2025 Northeastern Coordinated System Plan

ISO New England, New York ISO, and PJM

Final

June 24, 2026

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Preface

The New York Independent System Operator (NYISO), the Independent System Operator (ISO) for the state of New York; PJM Interconnection (PJM), the Regional Transmission Organization (RTO) for all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia; and ISO New England (ISO-NE), the RTO for the six New England states (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont), coordinate planning under the *Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol* and other joint agreements. The protocol includes the following requirements:[1]

- Exchanging data and information
- Coordinating interconnection requests and transmission requests with cross-border impacts
- Developing a Northeastern Coordinated System Plan (NCSP)
- Performing planning studies through an open stakeholder process
- Allocating the costs associated with interregional projects having a cross-border impact consistent with each party's tariff and applicable federal regulatory policy

The ISO/RTOs implement the protocol consistent with interregional planning requirements of Federal Energy Regulatory Commission (FERC) Order No. 1000, including the following:

- The sharing of information about the respective needs of each region and potential solutions to these needs
- The identification and joint evaluation of interregional transmission facilities that may be more efficient or cost-effective solutions to these regional needs

This report summarizes the 2024 and 2025 interregional planning activities under the responsibilities of the Joint ISO/RTO Planning Committee (JIPC). The report also references other interregional planning activities, including those associated with the work of the North American Electric Reliability Corporation (NERC).

[1] PJM, NYISO, and ISO-NE, *Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol* (Amended Planning Protocol) (July 13, 2015), https://www.iso-ne.com/static-assets/documents/committees/comm_wkgrps/othr/ipsac/rto_plan_prot/planning_protocol.pdf. Hydro-Québec TransÉnergie, the Independent Electric System Operator of Ontario (IESO), and the Transmission and System Operator Division of New Brunswick Power participate in the protocol on a limited basis to share data and information.

Executive Summary

Through their interregional processes, the NYISO, ISO-NE, and PJM must identify and resolve planning issues with potential interregional impacts, consistent with NERC reliability requirements and other applicable state, regional, and local reliability criteria.[2] Interconnections with neighboring systems provide opportunities for the exchange of capacity and energy, and tie lines facilitate access to a diversity of resources and potential economic opportunities for energy exchange.[3]

PJM, ISO-NE, and NYISO participate in numerous national and interregional planning activities with NERC and its regional entities—the Northeast Power Coordinating Council (NPCC), the SERC Reliability Corporation (SERC) and Reliability*First* Corporation (RFC)—and other balancing authority areas in the United States and Canada.[4] The three entities proactively coordinate planning activities, such as interconnection and transmission studies, and work closely with each other as needed to conduct interregional reliability and production cost studies. The three Independent System Operators/Regional Transmission Organizations (ISOs/RTOs) also coordinate system planning studies with neighboring systems across the Eastern Interconnection, and they participate in the Eastern Interconnection Planning Collaborative (EIPC).[5] The aim of these coordinated planning efforts is to enhance the widespread reliability and efficiency of the interregional electric power system.

PJM, ISO-NE, and NYISO follow the *Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol* (Amended Planning Protocol) to enhance the coordination of their planning activities and address interregional planning issues.[6] To implement the original protocol (effective in 2004), the group formed the Joint ISO/RTO Planning Committee (JIPC) and the Interregional Planning Stakeholder Advisory Committee (IPSAC) open stakeholder group.[7] Through the open stakeholder process, the JIPC addresses interregional transmission planning issues, including

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[2] More information about NERC is available at http://www.nerc.com/. See also the *Northeast Power Coordinating Council (NPCC) Regional Reliability Reference Directory #1—Design and Operation of the Bulk Power System* (July 2, 2024), https://www.npcc.org/standards/regional-criteria; *ISO-NE Planning Procedure 3 - Reliability Standards for the New England Area Pool Transmission Facilities* (December 16, 2024), https://www.iso-ne.com/static-assets/documents/2017/10/pp3_r8.pdf; and *New York State Reliability Council Reliability Rules and Compliance Manual* (June 14, 2024), https://www.nysrc.org/wp-content/uploads/2024/07/RRC-Manual-V47-final-7-2-24.pdf.

[3] NYISO and PJM, and NYISO and ISO-NE, have coordinated transaction scheduling that features scheduling every 15 minutes, external transaction bidding, coordinated economic clearing of transactions, and the elimination of fees and charges for interface bids. See NYISO webpage, "Energy Market & Operational Data," at https://www.nyiso.com/energy-market-operational-data.

[4] NERC defines a *balancing authority area* as the generation, transmission, and loads within metered boundaries for which a responsible entity (defined by NERC to be a balancing authority) integrates resource plans for that area, maintains the area's load-resource balance, and supports the area's interconnection frequency in real time.

[5] Information about EIPC is available at http://www.eipconline.com.

[6] PJM, NYISO, and ISO-NE, *Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol* (Amended Planning Protocol) (July 13, 2015), https://www.iso-ne.com/static-assets/documents/committees/comm_wkgrps/othr/ipsac/rto_plan_prot/planning_protocol.pdf. Hydro-Québec TransÉnergie, the Independent Electric System Operator of Ontario (IESO), and the Transmission and System Operator Division of New Brunswick Power participate in the protocol on a limited basis to share data and information.

[7] All IPSAC presentations, studies, and other supporting material are available at each ISO/RTO's website: https://www.pjm.com/committees-and-groups/stakeholder-meetings/ipsac-ny-ne.aspx; https://www.nyiso.com/ipsac; and https://www.iso-ne.com/ipsac. For access to the protected NYISO IPSAC site, contact the NYISO Customer Service Department at (518) 356-6060 or https://www.nyiso.com/support. To request access to ISO-NE critical energy infrastructure information (CEII) materials, contact ISO-NE Participant Support and Solutions at (413) 540-4220 or AskISO@iso-ne.com. To request access to PJM CEII material, visit http://www.pjm.com/library/request-access.aspx.

system needs and proposed system improvements that reflect resource diversity, environmental compliance obligations, and resource retirements, in addition to the integration of distributed and variable energy resources.

This *2025 Northeastern Coordinated System Plan* (NCSP25) documents planning activities during 2024 and 2025 under the provisions of the amended protocol and other documents FERC accepted in response to the interregional requirements of its Order No. 1000.[8] NCSP25 builds on the interregional planning activities summarized in the *2023 Northeastern Coordinated System Plan* (NCSP23), emphasizing interregional planning activities under the Amended Planning Protocol and summarizing several of the planning issues the three ISOs/RTOs are addressing.[9] NCSP25 demonstrates PJM, ISO-NE, and NYISO successfully implemented the Amended Planning Protocol, through the following activities:

- Continued coordination and exchange of data
- Provision of regional and interregional stakeholder opportunities for reviewing and recommending regional and interregional transmission planning needs and solutions
- Review of transmission needs and solutions proposed by neighboring systems and coordination of necessary planning studies across interregional boundaries
- Coordination of the interconnection queue, long-term firm transmission service, and transmission projects that potentially affect or could affect interregional system performance, and
- Coordination of other internal planning studies across ISO/RTO boundaries.

The NCSP25 summarizes needs and plans for meeting these needs discussed with stakeholders in 2024 and 2025. The key findings and conclusions of NCSP25, as discussed in Section 6, are as follows:

- Regional and interregional stakeholders provide the ISO/RTOs with key input for system planning activities through an open process.
- The ISO/RTO regional and interregional planning activities conducted during 2024 and 2025 reviewed regional needs and solutions and did not identify any need for new interregional transmission projects for cost allocation that would be more efficient or cost effective in meeting the transmission system needs of multiple regions than proposed regional system improvements included in the ISOs/RTOs' respective regional plans.
- Queue interconnection studies remain well coordinated across ISO/RTO boundaries, including studies of additional generating and transmission facilities that could affect interregional system performance.

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[8] See (1) the Amended Planning Protocol; (2) ISO-NE, NYISO, and PJM, *Filing of Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol on behalf of ISO New England Inc., New York Independent System Operator, Inc., and PJM Interconnection, L.L.C.*, Docket No. ER13-1957-000 (July 10, 2013), https://www.iso-ne.com/static-assets/documents/regulatory/ferc/filings/2013/jul/er13_1957_000_7_10_2013_protocol.pdf; and (3) FERC, *Order 1000 Compliance Filing*, Docket Nos. ER13-1957-001, ER13-1942-001, ER13-1946-001, ER13-1960-001, ER13-1947-001, and ER15-2200-000, final order (November 19, 2015), http://www.iso-ne.com/static-assets/documents/2015/11/er13-1957-001_er13-1960-001_ltr_order_accept_regional_transmission_require_cost_allocation_order_1000.pdf. NYISO, PJM, and ISO-NE also made separate filings of tariff and agreement changes to reflect compliance with interregional planning requirements of Order No. 1000.

[9] See 2023 Northeastern Coordinated System Plan https://www.iso-ne.com/static-assets/documents/100011/2023_ncsp_pjm_nyiso_iso_ne_final.pdf

- The ISOs/RTOs demonstrate compliance with all planning criteria and regulatory requirements.

While each Northeastern Coordinated System Plan captures information from a snapshot in time, the planning process is continuous and flexible. The ISO/RTOs routinely update the results of planning activities as needed, accounting for the status of ongoing projects, studies, and new initiatives. The JIPC continues working toward meeting all challenges for planning and operating the system in accordance with all requirements in the ISOs/RTOs' respective Open Access Transmission Tariffs (OATTs), all planning criteria, and planning procedures.

1. Interregional Transmission Planning and Cost-Allocation Requirements

The Federal Energy Regulatory Commission (FERC) Order No. 1000, issued on July 21, 2011, includes planning requirements, as follows, for all jurisdictional transmission providers, including Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs):[10]

- Establish interregional planning procedures and cost allocation between neighboring regions
- Remove tariff provisions that may provide a federal right of first refusal (ROFR) for incumbent Transmission Owners
- Provide an open and transparent process for soliciting and selecting more efficient or cost-effective transmission projects for cost allocation and inclusion in the regional plan, and
- Incorporate public policy considerations into the planning process.

