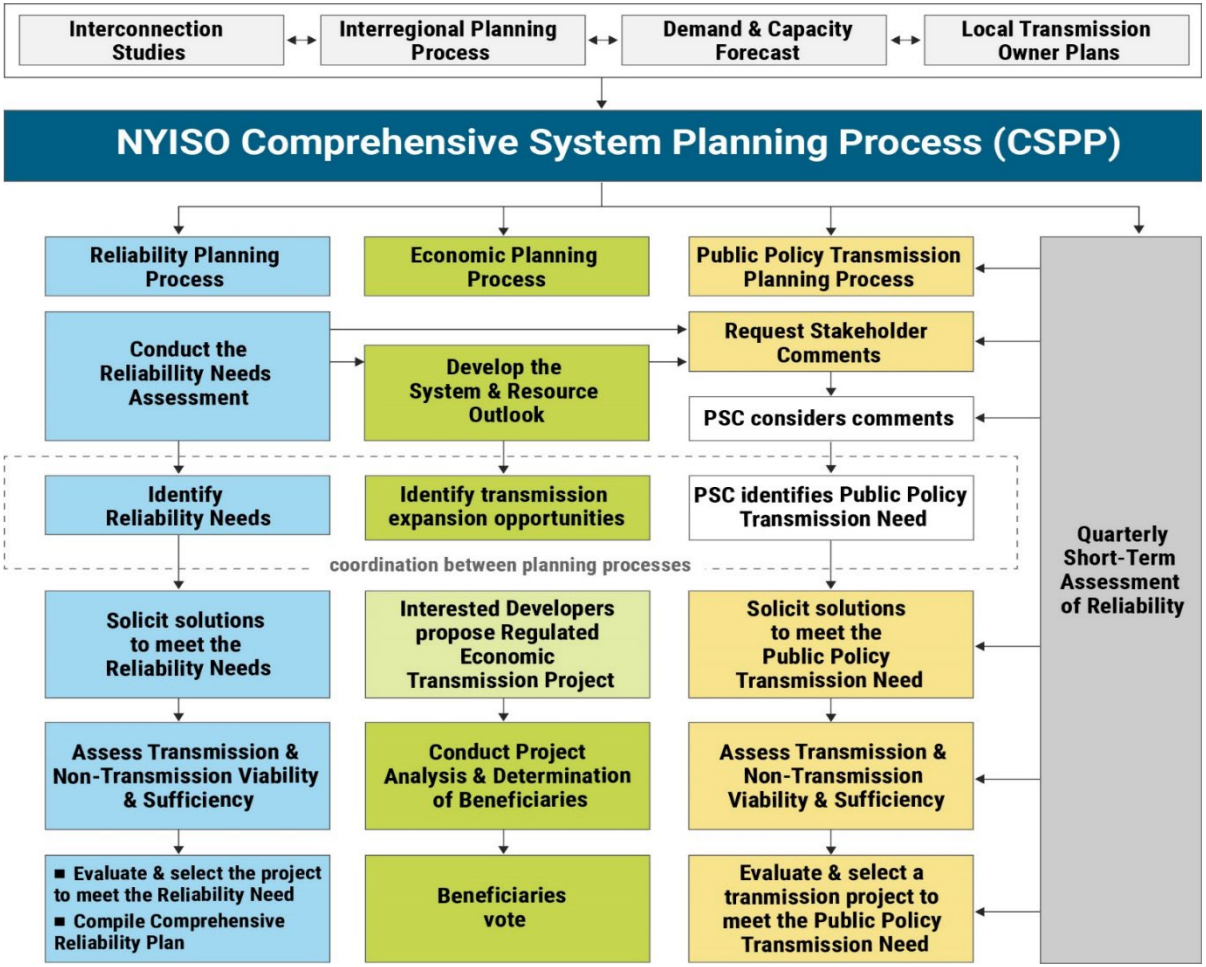
Interregional Planning Stakeholder Advisory Committee (IPSAC) Meeting

May 3, 2024



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Reliability Planning Process (RPP)

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Reliability Planning Process

- **Two-year process starting in even years**
- **Reliability Needs Assessment (RNA)**
  - Evaluates the adequacy and security of the Bulk Power Transmission Facilities (BPTF) over a seven-year Study Period (years four through ten of the next ten years), and identifies Reliability Needs
  - Reliability Needs are defined as violations of Reliability Criteria (*i.e.,* NERC, NPCC and NYSRC) on the BPTFs
  - Identifies risks to the plan, and includes scenarios simulated for informing the risks
- **Comprehensive Reliability Plan (CRP)**
  - Develops a plan to satisfy the Reliability Needs identified in RNA, if any
  - Identifies risks to the plan, and could include additional scenarios simulated for informing the risks

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2023-2032 Comprehensive Reliability Plan

- **While there was no Reliability Need identified in the 2022 RNA, the 2023-2032 CRP identified and evaluated several key risk factors to reliability:**
  - Generator availability and performance
  - Delays in major transmission projects
  - Proposed large loads
  - Winter peaking and gas shortage risks
  - Emergency Assistance from neighboring regions
  - Extreme weather
- **Final CRP report can be found here**

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2024 Reliability Needs Assessment

- 2024 RNA will be based on the information from the Gold Book 2024, the 2024 FERC 715 filing (power flow cases and auxiliary files), historical data, market participant data and inclusion rules application
- Reliability evaluations on the 2024 RNA Base Case: transmission security and resource adequacy
- Major study assumptions and potential study scenarios have been discussed with stakeholders [link]
- Anticipated completion in Q4 2024

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Generator Status Update

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Generator Status Update

Generator Status Updates from March 15, 2023 through April 1, 2024

Generating Unit	*Owner*	*PTID*	*Interconnecting TO*	*Zone*	*Current Generator Status*	*Date of Generator Status Change, if applicable*	*Initial Testing Date, if applicable*	*Generator Deactivation Assessment/Short-Term Assessment of Reliability Start Date, if applicable*	*Generator Deactivation Assessment/Short-Term Assessment of Reliability Completion Date, if applicable*	*PSC Retirement/Mothball Notice Date, if applicable*	*Proposed Retirement/ Mothball Date, if applicable*	*Rescinded Notice Date, if applicable*	*Notes*
NUMBER_THREE_WT_PWR	Invenergy Energy	323818	National Grid	E	In Service	03/22/2023	03/22/2023						
Ravenswood GT 10	Helix Ravenswood, LLC	24258	Con Edison	J	Retired	05/01/2023		07/15/2022	10/13/2022		05/01/2023		
Astoria GT 2-1	NRG Power Marketing LLC	24094	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 2-2	NRG Power Marketing LLC	24095	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 2-3	NRG Power Marketing LLC	24096	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 2-4	NRG Power Marketing LLC	24097	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 3-1	NRG Power Marketing LLC	24098	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 3-2	NRG Power Marketing LLC	24099	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 3-3	NRG Power Marketing LLC	24100	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 3-4	NRG Power Marketing LLC	24101	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 4-1	NRG Power Marketing LLC	24102	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 4-2	NRG Power Marketing LLC	24103	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 4-3	NRG Power Marketing LLC	24104	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
Astoria GT 4-4	NRG Power Marketing LLC	24105	Con Edison	J	Retired	05/01/2023		04/15/2022	07/14/2022	02/22/2022	05/01/2023		
KCE_NY_6_ESR	Galt Power Inc.	323823	National Grid	A	In Service	04/19/2023	04/19/2023						
Astoria GT 1	Astoria Generating Company, L.P.	23523	Con Edison	J	In Service			10/15/2022	01/13/2023		05/01/2023		The unit did not deactivate as it performed testing to comply with the DEC peaker rule through 2025.

Status of generators is reviewed and updated on a monthly basis:
https://www.nyiso.com/ny-power-system-information-outlook?folderPath=public/planning/NY-Power-System-Information-and-Outlook/Generator-Status-Updates