Order No. 1000 builds on FERC Order No. 890 requirements, which expanded regional planning to include economic planning and cost allocation.[11] While in many ways already meeting or exceeding the interregional planning requirements formalized by FERC in Order No. 1000, NYISO, ISO-NE, and PJM worked together, with their stakeholders, and with members of the Interregional Planning Stakeholder Advisory Committee (IPSAC) (see Section 3), during 2012, 2013, and again in 2015 to revise the Northeastern ISO/RTO Planning Coordination Protocol for meeting the requirements of Order No. 1000. The *Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol* (Amended Planning Protocol), submitted to FERC in July 2015, provides for a multilateral planning process among the three regions. The three regions further submitted accompanying tariff provisions for cost allocation.[12] In 2015, FERC accepted the Amended Planning Protocol and cost-allocation methodology as compliant with the interregional coordination requirements of Order No. 1000.[13]

As summarized in NCSP25, many of the interregional activities during 2024 and 2025 focused on satisfying these compliance requirements. A high-level overview of the interregional planning requirements of Order No. 1000 follows.

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[10] FERC, *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, 18 CFR Part 35, 136 FERC ¶ 61,051 (July 21, 2011) (Order No. 1000). Also, see additional Order No. 1000 filings and materials.

[11] FERC, *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 18 CFR Parts 35 and 37, FERC Stats. and Regs. ¶ 31,241 (February 16, 2007).

[12] PJM, NYISO, and ISO-NE, *Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol* (Amended Planning Protocol) (July 13, 2015), https://www.nyiso.com/documents/20142/1406358/Northeast_Planning_Protocol_FINAL_SIGNED_VERSION.pdf.

[13] FERC, *Letter Order Accepting Order No. 1000 Interregional Transmission Planning and Cost-Allocation Requirements,* Docket Nos. ER13-1957-001, ER13-1942-001, ER13-1946-001, ER13-1960-001, ER13-1947-001, and ER15-2200-000, (November 19, 2015), https://www.iso-ne.com/static-assets/documents/2015/11/er13-1957-001_er13-1960-001_ltr_order_accept_regional_transmission_require_cost_allocation_order_1000.pdf. See also FERC's *Order on Compliance Filings*, 151 FERC ¶ 61,133 (May 14, 2015). https://www.iso-ne.com/static-assets/documents/2015/05/er13-1957-000_et_al_5-14-15_order_on_ordr__1000_compliance_filing.pdf.

1.1 Interregional Coordination Requirements

Order No. 1000 required each pair of neighboring regions to include interregional coordination procedures in their respective tariffs. Specifically, the Order required all transmission providers to develop further procedures with neighboring regions to provide for the following:

- The sharing of information regarding the respective needs of each region and potential solutions to these needs
- The identification and joint evaluation of interregional transmission facilities that may be more efficient or cost-effective solutions to these regional needs

Additionally, the Order requires a developer of an interregional transmission project to first propose its project through the regional transmission planning processes of each of the neighboring regions where the facility is proposed to be located. The interregional evaluation must be conducted in the same general timeframe as each regional evaluation.

FERC emphasized the central importance of the regional planning processes, noting that interregional transmission coordination should complement local and regional transmission planning processes and not substitute for these processes. Periodic review of each ISO/RTO's regional plan identifies the potential need for interregional transmission projects. Consistent with applicable FERC regulations, the Amended Planning Protocol states that interregional planning is an integral part of each regional process.

In accordance with the Amended Planning Protocol, the Joint ISO/RTO Planning Committee (JIPC) discussed interregional coordination procedures at IPSAC meetings (see Section 3).[14]

1.2 Cost-Allocation Requirements

Another Order No. 1000 requirement is for each pair of neighboring transmission providers to include interregional cost-allocation procedures in their tariffs. For both regional and interregional cost allocation, Order No. 1000 adopted a principles-based, rather than a "one-size-fits-all," approach and recognized that regional differences may warrant different methodologies. FERC determined that the interregional cost-allocation method to which two regions agree may differ from their respective regional cost-allocation methodologies. In addition, the method to allocate a region's share of the costs for an interregional facility may differ from the method the respective regions use to allocate the costs of a regional facility. The Order requires all transmission providers to demonstrate compliance with six cost-allocation principles—which contain variants for both regional and interregional cost allocation.[15] Both regional planning processes must first select an interregional transmission project for it to receive cost allocation under the interregional cost-allocation process.

The default cost-allocation methodology for interregional projects filed by the ISO/RTOs and accepted by FERC is based on the avoided costs of the respective regional projects the interregional solution would replace.[16]

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[14] The annual coordination process was referenced at IPSAC on December 10, 2018. *See* https://www.iso-ne.com/static-assets/documents/2019/01/a02_2018_12_10_ipsac_annual_coordination_process.pptx.

[15] See, generally, FERC Order No. 1000 at 612–685, http://www.ferc.gov/whats-new/comm-meet/2011/072111/E-6.pdf.

[16] Refer to the pertinent portions of the July 10, 2013, filings in FERC Docket Nos. ER13-1926 (PJM Transmission Owners); ER13-1942 (NYISO Transmission Owners); and ER13-1960 (ISO-NE Transmission Owners).

2. Implementation of the ISO/RTO Planning Processes

Under FERC Order No. 1000, regional planning is the foundation for interregional planning, which includes requests for interconnection to the transmission system and for transmission service that may have cross-border impacts. Each ISO/RTO has a regional planning process with timelines and an open stakeholder process for informing regional stakeholders of regional system needs (whether driven by reliability, economic, or public policy requirements), and opportunities for satisfying these needs. While each ISO/RTO is responsible for planning within its footprint, all must comply with NERC Bulk Electric System (BES) standards.[17] In addition, NYISO and ISO-NE must comply with Northeast Power Coordinating Council (NPCC) requirements for the Bulk Power System (BPS).[18]

The ISO/RTOs' system plans identify system needs and plans for meeting such needs in accordance with their respective Open Access Transmission Tariffs (OATTs). PJM, NYISO, and ISO-NE coordinate these short- and long-term system needs and plan with neighboring systems to identify opportunities for interregional system improvements. Projects in the respective ISO/RTO interconnection queues may also have potential interregional effects on neighboring systems, which require coordinating studies across ISO/RTO borders. Stakeholders are encouraged to engage in the regional stakeholder processes, as well as the IPSAC, to provide input to the ISO/RTOs regarding potential interregional planning issues.

This section summarizes the respective ISO/RTOs' system planning processes, including the timing of their planning cycles. The section also provides references for each system's planning study results and other key documents.

2.1 PJM

The PJM Regional Transmission Expansion Planning Protocol (RTEPP) set forth in the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C., at Schedule 6, outlines the process used to develop transmission system enhancements and expansions that satisfy identified reliability, market efficiency, operational performance, and public policy needs, all collectively termed baseline upgrades approved by the PJM Board of Managers. The RTEPP also includes provisions for the Transmission Owners to develop enhancements and expansions identified as Supplemental Projects, which are not required to satisfy PJM criteria and are not approved by the PJM Board. The culmination of these efforts results in the PJM Regional Transmission Expansion Plan (RTEP). The interregional process and opportunities can be followed through participation in PJM stakeholder activities.[19]

The Transmission Expansion Advisory Committee (TEAC) and Subregional RTEP Committees meetings, and the associated meeting materials, are open and available to the public for monitoring all PJM's transmission-system needs and potential solutions for the entire Bulk Electric System as they are developed by PJM staff, as well as monitoring the Transmission Owners' process used for the planning of Supplemental Projects. This information is essential in evaluating proposals for

[17] The NERC term, "Bulk Electric System" (BES), includes transmission elements operated at 100 kilovolts (kV) or higher and real power and reactive power resources connected at 100 kV or higher. A BES does not include facilities used in the local distribution of electric energy.

[18] The NPCC term, "Bulk Power System" (BPS), refers to the interconnected electrical system within northeastern North America comprising system elements on which faults or disturbances can have a significant adverse impact outside of the local area.

[19] Obtaining a PJM account and sign in enables easy access to training, committee activities, notifications, and in-person / WebEx meetings. Find this resource on the PJM home page at http://www.pjm.com.

interregional transmission projects, which must satisfy needs in more than one region and be a more efficient or cost-effective solution compared with the regional solution.[20]

PJM's annual RTEP Report describes transmission study input data, processes, and results, as well as board-approved transmission upgrades. The RTEP Report also details process changes implemented during the previous year. Periodically, PJM publishes white papers that present study input parameters and address transmission planning topics of current stakeholder interest.[21]

Interregional projects are proposed in PJM's competitive transmission solution solicitation ("windows") process and specified as an interregional project proposal.[22] Website postings on regional and interregional planning provide interested stakeholders with necessary information to prepare for participation in interregional planning under the Amended Planning Protocol and the Northeast protocol version of IPSAC (note that a Midcontinent ISO version of the IPSAC also exists). Stakeholders can participate in PJM's two-year regional transmission planning cycle that incorporates reviews of all drivers for transmission upgrades. Opportunities for stakeholder proposals will be identified, and stakeholders may provide input to PJM regarding possibilities for interregional transmission that may be more efficient or cost effective.

[20] Information on PJM's TEAC is available at https://pjm.com/committees-and-groups/committees/teac.aspx.

[21] Information on PJM's RTEP and related reports is available at https://www.pjm.com/library/reports-notices/rtep-documents.aspx.

[22] Additional information on this competitive transmission solution solicitation process is available at PJM's "Competitive Planning Process" webpage; https://pjm.com/planning/competitive-planning-process.aspx. Information on generator interconnections, merchant transmission, long-term firm transmission service requests, customer information, generator deactivation requests, and other relevant PJM planning information is available at PJM's "Planning" webpage; http://pjm.com/planning.aspx. PJM's posted material on interregional planning under the Amended Planning Protocol is available at its "Inter-Regional Planning Stakeholder Advisory Committee—New York/New England" webpage; https://www.pjm.com/committees-and-groups/stakeholder-meetings/ipsac-ny-ne.aspx.