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Generator Status Update

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DARBY___SOLAR	Galt Power Inc.	323810	National Grid	F	In Service	05/23/2023							
Northport GT	Long Island Power Authority	23718	LIPA	K	In Service	05/24/2023							Reclassified as Black Start only unit/ units no longer subject to NYISO dispatch
Port Jefferson GT 01	Long Island Power Authority	23713	LIPA	K	In Service	05/24/2023							Reclassified as Black Start only unit/ units no longer subject to NYISO dispatch
74th St. GT 1	Consolidated Edison Co. of New York, Inc.	24260	Con Edison	J	In Service	05/01/2023		04/15/2022	07/14/2022		05/01/2023		Unit no longer subject to NYISO dispatch / used for local reliability only
74th St. GT 2	Consolidated Edison Co. of New York, Inc.	24261	Con Edison	J	In Service	05/01/2023		04/15/2022	07/14/2022		05/01/2023		Unit no longer subject to NYISO dispatch / used for local reliability only
WESTERN_NY_WIND	Western New York Wind Corp.	24143	National Grid	B	Retired	10/15/2023		07/15/2023	10/13/2023	06/05/2023	05/01/2023		The earliest possible retirement of the Generator is October 14, 2023.
Ravenswood GT 1	Helix Ravenswood, LLC	23729	Con Edison	J	Retired	10/14/2023		07/15/2023	10/13/2023	03/31/2022	05/01/2023		The earliest possible retirement of the Generator is October 14, 2023.
Ravenswood GT 11	Helix Ravenswood, LLC	24259	Con Edison	J	Retired	10/14/2023		07/15/2023	10/13/2023	03/31/2022	05/01/2023		The earliest possible retirement of the Generator is October 14, 2023.
POMONA___ESR	Orange & Rockland Utilities, Inc.	323819	Orange & Rockland	G	In Service	08/08/2023							
BLUESTONE__WT_PWR	Bluestone Wind	323821	NYSEG	E	In Service	09/05/2023							
BALL_HILL_WT_PWR	Northland Power	323825	National Grid	A	In Service	10/10/2023							
SOUTH CAIRO__GT	Central Hudson Gas & Electric Corp.	23612	Central Hudson	G	Retired	03/31/2024		10/15/2023	01/12/2024	06/21/2023	03/31/2024		
COXSACKIE__GT	Central Hudson Gas & Electric Corp.	23611	Central Hudson	G	In Service			01/15/2024		06/21/2023	12/31/2024		
STILLWATER___SOLAR	Galt Power Inc.	323814	National Grid	F	In Service	11/10/2023	11/10/2023						
SOUTH_FORK_WT_PWR	North East Offshore, LLC	323839	LIPA	K	In Service	11/30/2023	11/30/2023						
ALBANY_1_SOLAR	Hecate Energy Albany 1 LLC	323833	National Grid	F	In Service	12/21/2023	12/21/2023						
ALBANY_2_SOLAR	Hecate Energy Albany 2 LLC	323834	National Grid	F	In Service	12/21/2023	12/21/2023						
WALDEN__HYDRO	Triton Power Company	24148	NYSEG	G	Load Modifier	12/27/2023							
CHAT_HIGH_FALL_HYD	Triton Power Company	323578	NYSEG	D	Load Modifier	12/27/2023							
PATTRSNVILLE___SOLAR	Galt Power Inc.	323815	National Grid	F	In Service	02/14/2024	02/14/2024						
ARTHUR_KILL_COGEN	Cubit Power One Inc.	323718	Con Edison	J	ICAP Ineligible Forced Outage	03/02/2024							
EAST_PULASKI___ESR	National Grid	323781	National Grid	C	In Service	03/11/2024							

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https://www.nyiso.com/ny-power-system-information-outlook?folderPath=public/planning/NY-Power-System-Information-and-Outlook/Generator-Status-Updates

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Local Transmission Owner Plans (LTP)

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Local Transmission Owner Plans (LTP)

- The NYISO's Comprehensive System Planning Process (CSPP) begins with the Local Transmission Owner Planning Process (LTPP). The LTPP allows interested parties to examine the transmission system plans of each of the New York Transmission Owners individually.
- Local Transmission Owner Planning Process (LTPP) link:
  - https://www.nyiso.com/documents/20142/3632262/Local-Transmission-Owner-Planning-Process-LTPP.pdf
- 2023 Load and Capacity Data Report (Gold Book) containing BPTF LTPs and firm non-BPTF LTPs (Section VII)
  - 2023 Gold Book

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Short-Term Reliability Process (STRP)

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Short-Term Reliability Process (STRP)

- The STRP uses quarterly Short-Term Assessments of Reliability (STAR) studies to assess the reliability impacts of generator deactivations on both BPTF and non-BPTF transmission facilities, in coordination with the responsible transmission owner(s)
- The STAR is also used by the NYISO, in coordination with the responsible transmission owner(s), to assess the reliability impacts of other system changes on the BPTF
- Each STAR assesses a five-year period with a particular focus on needs that are expected to arise in the first three years of the study period
  - Needs that arise in years four or five may be addressed in the STRP or RPP
- Short-Term Reliability Process webpage:
  https://www.nyiso.com/short-term-reliability-process

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Short-Term Reliability Process (STRP)

- **2023 Quarter 2 STAR**
  - The assessment found a reliability need beginning in summer 2025 within New York City. The New York City zone is deficient by as much as 446 MW for a duration of nine hours on the peak day during expected weather conditions
  - The report is available at [link]
- **NYISO solicited for solutions to the reliability Need in August 2023**
  - No viable and sufficient solutions were received.
  - NYISO determined it is necessary to extend the operation of the Narrows and Gowanus “peaker” units. These units were previously scheduled to be deactivated by 2025 according to the Department or Environmental Conservation’s “Peaker Rule” limiting NOx and SOx emissions
  - Short Term Reliability Process Report is available at [link]

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Short-Term Reliability Process (STRP)

- **2024 Quarter 1 STAR**
  - The assessment did not identify any Short-Term Reliability Needs, other than the New York City reliability need previously identified in the 2023 Quarter 2 STAR
  - The report is available at [link]
- **2024 Quarter 2 STAR**
  - Study period April 15, 2024 - April 15, 2029
  - Study Assumptions can be found at [link]
  - Anticipated completion by July 14, 2024

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Economic Planning Process (EPP)

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Economic Planning Process

- **System & Resource Outlook ("The Outlook")**
  - Performed in alternate years to the RNA
  - 20-year study of system and congestion
  - Identifies, ranks, and groups congested elements
  - Assesses the potential benefits of addressing the identified congestion
  - Provides information to developers and marketplace regarding future challenges in the New York power system
- **Economic Transmission Project Evaluation (ETPE)**
  - Evaluation by the ISO of a Regulated Economic Transmission Project (RETP)
    - Transmission projects seeking regulated cost recovery under NYISO Tariff
    - Eligibility threshold: Cost over $25M, benefit/cost ratio over 1.0, load payment savings over cost, 80% beneficiary vote
- **Requested Economic Planning Study (REPS)**
  - Study performed solely for informational purposes by the ISO at the request of a stakeholder or other interested party at their expense
    - Assumptions and scenarios customizable
    - Confidential except for posting of limited information about the study request

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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
- Provide information for New York Coordinated Grid Planning Process (CGPP)