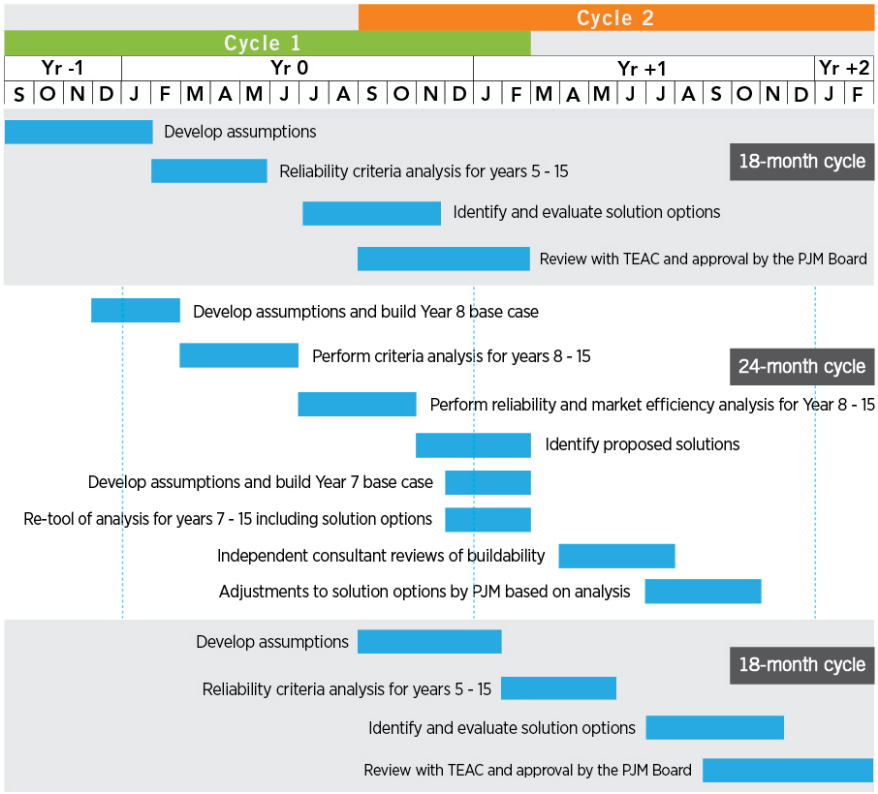

Figure 2-1: PJM's Two-Year Reliability Planning Cycle

As shown in Figure 2-1 and Figure 2-2, PJM's two-year transmission planning cycle includes an 18-month reliability cycle, a 24-month and two 12-month market-efficiency cycles. The 18-month reliability cycle, initiated annually, overlaps with the previous 18-month cycle and includes the full set of NERC reliability analysis. The 24-month market-efficiency cycle, initiated every even year, includes analysis to identify upgrades that could relieve economic constraints. The 12-month market-efficiency cycle determines any economic benefits of advancing the in-service date of the previous cycle's approved reliability upgrades, and if determined as beneficial, may result in earlier timing of previously approved reliability projects. The two-year cycle also includes analysis of a longer planning horizon for both reliability and market-efficiency needs. A long-term proposal window solicits project proposals for identified reliability issues that may require longer implementation timelines, if any, and for identified projected congestion issues. In practice, most of the reliability planning occurs in the 18-month cycle of criteria evaluations. Interregional projects may be identified as such and presented in any PJM proposal window; however, the long-term window of the two-year cycle is likely to be the most realistic option for coordinating with the schedules of neighboring regions.

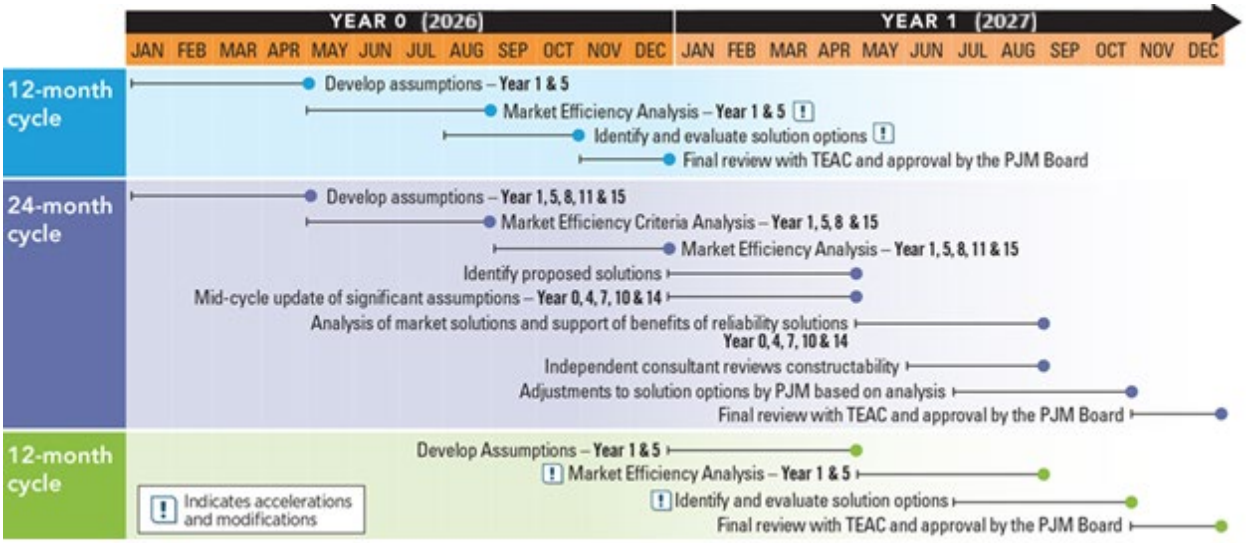

Figure 2-2: PJM's Two-Year Market-Efficiency Planning Cycle

2.2 NYISO

The NYISO's Comprehensive System Planning Process (CSPP) provides for evaluation of transmission, generation, and demand-side solutions on a comparable basis to address reliability, economic, and public policy issues. The NYISO identifies reliability needs and economic congestion, while the New York Public Service Commission identifies public policy transmission needs. The NYISO administers a process whereby solutions are proposed, evaluated, and implemented for any needs identified. Figure 2-3 shows the NYISO's Comprehensive System Planning Process. The NYISO's planning activities under the CSPP are regularly discussed with stakeholders at the Electric System Planning Working Group (ESPWG).[23]

The Reliability Planning Process (RPP) component of the CSPP is a biennial process that consists of two studies: the Reliability Needs Assessment (RNA) and the Comprehensive Reliability Plan (CRP).[24] The RNA evaluates the resource adequacy and transmission system security of New York Bulk Power Transmission Facilities (BPTFs) over a 10-year study period, identifying if there are Reliability Needs in accordance with applicable reliability criteria.[25] After the RNA is complete, the NYISO requests the submission of solutions to satisfy any identified Reliability Needs. The CRP sets forth the NYISO's findings regarding the proposed solutions and its plan to maintain reliability for the 10-year study period.

The NYISO also conducts quarterly Short Term Assessments of Reliability (STAR) to identify and address reliability needs within a five-year period due to generator deactivations, changes to project in-service dates, and other changes to the transmission system. For generator deactivations, the Responsible Transmission Owner(s) conducts the necessary studies of reliability impacts on their local transmission systems, which the NYISO reviews and verifies, to review the reliability impact on the non-BPTFs within the New York State Transmission System. The NYISO may address

[23] NYISO, "Electric System Planning Working Group," webpage (2024), https://www.nyiso.com/espwg

[24] NYISO, *Reliability Planning Process Manual* (September 2023), https://www.nyiso.com/documents/20142/2924447/rpp_mnl.pdf.

[25] NYISO's Bulk Power Transmission Facilities include all of the facilities it designates as Bulk Power System elements as defined by the New York State Reliability Council (NYSRC) and NPCC, as well as other transmission facilities relevant to planning the New York State transmission system.

any identified reliability needs through either in the Short-Term Reliability Process or, if time allows, through the next longer-term Reliability Planning Process. If it addresses a need in the short term, the NYISO solicits and may select a transmission solution for cost allocation and recovery through its tariff. As a stopgap solution, the NYISO may enter into reliability must-run agreements with generators as a temporary measure until a permanent solution becomes available.