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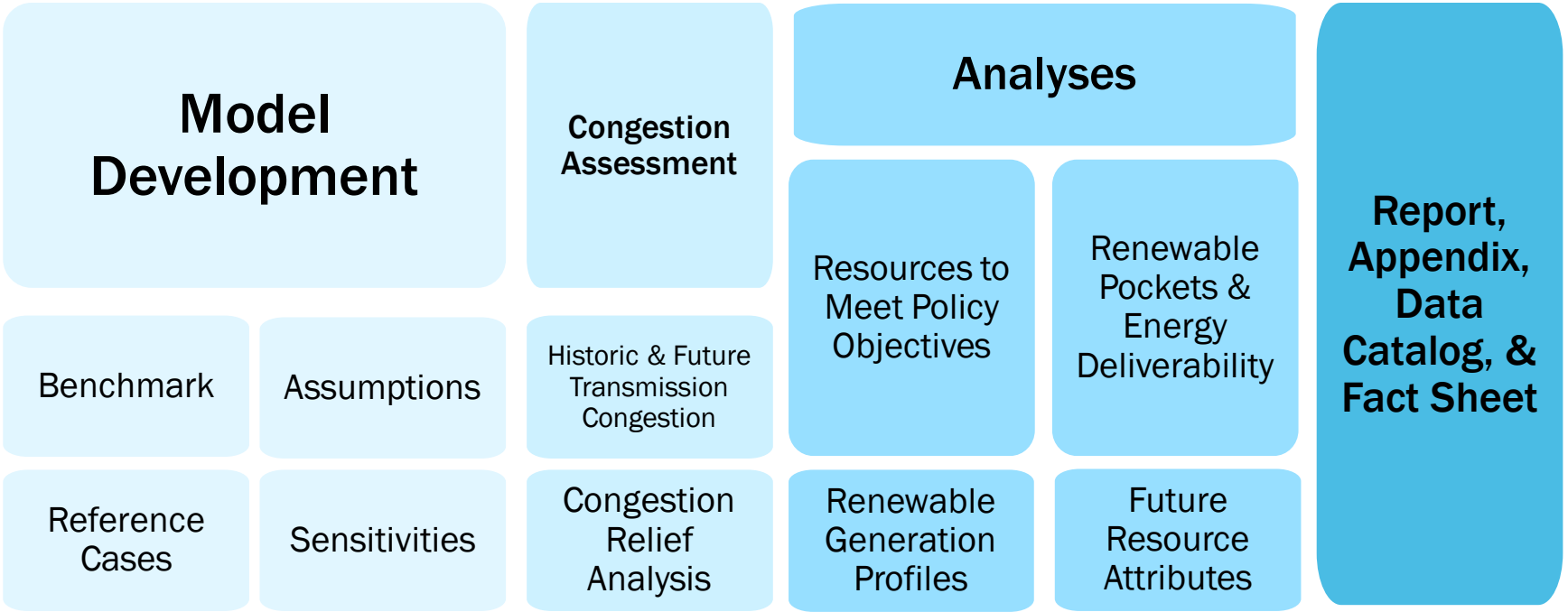
System & Resource Outlook Scope



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2021-2040 System & Resource Outlook

- **Key Findings:**
  - The pace of renewable project development is unprecedented and requires an increase in the pace of transmission development.
  - Significant new resource development (at least 95 GW by 2040) will be required to achieve CLCPA energy targets. Coordination of project additions and retirements is essential to maintaining reliability and achieving policy.
  - To achieve an emission-free grid, dispatchable emission-free resources (DEFRs) must be developed and deployed throughout New York.
  - As the energy policies in neighboring regions evolve, New York's imports and exports of energy could vary significantly due to the resulting changes in neighboring grids.
  - Transmission limitations prevent full delivery of renewable energy. Transmission expansion is critical to facilitating efficient CLCPA energy target achievement, particularly in the Finger Lakes, Southern Tier, Watertown, and Long Island pockets.
- **Study summary can be found here and the full report can be found here**

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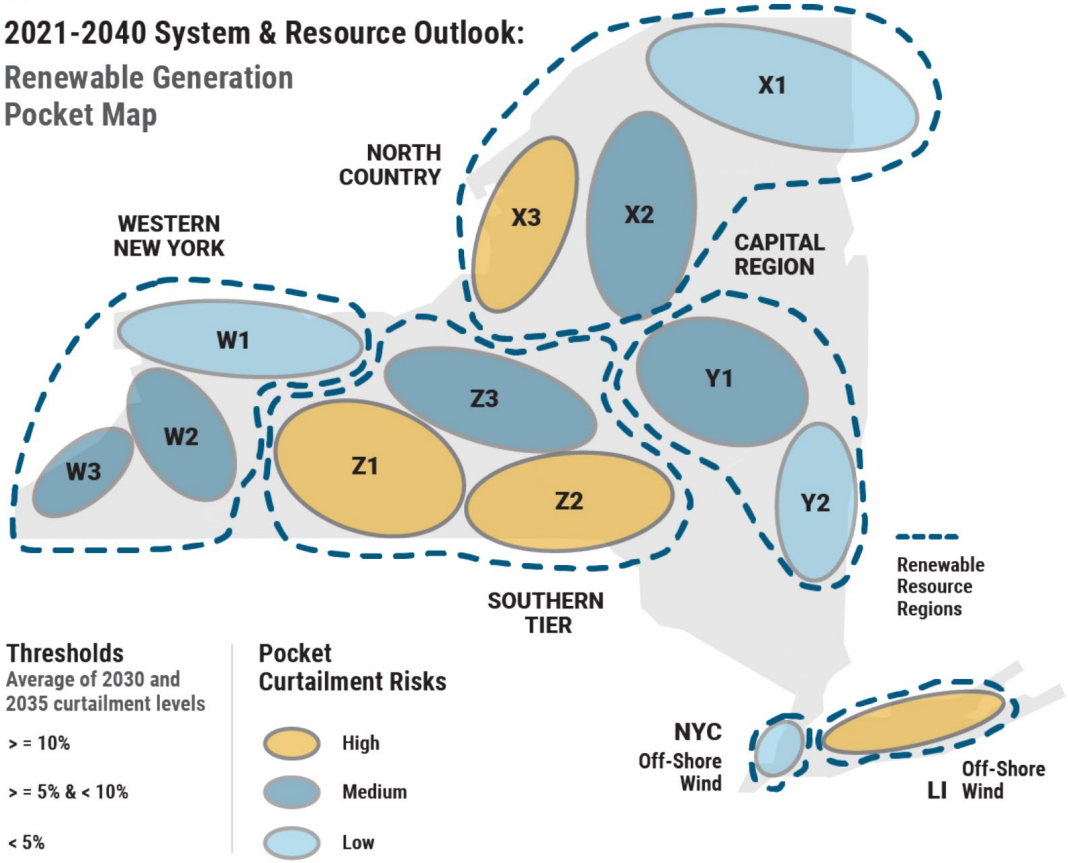
2021-2040 System & Resource Outlook:

Renewable Generation Pocket Map



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2023-2042 System & Resource Outlook

- **Study began in 2023 with models & assumptions locked in Q4**
  - Capacity Expansion Model Assumptions here
  - Production Cost Model Assumptions here
- **Key assumptions:**
  - The 2023-2032 System & Resource Outlook will evaluate multiple reference cases with varying inclusion rules for the transmission and generation mixes to assess different scenarios for the 20-year study horizon
  - Multiple peak load and energy forecasts evaluated
  - Inclusion of transmission upgrades beyond existing system (NYPA Northern New York Priority Transmission Project, Champlain Hudson Power Express, Clean Path New York, Joint Utilities Phase 1 & Phase 2 projects, Long Island OSW Public Policy Project)
  - Generation fleet for scenario analyses, including optimized generation expansion of renewables, battery storage, and dispatchable emission free resources in scenario analyses for potential pathways to achieve energy policy targets
  - NYISO, ISO-NE, IESO, and PJM models included based on collaboration between ISOs
- **The report for the 2023-2042 System & Resource Outlook will be published in 2024**

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Public Policy Transmission Planning Process (PPTPP)

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Public Policy Transmission Planning Process (PPTPP)

- **Two-year process performed in parallel with RNA/CRP**
- **Phase I: Identify Needs and Assess Solutions**
  - NYISO solicits transmission needs driven by Public Policy Requirements
    - 2022 needs posted at https://www.nyiso.com/cspp -> Public Policy Documents -> Proposed Needs
  - PSC identifies transmission needs and defines additional evaluation criteria
  - NYISO holds Technical Conference and solicits solutions (transmission, generation, or EE/DR)
  - NYISO performs Viability and Sufficiency Assessment (VSA)
- **Phase II: Transmission Evaluation and Selection**
  - NYISO staff evaluates viable and sufficient transmission solutions and recommends the more efficient or cost-effective solution
  - Stakeholder review and advisory votes at BIC and MC
  - NYISO Board may select a transmission solution for purposes of cost allocation and recovery under the NYISO Tariff

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Long Island Offshore Wind Export Public Policy Need

- **"The CLCPA constitutes a Public Policy Requirement driving the need for:**
  - Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and
  - Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.
  - Ensure no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions"

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Long Island Offshore Wind Export Update

- 19 projects were proposed by four Developers
- NYISO board selected Alternate Solution 5 Project to meet the Need. The project will be developed by the New York Power Authority and New York Transco – a partnership called Propel NY
- Full report and appendices can be found on the NYISO website

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2022-2023 Public Policy Process Cycle