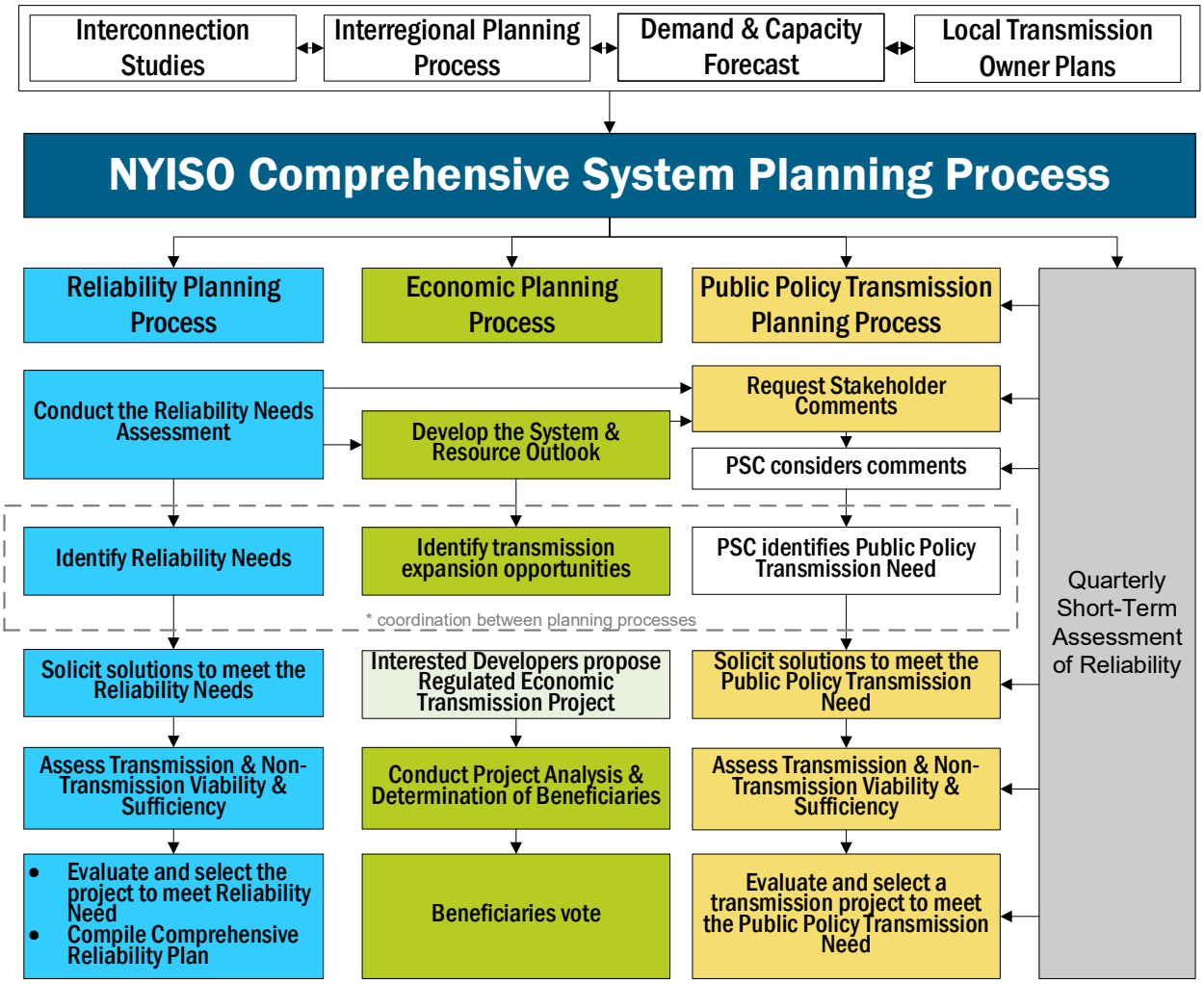

Figure 2-3: NYISO's Comprehensive System Planning Process

The Economic Planning Process consists of three study processes:

1. The System & Resource Outlook ("The Outlook") is a biennial report by which the NYISO summarizes the current assessments, evaluations, and plans in the biennial Comprehensive System Planning Process; produces a twenty-year projection of congestion on the New York State Transmission System; identifies, ranks, and groups congested elements; and assesses the potential benefits of addressing the identified congestion. This report is reviewed by NYISO stakeholders and approved by the Board of Directors.

2. If a Developer proposes a Regulated Economic Transmission Project (RETP) to address constraints on the BPTFs identified in the Economic Planning Process, the NYISO will perform an Economic Transmission Project Evaluation (ETPE) of the proposed Regulated Economic Transmission Project to determine the project's initial eligibility for cost allocation and recovery under the ISO OATT and to identify the beneficiaries that would be allocated the cost of the project.

The beneficiaries must approve the project's selection for cost allocation and recovery purposes in accordance with the voting requirements in the ISO OATT.

3. Market Participants and other interested parties may also request that the NYISO perform a Requested Economic Planning Study (REPS) at the requesting party's expense solely for information purposes, which scope and deliverables will be agreed upon by the NYISO and the requesting entity.

Under the Public Policy Transmission Planning Process,[26] interested parties propose potential transmission needs driven by Public Policy Requirements for consideration by and the New York State Public Service Commission (NYSPSC) to select needs for solution solicitation. A Public Policy Requirement is a federal, state, or local law or regulation that drives the need for transmission. The first stage of the Public Policy Transmission Planning Process involves identifying needs and soliciting solutions. The NYISO then evaluates the viability and sufficiency of the proposed solutions to satisfy each identified Public Policy Transmission Need. In the second stage, the NYISO evaluates and may select the more efficient or cost-effective transmission solution to each identified need.

Interregional planning is conducted with the NYISO's neighboring control areas in the United States and Canada under the Amended Planning Protocol. Interregional Transmission Projects are proposed at the same time as regional solutions in accordance with the NYISO CSPP. The NYISO's RNA, CRP, Short-Term Reliability Process, System and Resource Outlook, and Public Policy Transmission Planning reports provide interested parties with the necessary information to prepare for participation in interregional planning under the Amended Planning Protocol.

2.3 ISO New England

The ISO New England planning process continuously and comprehensively identifies system needs and solutions to meet these needs, such as additions to the transmission system, market responses, generation, or demand response.[27] The planning process involves the following major activities:

- Forecasting the annual and peak use of electric energy, energy efficiency, and photovoltaic capacity
- Projecting systemwide need for capacity and operating reserves, including generators and demand-side resources, to meet consumer demand for power and replace retiring power plants
- Analyses of the amount, operating characteristics, and locations of needed energy, capacity, and operating reserves and how the region can meet these needs
- Determining how the region's power system can continue to address reliability concerns by identifying areas of the grid where the planned transmission system is

[26] NYISO, *Public Policy Transmission Planning Process Manual* (June 2020), https://www.nyiso.com/documents/20142/2924447/M-36_Public%20Policy%20Manual_v1_0_Final.pdf/e8851b0f-8ca4-779f-97a0-d75af6716d94

[27] The ISO-NE planning process is documented on its website at http://www.iso-ne.com/system-planning. The *Transmission Planning Process Guide* outlines the steps in the regional system planning process. The *Transmission Planning Technical Guide* documents several assumptions used in ISO-NE planning studies. These guides are available at http://www.iso-ne.com/system-planning/transmission-planning/transmission-planning-guides. Additionally, the *Economic Studies Technical Guide* documents assumptions and procedures used in economic studies and is located at https://www.iso-ne.com/system-planning/system-plans-studies/economic-studies. Also see ISO-NE's *Open Access Transmission Tariff*, Attachment K, "Regional System Planning Process", at https://www.iso-ne.com/static-assets/documents/2021/07/sect_ii_att_k.pdf.

insufficient and developing cost-effective transmission system solutions to solve the insufficiencies

- Assessing the performance of the region's transmission system under longer-term load, generation, and other assumptions provided by the New England States Committee on Electricity (NESCOE), and designating transmission system solutions to NESCOE-selected longer-term needs
- Complying with interregional planning requirements; conducting required activities
- Assessing energy-security risks for addressing resource adequacy and regional energy-security issues
- Keeping abreast of existing and pending environmental regulations, emissions analyses, and other studies affecting generator operating requirements and the need for remediation measures
- Integrating renewable and other resources to meet system needs as the grid transforms into one with high amounts of inverter-based technologies
- Assessing multistate, ISO-NE, and state initiatives that affect system planning

Through an open and transparent process, ISO-NE discusses study scopes of work, assumptions, and draft results with stakeholders. ISO-NE's stakeholder planning forum is the Planning Advisory Committee (PAC).[28] PAC attendance is diverse and open to all and currently includes representatives from state and federal governmental agencies; Participating Transmission Owners (PTOs); ISO-NE market participants; other New England Power Pool (NEPOOL) members;[29] consulting companies; manufacturers; and other organizations, such as universities and environmental groups.

The Regional System Plan (RSP) is developed every other year.[30] RSPs demonstrate that ISO-NE meets reliability requirements established by FERC, NERC, NPCC, and ISO-NE, and the reports are produced in accordance with the requirements in Attachment K of ISO-NE's OATT. Each RSP is a snapshot of the power system and relevant studies and forecasts at a point in time, and the results are updated as needed.

ISO-NE studies evaluate proposed interconnections to and transmission service over the New England transmission system for projects listed in the ISO-NE's Interconnection Queue.[31] The studies are performed to ensure that system reliability criteria and no-adverse-impact standards are met under Section I.3.9 of the Tariff. They typically consist of thermal, voltage, stability, short-circuit, and electromagnetic transient (EMT) analyses and address the following topics:

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[28] The PAC is an open stakeholder forum that provides input and feedback to ISO-NE on the regional system planning process. While there are no requirements to become a member of the PAC, participation in the PAC is subject to certain rules, including adherence to the CEII policy. PAC materials are available at http://www.iso-ne.com/pac. PAC agendas, minutes, materials, draft reports, including stakeholder comments and ISO-NE responses, and final reports are posted on the ISO-NE website.

[29] NEPOOL members serve as ISO stakeholders and market participants. More information on NEPOOL participants is available at http://www.iso-ne.com/participate/governing-agreements/nepool-agreement.

[30] ISO-NE, *2025 Regional System* Plan (December 8, 2025), https://www.iso-ne.com/static-assets/documents/100030/final_2025_rsp.pdf.

[31] See the latest information on ISO-NE studies at http://www.iso-ne.com/system-planning/system-plans-studies/interconnection-request-studies.

- Interconnections of proposed generators
- Requests for an elective transmission expansion
- Requests for transmission service

ISO-NE makes available the databases used in its analyses and other relevant information required to perform simulations consistent with FERC policies and the ISO-NE Information Policy requirements pertaining to confidential information and Critical Energy Infrastructure Information (CEII) requirements.[32] Stakeholders can access the *Forecast Report of Capacity, Energy, Loads, and Transmission* (the CELT Report) to obtain key data of the New England system.[33] In addition, power system models are available to stakeholders wishing to conduct their own independent studies.[34]

[32] *ISO New England Information Policy (ISO New England Inc. Transmission, Markets and Services Tariff, Attachment D)* (September 11, 2022) contains the requirements for controlling the disclosure of CEII and confidential information; at http://www.iso-ne.com/static-assets/documents/regulatory/tariff/attach_d/attachment_d.pdf.

[33] ISO-NE, *Capacity, Energy, Loads, and Transmission (CELT) Forecast Report* and related information, https://www.iso-ne.com/celt/. Earlier ISO-NE CELT reports and the 2025 CELT are available at the same website.

[34] Stakeholders with CEII approval can obtain publicly available models of the transmission system network through the FERC 715 process, which requires transmitting utilities that operate facilities rated at or above 100 kV to submit information to FERC annually. See ISO-NE's "FERC Form No. 715 Reports" webpage, at https://www.iso-ne.com/system-planning/transmission-planning/ferc-form-no-715-reports, and FERC's "Form No. 715 – Annual Transmission Planning and Evaluation Report" webpage, https://www.ferc.gov/industries-data/electric/electric-industry-forms/form-no-715-annual-transmission-planning-and-evaluation-repor-data. Additionally, Transmission Planning models used in ISO New England's assessments can be found on ISO New England's "Transmission Planning Models" webpage, at https://www.iso-ne.com/system-planning/planning-models-and-data/transmission-planning-models/.