- On August 31, 2022, the NYISO requested potential transmission needs driven by Public Policy Requirements from interested parties
- On November 7, 2022, the NYISO filed the proposed transmission needs with the PSC from 17 entities, as well as applicable proposed needs with LIPA
- On June 22, 2023, the PSC issued an order declaring a Public Policy Transmission Need ("PSC Order"):
  - https://www.nyiso.com/documents/20142/1406395/PSC-Order-NYC-PPTN.pdf
- NYISO Solicitation : NYC PPTN Solicitation

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PSC Order Highlights

- **"The CLCPA … constitutes a Public Policy Requirement driving the need for additional transmission facilities to deliver the output of offshore wind generating resources to New York City interconnection points"**
- **The NYC PPTN calls for proposed solutions that must accommodate the full output of at least 4,770 MW of incremental offshore wind**
  - The Order notes that scenarios representing up to 8,000 MW of incremental offshore wind should be used by NYISO to evaluate performance of proposes solutions for expandability, renewable energy deliverability, and other metrics in evaluation phase
  - The Order also notes that offshore wind injections are incremental to the 2,046 MW of offshore wind generation interconnecting into Zone J with existing OREC contracts resulting from NYSERDA's first and second offshore wind solicitations
- **"Appendix A: Technical Requirements" of the PSC Order contains technical details that will be used in defining the viability & sufficiency criteria and evaluation criteria**

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PSC Order Highlights, cnt.

- **Solutions to the transmission need must, among other things:**
  - Consist of a complete end-to-end proposal comprised of both offshore and onshore components to enable power injection into Zone J
  - Contain a plan to complete all permitting and construction activities necessary to achieve an in-service date no later than January 1, 2033
  - Contain a plan for how offshore wind generation would interconnect to the end-to-end transmission proposal at the offshore interconnection points

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Complete “End-to-End” Solutions

- **Complete end-to-end solutions must be comprised of both offshore and onshore components to enable power injection into Zone J and should include the following components:**
  - offshore interconnection point(s),
  - offshore transmission (i.e., submarine cables),
  - sites for cable landing points,
  - onshore transmission path(s) (i.e., terrestrial cables) from cable landing points to points of interconnection in Zone J, including sites for converter stations, and
  - necessary improvements to and/or expansion of the existing onshore transmission system.

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Highlights of PSC Evaluation Criteria

- **The PSC Order prescribes certain evaluation criteria for the NYISO's evaluation under Section 31.4.8.1.9 of the OATT:**
  - Minimization, to the extent possible, of the use of AC submarine cables in constrained areas identified in NYSERDA's 2022 offshore wind solicitation
  - Consideration of potential interference and/or synergy with the Long Island Offshore Wind Export Public Policy Transmission Need ("Long Island PPTN")
  - Demonstration that proposed solution will not preclude or foreclose the ability to expand and/or integrate into a future offshore transmission network
  - Optimization of intended corridors to achieve the intended level of offshore wind integration and account for the findings of NYSERDA's Cable Corridor Assessment
- **"Appendix B: Supplemental Criteria" contains additional criteria that leverages NYSERDA Cable Corridor Assessment for routing considerations and principles**

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Involvement of State Agencies and Con Edison

- **The Order directs DPS staff to:**
  - Work with the state, federal, and local authorities with jurisdiction over aspects of the siting and construction of transmission in New York City to assist proposers and the NYISO on questions of permitting risk
  - To create opportunities to inform stakeholders of progress and gather stakeholder input
- **The Order requires Con Edison to undertake a process to make information available to potential Developers concerning points of interconnection on its system**

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Interregional Coordination

- **Through the NYISO's Transmission Interconnection Procedures, the NYISO also coordinates with neighboring regions to identify the impact, if any, of the Public Policy Transmission Projects on the neighboring regions**
  - Facility Studies have been completed for the selected Western NY and AC Transmission projects, including identification of the upgrades to address New York-New England transfer degradation caused by Segment B project
  - Facility Study will be commenced for the Alternate Solution 5 Project selected by NYISO Board to meet the LI PPTN

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Stakeholder Material

- The NYISO Comprehensive System Planning Process is regularly discussed at the Electric System Planning Working Group (ESPWG) and Transmission Planning Advisory Subcommittee (TPAS).
  - https://www.nyiso.com/espwg
  - https://www.nyiso.com/tpas
- Study documentation is available at:
  - https://www.nyiso.com/cspp

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Questions?

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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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