3. Coordination of the Regional ISO/RTO Planning Processes with the Interregional Planning Process

The ISO/RTOs have implemented and coordinated their respective regional planning processes with the interregional planning process. The Joint ISO/RTO Planning Committee, consisting of representatives of the three ISO/RTOs, coordinates and reconciles the regional practices and assumptions used for interregional planning. The JIPC and stakeholders have reviewed the interregional planning timelines in conjunction with the regional planning cycles, and the JIPC has concluded that the interregional planning cycle effectively coordinates with the respective regional timelines.[35]

The JIPC ensures that the interregional planning process actively engages stakeholders through the IPSAC. The JIPC convenes meetings, which are typically held as webinars, and allows for stakeholder opportunities to review materials and provide comments.

3.1 Coordination of ISO/RTO Planning Timelines and Power System Models

All three ISO/RTOs issue long-term planning assessments and allow for qualified developers to propose solutions through a competitive process.[36] The completion dates of individual ISO/RTO studies and reports differ, but the coordination of planning activities across system borders occurs continuously. Table 3-1 summarizes several key completion dates for the ISO/RTOs.

The three ISO/RTOs have coordinated data and planning models. PJM updates its demand forecasts annually every January, NYISO every April, and ISO-NE every May. Interconnection queues are publicly available. PJM and ISO-NE update their interconnection queues continuously. NYISO updates its queue monthly. The ISO/RTOs annually coordinate their interregional power flow and stability models but may update coordinated models more frequently as required. Power flow and stability models are available to stakeholders subject to CEII and Information Policy constraints. The JIPC periodically updates interregional production cost databases, typically by exchanging economic information and power flow models as part of activities conducted by the Eastern Interconnection Planning Collaborative (EIPC). (See Section 5.3). As required, the ISO/RTOs share resource adequacy data, which are used in loss-of-load-expectation (LOLE) analysis and other studies.

[35] See the December 14, 2015, IPSAC discussion, "Interregional Planning Timelines in the Context of Order 1000," at http://www.iso-ne.com/static-assets/documents/2015/12/121415_ipsac_interregional_timelines.pdf.

[36] All three ISO/RTOs allow for qualified developers of transmission to participate in their regional planning processes. The qualified developers are called Qualified Transmission Project Sponsors in ISO-NE, Qualified Developers in NYISO, and pre-qualified Designated Entities in PJM.

Table 3-1: Timing of Regional Planning Activities with Interregional Planning Requirements

Key Activity that Affects Interregional Planning	ISO/RTO		
	NYISO	PJM	ISO-NE
Reliability needs	Continuously; summarized in a report every even year. Near-Term Needs summarized in a report every quarter.	Continuously identified and reported to stakeholders throughout the year; summarized in an annual report	Continuously, summarized in the Regional System Plan in the fourth quarter of every odd year
Reliability solutions	Continuously; summarized in a report every odd year	Potential solutions identified, evaluated, and selected throughout the year in a transparent process with stakeholders	Continuously, summarized three times per year in a project list; summarized in the Regional System Plan every odd year
Economic needs	Continuously; summarized in an biennial report every even year	Identified midyear of year one of two-year cycle and reviewed with stakeholders Q3 and Q4	Identified once every two years and reviewed with stakeholders after completion of the System Efficiency Needs Scenario (SENS) analysis.
Economic solutions	Continuously; summarized in a report for each proposed project	Potential solutions identified January through April of second year of the two-year cycle; solutions evaluated and selected at the end of the second year	If issues are identified in the SENS analysis, and are classified as needs during the System Efficiency Needs Assessment, they are posted in an RFP for potential solutions
Public policy needs	As regional needs are identified, request to interested parties to identify potential needs performed biennially in August every even year	As regional needs are identified	At least once every three years (last evaluated 2023)
Public policy solutions	Following identification of a public policy transmission need	Following identification of a public policy transmission need	Following identification of a public policy transmission need
Other Planning Activities	Not Applicable	Not Applicable	**Longer-Term Transmission Planning:** To help the New England states achieve their policy-based goals, when system concerns are identified in a Longer-Term Transmission Study (LTTS), the New England States Committee on Electricity (NESCOE) may determine that a Request for Proposals (RFP) is needed, after which ISO-NE will issue, administer, and evaluate the proposals submitted in response to the RFP.[37]

[37] Information concerning Longer-Term Transmission Planning (formerly known as Extended-Term Transmission Planning) can be found at: https://www.iso-ne.com/committees/key-projects/implemented/extended-term-transmission-planning-key-project

3.2 JIPC Process for Coordinating Interregional Projects and Administering the IPSAC

The JIPC reviews potential opportunities where interregional projects might satisfy the needs of more than one region. Qualified developers may submit proposals to two or more neighboring ISO/RTOs consistent with the requirements of the respective regional processes. The proposals can be for reliability projects, economic projects, public policy projects, and other transmission system projects planned by the respective regions.

The JIPC also coordinates studies needed to identify potential interregional impacts, as well as the system data and models used in studies, after which it would identify and evaluate the performance of projects that could affect interregional system performance. Several interconnection studies of projects having potential interregional impacts have been discussed.

The JIPC convenes IPSAC meetings a minimum of two times annually. A large number of stakeholders typically attend these meetings. Attendees, including state and federal regulators, represent a wide spectrum of individuals and companies that participate in one or more of the ISO/RTO planning processes. Meeting agendas allow for adequate time for stakeholder discussions of the following topics:

- A review of the interregional coordination process, which emphasizes important changes
- The JIPC response to stakeholder comments
- Regional planning needs for each of the ISO/RTOs, which, in addition to information discussed at regional stakeholder meetings, helps qualified developers formulate interregional transmission project proposals that can potentially meet the needs of more than one system
- Coordination of interconnection queues and long-term firm transmission requests
- Scopes of work for special items, such as the biennial NCSP
- General stakeholder comments, interregional planning achievements, and next steps

Typically, stakeholders have at least 10 business days after an IPSAC meeting to submit comments.

On a biennial basis, the JIPC posts a draft Northeastern Coordinated System Plan for stakeholder review, comment, and discussion at a future IPSAC meeting. The process of posting written comments and JIPC responses increases transparency and reduces misunderstandings that may result from stakeholder discussions.

4. IPSAC Review of System Plans

The IPSAC discusses respective ISO/RTO planning processes, system needs, and transmission projects proposed and evaluated to address potential interregional impacts.[38] The IPSAC also discusses studies of interconnection queues and long-term firm transmission requests for projects with potential impacts on neighboring systems.

4.1 IPSAC Discussions of the ISO New England System

During 2024 and 2025 IPSAC meetings, ISO-NE presented updates to several regional planning processes and activities in New England, including the ability for stakeholder input through ISO's Planning Advisory Committee. IPSAC discussions included the continuous nature of ISO-NE's regional planning process; how ISO-NE identifies reliability, system efficiency, public policy transmission, and longer-term needs; and how ISO-NE identifies transmission upgrades satisfying these needs. ISO-NE presented the status of several studies and projects with potential interregional impacts documented in the 2025 *Regional System Plan* (RSP25).[39]

RSP25 provides an update on the ISO's latest load forecasts, and a summary of new supply resources proposed in the region. The report also covers current approaches and results of the transmission planning process, as well as updates regarding resource adequacy. It offers an overview of recent economic studies, which explore how the changing resource mix can meet reliability requirements through the power system's ongoing transition. The document covers the following topics:

- State emissions goals drive electrification and changes in demand
- Regional collaboration powers investment in longer-term transmission needs
- Changes to the interconnection process improve integration of new resources
- Resource adequacy forecast drives progress in capacity market reforms
- Modeling the energy transition illuminates paths to the future
- Aging and limited infrastructure presents challenges
- New transmission technologies offer possibilities for inverter-based resource integration

As part of the 2024 and 2025 IPSAC discussions, ISO-NE presented the status of several ongoing planning needs assessments and the status of solutions. The following specific planning items were discussed:

- Vermont
- Connecticut
- Boston
- New England-wide short circuit assessment
- Daytime Minimum Load Needs Assessment

[38] These topics are typically discussed at every IPSAC meeting. (See IPSAC meeting materials held May 3, 2024, December 6, 2024, May 2, 2025, and December 5, 2025 at: https://www.pjm.com/committees-and-groups/stakeholder-meetings/ipsac-ny-ne.aspx, http://www.iso-ne.com/ipsac, and https://www.nyiso.com/ipsac).

[39] The ISO-NE RSP25 is posted at https://www.iso-ne.com/rsp.

- Regular updates to the ISO New England Project Listing and Asset Condition Listing

In addition, ISO-NE discussed its work on several topics of interest to the IPSAC.[40]

- Interregional Study Request: In collaboration with New York ISO and PJM Interconnection, ISO New England assessed whether and how to increase the loss-of-source limit (currently 1,200 MW). See Section 5.1: Interregional Study: Increasing New England Loss of Source Limit.
- 2050 Transmission Study: The study was completed in February 2024, and all follow-on study work was completed in March 2025.
- Longer-term Transmission Planning, Phase 2: The second phase of the effort addressed the rules to enable a state or states to consider potential transmission development in connection with the identified issues and the associated cost allocation for those transmission improvements. A FERC filing was made on May 9, 2024, and FERC accepted the Tariff changes on July 8, 2024.
- Longer-term Transmission Planning RFP: On December 13, 2024, NESCOE issued a request letter to ISO-NE, asking that ISO-NE issue a 2025 Longer-Term Transmission Planning (LTTP) RFP to address the following needs by 2035:
    - Increase Surowiec-South interface limit to at least 3,200 MW
    - Increase Maine-New Hampshire interface limit to at least 3,000 MW
    - Accommodate the interconnection of at least 1,200 MW of new onshore wind at or near Pittsfield, Maine

  ISO-NE issued the 2025 LTTP RFP on March 31, 2025, and four Qualified Transmission Project Sponsors (QTPS) submitted six proposals by the September 30, 2025 deadline. ISO-NE is evaluating the proposals and anticipates making recommendations by September 2026.
- Economic Study Process Improvements, Phase 2: The second phase of the effort focused on further detailing the System Efficiency Needs Scenario (formerly the Market Efficiency Needs Scenario) that can potentially trigger a request for proposal (RFP) for transmission development. A FERC filing was made on April 23, 2025, and FERC accepted the Tariff changes on June 20, 2025.
- Storage as a Transmission-Only Asset: The ISO made changes to its Tariff to allow storage to be considered as a transmission asset for the purposes of implementing solutions to Needs Assessments, System Efficiency Transmission Upgrades (formerly Market Efficiency Transmission Upgrades), or Public Policy Transmission Studies. FERC accepted the Tariff changes on October 19, 2023. The ISO made an additional FERC filing establishing the effective date as September 1, 2026.
- On September 25, 2024, ISO-NE began discussions on FERC Order 1920 with stakeholders. On January 15, 2025, due to the impending work on the 2025 LTTP RFP, ISO-NE, together with NESCOE and the Participating Transmission Owners Administrative Committee ("PTO AC") on behalf of the Participating Transmission Owners ("PTOs"), requested an extension of 24 months to submit the regional compliance filing and 22 months to submit the interregional compliance filing. FERC granted the extensions on February 10, 2025. The date for ISO-NE to make a compliance filing to meet all the requirements of Order 1920 is

[40] Information in this section can be found in the following ISO-NE's IPSAC presentation slides: May 3, 2024, December 6, 2024, May 2, 2025, and December 5, 2025.

June 14, 2027, including interregional transmission coordination requirements. ISO-NE anticipates resuming discussions in September 2026.

- After stakeholder discussions at the PAC and the IPSAC and additional JIPC discussions described in this document, ISO-NE determined that no new interregional transmission facilities would more efficiently or cost effectively meet New England's system transmission security needs than already identified separate regional solutions, which have been shown to have no adverse impact on neighboring systems.
- In January 2026, New England Clean Energy Connect, a ±320 kV HVDC line with terminal configurations allowing up to 1,200 MW to be delivered to Lewiston, Maine from Québec (Hydro-Québec) was placed in service. In addition, one active interconnection is currently proposed between ISO-NE and the Quebec system. This elective transmission upgrade is proposed to import resources to the New England region. The ISO-NE Interconnection Queue includes this proposed project, which could have potential impacts on neighboring systems. Proposed projects in the queue include generating facilities and one elective transmission upgrade interconnecting New England and Canada. This proposed elective transmission upgrade interconnection requires analyses of coordinated interregional control system interactions among new and existing high-voltage direct-current (HVDC) ties to ensure system stability and acceptable system response to contingencies in New England.

The ISO-NE planning and interregional coordination processes also consider transmission asset conditions. As an example, in the past, ISO-NE and NYPA coordinated the replacement of a phase shifting transformer (PST) and the planned installation of a new SMARTVALVE™ in series with the PST on the tie-line between Plattsburgh substation in New York and the Sandbar substation in Vermont.[41]

4.2 IPSAC Discussions of the NYISO System

The NYISO's Comprehensive System Planning Process provides for the evaluation of solutions to address reliability, economic, and public policy needs. At the four regularly scheduled IPSAC meetings held in 2024 and 2025, the NYISO presented the planning activities under the Comprehensive System Planning Process for stakeholder review and inputs. As part of the IPSAC discussions, the NYISO presented the status of several needs and solutions:

- On June 22, 2023, the New York Public Service Commission issued an Order declaring a Public Policy Transmission Need to deliver at least 4,770 MW of offshore wind to New York City[42]. The NYISO began the solicitation of solutions in second quarter of 2024. On July 17, 2025, the New York Public Service Commission issued an order withdrawing the NYC Need and as required by the tariff, ending the NYISO's ongoing evaluation of the NYC PPTN.
- The 2024 Reliability Needs Assessment (RNA)[43] evaluated the reliability of New York State Bulk Power Transmission Facilities from 2028 through 2034 for the assumed future system demand and with the assumed planned projects meeting their proposed in-service dates. The 2024 RNA identified an actionable Reliability Need driven by transmission security

[41] NYPA has jurisdiction of the 115 kV system in this area.

[42] NYSPSC, *Order Addressing Public Policy Requirements for Transmission Planning Purposes*, New York City Offshore Wind Public Policy Transmission Need Order (June 22, 2023), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={A077E488-0000-C217-BAED-C4B0826480C5}

[43] NYISO, 2024 Reliability Needs Assessment Report (November 19, 2024), https://www.nyiso.com/documents/20142/2248793/2024-RNA-Report.pdf

violations in New York City beginning in 2033, growing to a deficiency of 97 MW by 2034. Post-RNA system updates, namely a 200 MW decrease in New York City locality demand forecast, eliminated the identified Reliability Need and, therefore, a solicitation for solutions was not required.

- NYISO identified Short-Term Reliability Need in 2025 Q3 STAR[44]. Consistent with 2023 Q2 STAR, the 2025 Q3 STAR continued to find that New York City locality would be deficient in the summer through the entire five-year horizon without the completion and energization of future planned projects. The 2025 Q3 STAR found that the BPTF in the Long Island locality would be deficient, beginning in summer 2027 and continuing through the remaining five-year horizon, primarily driven by the deactivation of Pinelawn and Far Rockaway GTs. On the non-BPTF, LIPA, the transmission Owner identified non-BPTF system deficiencies on the 69 kV system through the entire five-year horizon, primarily driven by the deactivation of the Far Rockaway GTs.
- In November 2025, the NYISO issued its Comprehensive Reliability Plan[45] (CRP), which identified a growing range of uncertainty and emerging risks across generation, demand, and transmission that could significantly affect system reliability. To maintain system reliability, the CRP recommended actions to strengthen planning across a broad section of plausible outcomes, improve energy adequacy metrics, and accelerate solutions for resource and voltage performance.
- The 2023-2042 System & Resource Outlook[46] , projected potential resource development over the next 20 year period between 2023 and 2042 in New York and highlighted with the opportunities for transmission expansion throughout New York State. The analyses found that New York generation capacity will need to triple to meet renewable energy and emission-free goals and projected demand growth. Electric energy consumption is expected to increase significantly in response to the economic development and decarbonization energy policies. The generation resources and transmission system necessary to meet the changing energy demand will be required to evolve accordingly. The study identified actionable transmission expansion opportunities in upstate New York to alleviate transmission congestion and fully utilize the transmission capability of the Central East interface and concluded that opportunities for further transmission investment in Western and Northern New York should be monitored as resources are developed in those regions.

With the discussions at the Electric System Planning Working Group and the IPSAC and additional JIPC discussions, the NYISO determined that no interregional transmission projects would be more efficient or cost effective than the regional plans to address the needs. No interregional transmission projects were proposed as solutions in NYISO's CSPP in 2024 and 2025.

At the IPSAC meetings, the NYISO also presented a list of interconnection projects with potential interregional impacts. The NYISO continues to coordinate its interconnection studies with ISO-NE

[44] NYISO, 2025 Q3 STAR (October 13, 2025),

https://www.nyiso.com/documents/20142/16004172/2025-Q3-STAR-Report-Final.pdf/beacd093-9e4c-26a6-5318-69a08900b376

[45] NYISO, 2025 Comprehensive Reliability Plan Report (November 21, 2025), https://www.nyiso.com/documents/d/guest/2025-2034-comprehensive-reliability-plan

[46] NYISO, 2023-2042 System & Resource Outlook Report (July 23, 2024), https://www.nyiso.com/documents/20142/46037414/2023-2042-System-Resource-Outlook.pdf

and PJM. Projects that may have potential interregional impacts are studied by both the NYISO and the impacted regions.

4.3 IPSAC Discussions of the PJM System

During the course of the four 2024 and 2025 IPSAC web conferences, PJM provided updates on its regional planning results, including baseline plans, interconnection projects under joint interregional review, and generator deactivation updates. This information was presented for review and input to include any stakeholder-identified transmission needs or solutions that contribute to the efficiency or cost effectiveness of PJM's regional plans. The analyses and results discussed are summarized in Table 4-1 and Table 4-2 and available in detail on the PJM.com and TEAC webpages.

Table 4-1: PJM RTEP Proposal Windows and Board Baseline Upgrade Approvals, 2024

RTEP Proposal Windows	2024 Window 1	2024 Board Baseline Upgrade Approvals
Objective	All Reliability Criteria	
Flowgates Identified	8654	62 new baseline upgrades
Proposals	95	~5,919.77 M

Table 4-2: PJM RTEP Proposal Windows and Board Baseline Upgrade Approvals, 2025

RTEP Proposal Windows	2024/2025 Long Term Window	2025 Window 1	2025 Board Baseline Upgrade Approvals
Objective	Market Efficiency	All Reliability Criteria	
Flowgates Identified	3	4337	122 new baseline upgrades
Proposals	14	134	~$11,664.58 M
Cost Range	$1.18M - $1.568B	$1.65M - $6.73B	

Opportunities for stakeholders to offer transmission development proposals addressing issues identified in ongoing analysis and review process are managed through PJM's RTEP competitive window process. The annual RTEP planning assessment includes a comprehensive review of all PJM Bulk Electric System facilities pursuant to the standards set forth by NERC TPL-001-4.[47] The annual baseline reliability analysis encompasses thermal, voltage, short circuit, and stability, satisfying all the TPL standards for all PJM BES facilities. In addition, testing includes reviews of market efficiency, scenarios, and operational performance. Pursuant to the PJM competitive window process, all eligible identified issues are presented for competitive proposal solicitation. During 2024 and 2025, PJM conducted open, competitive solicitation processes, as shown in Table 4-1 and Table 4-2.

PJM did not receive any proposals in its regional windows for interregional transmission facilities to be evaluated for identified PJM transmission issues with respect to New York.

[47] NERC, *Standard TPL-001-4 – Transmission System Planning Performance* Requirements (January 1, 2015), http://www.nerc.com/pa/Stand/Reliability%20Standards/TPL-001-4.pdf.

5. Other Coordinated Planning Activities

The ISO/RTOs conduct studies as needed with other entities and neighboring areas within and outside the region that aim to, for example, improve production cost models, share simulation results, investigate the challenges to and possibilities for integrating renewable resources, and address other common issues affecting the planning of the overall system. The ISO/RTOs also participate in numerous interregional planning activities with other entities, including the Eastern Interconnection Planning Collaborative, US Department of Energy (DOE), the North American Electric Reliability Corporation and its regional reliability councils, and other planning authorities in the United States and Canada. The overriding purpose of these involvements is to enhance the widespread reliability of the interregional electric power system.

This section discusses the main collaborative efforts the ISO/RTOs undertake with neighboring areas to analyze the interconnection-wide system, study and address interregional transfers and seams issues, and improve competitive electricity markets in North America.

5.1 Interregional Study: Increasing New England Loss of Source Limit

On March 27, 2023, ISO-NE sent a request for an interregional study to JIPC. ISO-NE requested:

- An evaluation of the loss of source limit in today's system to see if the limit can be raised above 1,200 MW, and
- If the limit on today's system remains below 2,000 MW, identification of upgrades necessary to support a 2,000 MW loss of source limit.[48]

The scope of the interregional study was divided into four steps, which included building future models, transfer analysis on key interfaces, steady-state and stability analyses, and planned system maximum loss of source limit identification.

Given the complexity of the study as well as competing priorities for the three ISO/RTOs, ISO-NE concluded the effort on this project in Q3 2025 with the completion of the transfer analysis on key interfaces and N-1 steady-state analysis. With that work done, the following conclusions were reached.

- The loss of source limit in New England will remain 1,200 MW for the planned system due to constraints along the New York – New England border, and
- To raise the loss of source limit to 2,000 MW, in addition to upgrades along the New York – New England interface, additional transmission reinforcements may be needed at a minimum on the Central East interface and perhaps on the PJM-NY interface as well

ISO-NE identified the following items that would need to be addressed prior to additional analysis being performed.

- Ensure that the NYISO system has addressed the changes around the Central East interface so that impacts of the loss of source in New England can be accurately studied,
- Ensure that the pre-existing voltage issues seen around the PJM-NY interface are addressed so that the impact of loss of source in New England can be assessed accurately,
- Identify location and total number of 2,000 MW resources that New England would want to interconnect,
- Gain clarity on how any increase in loss of source limit will be codified and what conditions may require resources in New England to be curtailed back to 1,200 MW, and

[48] Letter from ISO New England to the Members of the JIPC (March 27, 2023), at https://www.iso-ne.com/static-assets/documents/2023/03/jipc_loss_of_source_limit_final.pdf

- Identify impact of the above two items on reserve requirements.

The analysis performed to date established a new baseline for system constraints in PJM and NYISO areas that are impacted by a loss of source in New England. The efforts of this joint study will allow the ISO/RTOs to start from a better position if the three ISO/RTOs explore increasing the loss of source limit in the future.[49] A study report that provides additional details will be finalized by Q3 of 2026.

5.2 Electric Reliability Organization (NERC) Overview, Long-Term Reliability Assessments, and Other Studies

The ISO/RTOs are responsible for complying with applicable NERC standards addressing bulk system operations and planning. In addition, the ISO/RTOs participates in regional and interregional studies required for compliance.

Through its committee structure, NERC as the FERC-designated Electric Reliability Organization (ERO) regularly publishes reports that assess the reliability of the North American electric power system. Annual long-term reliability assessments evaluate the future adequacy of the power system in the United States and Canada for a 10-year period. The reports project electricity supply and demand, evaluate resource and transmission system adequacy, and discuss key issues and trends that could affect reliability. Summer and winter assessments evaluate the adequacy of electricity supplies in the United States and Canada for the upcoming peak demand periods in these seasons. Special regional, interregional, or interconnection-wide assessments are conducted as needed.

Annual long-term reliability assessments (LTRAs) evaluate the future adequacy of the power system in the United States and Canada for a 10-year period. The reports project electricity supply and demand, evaluate resource and transmission system adequacy, and discuss key issues and trends that could affect reliability. Summer and winter assessments evaluate the adequacy of electricity supplies in the United States and Canada for the upcoming peak demand periods in these seasons. Special regional, interregional, or interconnection-wide assessments are conducted as needed.

The 2025 LTRA[50] recognizes grid transformation issues and recommends a series of actions for the ERO as follows:

1. **Integrated Resource Planners, market operators, and regulators:** Expedite new resources to meet growing demand and carefully manage generator deactivations.
2. **NERC, industry, and regulators:** Understand and manage reliability risks accompanying large-load growth and leverage potential capabilities in new types of loads to provide flexibility to operators during times of grid stress.
3. **NERC, Regional Entities, and industry:** Improve the LTRA by incorporating new analysis and criteria to inform stakeholders of future reliability risks.
4. **Regulators and policymakers:** Streamline siting and permitting processes to remove barriers to resource and transmission development.

[49] See ISO-NE's Interregional Study Update: Increasing New England Loss of Source Limit presentations to IPSAC on the following dates: December 6, 2024, May 2, 2025, and December 5, 2025.

[50] See page 11 of the 2025 LTRA, at https://prod.nerc.com/globalassets/our-work/assessments/nerc_ltra_2025.pdf

5. **Regulators, electric industry, and gas industry member organizations:** Continue identifying and implementing solutions for addressing the operating and planning needs of the interconnected natural gas-electric energy system.
6. **Regional transmission organizations, independent system operators, and FERC:** Continue to ensure that ERSs (Electric Reliability Services) are maintained.

In addition, new and existing NERC groups have been formed to address several reliability issues:[51]

- The Large Loads Task Force (LLTF) focuses on identifying the unique characteristics and risks associated with emerging large loads and then validates and prioritizes these risks. The LLTF identifies gaps and mitigation of potential risks to support BPS reliability including enhancements to existing planning and operations processes to help transmission planners and operators mitigate these risks.
- The Load Modeling Working Group (LMWG) drives the advancement and utilization of dynamic load modeling on an interconnection-wide basis. The LMWG addresses current issues related to available dynamic load models, develops load model data sets and guidelines for load modeling practices, and provides guidance on future developments of dynamic load modeling capability across North America.
- The Electromagnetic Transient Modeling Task Force (EMTTF) purpose is to support and accelerate industry adoption of electromagnetic transient (EMT) modeling and simulation in their interconnection and planning studies of bulk power system (BPS)-connected inverter-based resources.
- The Inverter-Based Resource Performance Subcommittee (IRPS) continues to share lessons learned through worldwide experience about the growing amount of resources asynchronously connected.[52] The task force also examines methodologies to determine sufficient levels of ancillary services to address the challenges and potential risks from increasing amounts of DERs.
- The System Planning Impacts from Distributed Energy Resources Working Group (SPIDERWG) addresses the effects of the growing penetrations of DERs on bulk power system planning, modeling, and reliability.[53] The SPIDERWG consists of four subgroups focusing on DER: models used in studies, verification of these models, studies of increasing penetration, and coordination with other industry activities to share information.
- Other groups are addressing a variety of reliability issues:[54]
    - Assessing resource performance and methods for evaluating resource adequacy to properly account for variable energy resources and DERs
    - Improving system models and analysis to assess the reliability effects of geomagnetic disturbances

[51] NERC, Subcommittees, Working Groups, and Task Forces, at https://www.nerc.com/who-we-are/committees/reliability-and-security-technical-committee-rstc/subcommittees-working-groups-and-task-forces

[52] Refer to NERC's "Inverter-Based Resource Performance Subcommittee," at https://www.nerc.com/comm/RSTC/Pages/IRPS.aspx

[53] This effort succeeds NERC's Distributed Energy Resources Task Force (DERTF) and Essential Reliability Services Task Force/Working Group (ERSTF/ERSWG).

[54] Additional information about these activities is available at https://www.nerc.com/comm/PC/Pages/default.aspx.

- Providing guidance on system event analysis and application of phasor measurement units (PMUs)[55]
- Collecting data necessary for modeling and assessing the system
- Addressing system protection and control issues arising from variable short-circuit availability and high penetrations of inverter-based resources

5.3 Eastern Interconnection Planning Collaborative

Most of the electric power planning coordinators of the Eastern Interconnection, including ISO New England, New York ISO, and PJM, formed the Eastern Interconnection Planning Collaborative (EIPC) in 2009 to address their portion of North American planning issues, combine the existing regional transmission expansion plans, and analyze the interconnection-wide system.

EIPC provides information, data, and support regarding planning issues relevant to the Eastern Interconnection to various state and federal agencies (*e.g.,* National Council on Electricity Policy, National Labs, DOE, and FERC).[56]

In December 2023, the EIPC published its white paper on "Technical Considerations for Large Power Transfers Between Regions."[57] The purpose of the white paper was to outline for policymakers and stakeholders some of the key technical issues associated with:

- Determining an appropriate level of interregional Transfer Capability (ITC) between regions within the Eastern Interconnection, and
- Expanding the high-voltage transmission system to achieve the appropriate level of transfer capability.

The white paper was intended to raise awareness of the engineering complexities and technical issues that must be considered when assessing the benefits and costs of committing to any substantial investments required to enhance ITC.

To further advance its efforts in assessing the amount of power that could be reliably transferred between regions within the Eastern Interconnection, the EIPC initiated its ITC study in 2024.[58] The study is intended to identify the baseline ITC for the existing bulk power system and transfer constraints between regions under extreme weather conditions.[59]

With the addition of inverter-based, nonsynchronous generation and planned synchronous resource retirements, the ability of the Eastern Interconnection (EI) to maintain frequency should be reviewed. The EIPC conducted an analysis that improved the models of system response to frequency events and assessed the 2025 system.[60] The results showed acceptable system

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[55] A *phasor measurement unit* is a device that measures the electrical waves on the power grid at a remote site using synchronized real-time measurements (i.e., synchrophasors) and global positioning satellite (GPS) technology, which accurately monitor the performance of the grid and provide specific data for operating the system and enhancing its design.

[56] The National Council on Electricity Policy has subsumed the activities of the Eastern Interconnection States Planning Council (EISPC); see https://www.naruc.org/ncep/resources/eastern-interconnection-states-planning-council-eispc/.

[57] Technical Considerations for Large Power Transfers Between Regions, EIPC, 2023.

[58] EIPC Interregional Transmission Transfer Capability Study Report, EIPC, 2025.

[59] The EIPC ITC report is independent of the NERC Interregional Transfer Capability Study (ITCS) and does not incorporate the ITCS inputs or results. It also does not recommend "prudent additions".

[60] EIPC, *Frequency Response Working Group 2022 Final Report* (February 10, 2024), at https://eipconline.com/s/EIPC-FRWG-2022-Final-Report-2-10-24.pdf.

performance after fully considering the anticipated retirements of older high-inertia synchronous generators and additions of planned nonsynchronous resources within the Eastern Interconnection.

5.4 ISO/RTO Council Activities

Created in April 2003, the ISO/RTO Council (IRC) is an industry group consisting of the nine ISOs and RTOs in North America.[61] These ISOs and RTOs serve two-thirds of the electricity customers in the United States and more than 50% of Canada's population. The IRC works collaboratively to develop effective processes, tools, and standard methods for improving competitive electricity markets across much of North America. Each ISO/RTO manages efficient, robust markets that provide competitive and reliable electricity service, consistent with its individual market and reliability criteria.

While the IRC members have different authorities, they have many planning responsibilities in common because of their similar missions. Each ISO/RTO independently and fairly administers an open, transparent planning process among its participants. These activities include exchanging information, treating participants comparably, resolving disputes, coordinating infrastructure improvements regionally and inter-regionally, conducting economic planning studies, and allocating costs. This ensures a level playing field for developing infrastructure driven efficiently by competition and meeting all reliability requirements.

IRC members continue to collaborate with other entities beyond the JIPC members. More recently, JIPC members have and continue to work together, and along with other industry participants, to provide input to such activities as the National Transmission Planning Study[62], the Atlantic Offshore Wind Transmission Study[63], and the Interregional Transfer Capability Study[64]. This work will help to inform the JIPC considering other initiatives that have a larger, and even national, scope that might affect future JIPC activities.

5.5 Northeast Power Coordinating Council

The Northeast Power Coordinating Council is one of six regional entities (REs) located throughout the United States, Canada, and portions of Mexico responsible for enhancing and promoting the reliable and efficient operation of the interconnected bulk power system. NERC has authorized NPCC to create regional standards to maintain and enhance the reliability of the international, interconnected BES in northeastern North America. As members of NPCC, NYISO and ISO-NE fully participate in NPCC-coordinated interregional studies with neighboring areas.

NPCC assesses seasonal reliability and, periodically, the reliability of the planned Bulk Power System (BPS). It also evaluates seasonal short- and long-range resource adequacy annually. All studies are well coordinated across neighboring area boundaries and include the development of common databases that can serve as the basis for internal studies by the ISOs/RTOs. ISO-NE and NYISO assessments demonstrate full compliance with NERC and NPCC requirements for meeting resource adequacy and transmission planning criteria and standards.

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[61] More information on the ISO/RTO Council is available at https://isorto.org/.

[62] https://www.energy.gov/gdo/national-transmission-planning-study

[63] https://www.nrel.gov/wind/atlantic-offshore-wind-transmission-study.html

[64] https://www.nerc.com/pa/RAPA/Pages/ITCS.aspx

NPCC activities also include issuing several special reports and updating guidelines and criteria. One project was to update Directory #1 – Design and Operation of the Bulk Power System, which was completed in July 2024.

5.6 Reliability*First*

As one of the six NERC-approved regional entities in North America, Reliability*First* conducts an annual long-term transmission assessment. This satisfies its responsibility to provide a judgment on the ability of the regional transmission system to operate reliably under the expected range of operating conditions over the applicable assessment period. RF fulfills this responsibility by examining work already performed according to the planning processes of PJM, Midcontinent Independent System Operator (MISO), Midwest Reliability Organization (MRO), SERC Reliability Corporation, and Virginia-Carolinas Area (VACAR) and studies performed by the Eastern Interconnection Reliability Assessment Group (ERAG).[65] In addition, RF performs its own long-term transmission assessment in conjunction with affected Transmission Owners, which includes identification, analysis, and projections of trends in transmission adequacy and other industry developments that may have an impact on future electric power system reliability.[66]

[65] Information on the Eastern Interconnection Reliability Assessment Group is available at https://www.rfirst.org/eastern-interconnection-reliability-assessment-group.

[66] More information on ReliabilityFirst is available at https://rfirst.org.

6. Summary and Conclusions

Each ISO/RTO develops individual system reliability plans, economic studies, and interconnection studies mindful of significant interregional impacts. To facilitate interregional coordination and communication among all interested parties, the JIPC and IPSAC were established to implement *the Amended and Restated Northeastern ISO/RTO Planning Coordination Protocol*.

FERC Order No. 1000 affected the coordination of interregional transmission planning, cost allocation, and consideration of public policy requirements. The final rule required all transmission providers to develop further procedures with neighboring regions to provide for the following:

- Sharing information regarding the respective needs of each region and potential solutions to these needs
- Identifying and jointly evaluating interregional transmission facilities that may be more efficient or cost-effective solutions to these regional needs

ISO New England, NYISO, and PJM, with input from their stakeholders and IPSAC, jointly developed and implemented the Amended Planning Protocol and other documents that FERC has determined to comply with the interregional planning principles required by Order No. 1000. The three regions conducted NCSP25 in accordance with these requirements.

Interregional stakeholders, including qualified developers, can participate in regional planning stakeholder processes conducted by ISO-NE, NYISO, and PJM, which identify regional needs and solutions. The interregional planning process provides opportunities for stakeholder review and input to transmission needs and identified solutions that may be more efficient or cost effective than transmission improvements identified in the respective regional plans of PJM, NYISO, and ISO-NE.

IPSAC discussions of system needs and recent projects in ISO-NE, NYISO, and PJM have demonstrated that the ISO/RTOs coordinate with each other on issues that could affect the interregional performance of the overall system (see Section 4). These projects are reliability, economic, and system interconnection projects planned by their respective regions. As of the end of 2025, through JIPC, the ISO/RTOs have not identified the need for new interregional transmission projects that would be more efficient or cost effective in meeting the transmission system needs of multiple regions than proposed regional system improvements.

The ISO/RTOs have successfully implemented the Amended Planning Protocol in 2024 and 2025, which has further improved interregional planning among neighboring areas and will continue to do so as part of regional compliance with Order No. 1000. NCSP25 shows that several tasks related to the interregional planning process have been achieved, including the timely exchange of needed databases and models required to perform planning studies (*see* Section 3.1). The ongoing nature of planning studies allows the ISO/RTOs to effectively align the timing of their interregional planning activities and studies. Interregional studies for resource adequacy, transmission planning, economic performance, and other issues have been well coordinated through the ISO/RTO interregional planning efforts described in this report. Interregional issues, such as the effects of environmental regulations and the development of renewable/intermittent resources, have also been well coordinated through the JIPC, IRC, and EIPC.

The ISO/RTOs' planning activities are closely coordinated with neighboring systems. This NCSP report demonstrates the collaborative efforts undertaken by ISO-NE, NYISO, and PJM for continued interregional planning. Communication among the members of the JIPC has helped address regional needs as well as neighboring system concerns. Input from the IPSAC has provided additional perspectives in addressing current and future challenges, and stakeholder input will continue to provide valuable contributions in future planning cycles.

7. Acronyms

BES	Bulk Electric System (NERC)
BPS	Bulk Power System (NPCC)
BPTF	Bulk Power Transmission Facilities (NYISO)
CO_2	carbon dioxide
CEII	Critical Energy Infrastructure Information
CELT	Capacity, Energy, Loads, and Transmission (CELT Report) (ISO-NE)
CRP	Comprehensive Reliability Plan (NYISO)
CSPP	Comprehensive System Planning Process (NYISO)
DER	distributed energy resource
DOE	US Department of Energy
EGWG	Electric-Gas Working Group (NERC)
EI	Eastern Interconnection
EIPC	Eastern Interconnection Planning Collaborative
EPA	US Environmental Protection Agency
ERAG	Eastern Interconnection Reliability Assessment Group
ERO	Electric Reliability Organization
ESPWG	Electric System Planning Working Group (NYISO)
FERC	Federal Energy Regulatory Commission
HVDC	high-voltage direct-current
IESO	Independent Electric System Operator of Ontario
IPSAC	Interregional Planning Stakeholder Advisory Committee
IRC	ISO/RTO Council
IRPS	Inverter-Based Resource Performance Subcommittee (NERC)
ISO	Independent System Operator
ISO-NE	ISO New England, Inc.
ITC	Interregional Transfer Capability
JIPC	Joint ISO/RTO Planning Committee
kV	kilovolt
LOLE	loss-of-load expectation (analysis)
LTRA	Long Term Reliability Assessment (NERC)
MISO	Midcontinent Independent System Operator
MMWG	Multi-regional Modeling Working Group (ERAG)
MRO	Midwest Reliability Organization
NAT	North American Transmission
NCSP	Northeastern Coordinated System Plan
NEPOOL	New England Power Pool (ISO-NE)
NERC	North American Electric Reliability Corporation
NPCC	Northeast Power Coordinating Council
NREL	National Renewable Energy Lab

NYISO	New York Independent System Operator
NYPA	New York Power Authority
NYSPSC	New York State Public Service Commission
NYSRC	New York State Reliability Council
OATT	Open Access Transmission Tariff
PAC	Planning Advisory Committee (ISO-NE)
PMU	phasor measurement unit
PTO	Participating Transmission Owner (ISO-NE)
PV	photovoltaic
RE	Regional entity
RFC	Reliability*First* Corporation
RNA	Reliability Needs Assessment (NYISO)
ROFR	right-of-first-refusal
RPP	Reliability Planning Process (NYISO)
RSP	Regional System Plan (ISO-NE)
RTEP	Regional Transmission Expansion Plan (PJM)
RTO	Regional Transmission Organization
SERC	SERC Reliability Corporation
SPIDERWG	System Planning Impacts from DER Working Group (NERC)
TEAC	Transmission Expansion Advisory Committee (PJM)
VACAR	Virginia-Carolinas Area