Long-Term Transmission Planning in New England

Energy Systems Integration Group (ESIG)

Monica Gonzalez

ASSISTANT GENERAL COUNSEL – OPERATIONS & PLANNING, ISO NEW ENGLAND

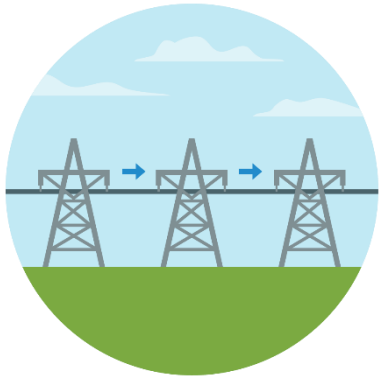
ISO New England (ISO) Has More Than Two Decades of Experience Overseeing the Region's Restructured Electric Power System

- **Regulated** by the Federal Energy Regulatory Commission
- **Reliability Coordinator** for New England under the North American Electric Reliability Corporation
- **Independent** of companies in the marketplace and **neutral** on technology

ISO New England Performs Three Critical Roles to Ensure Reliable Electricity at Competitive Prices

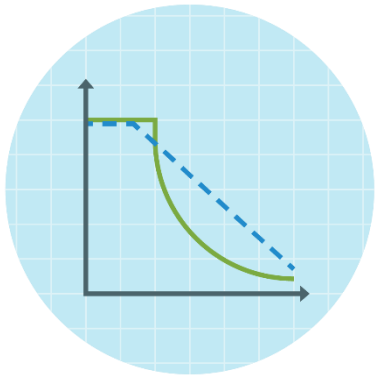
Grid Operation

Coordinate and direct the flow of electricity over the region's high-voltage transmission system



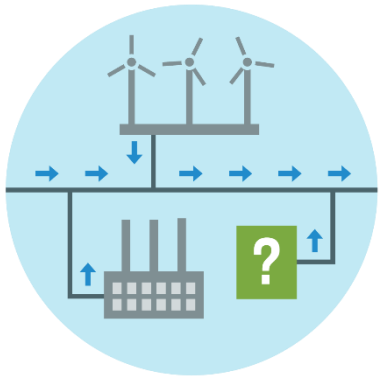
Market Administration

Design, run, and oversee the markets where wholesale electricity is bought and sold



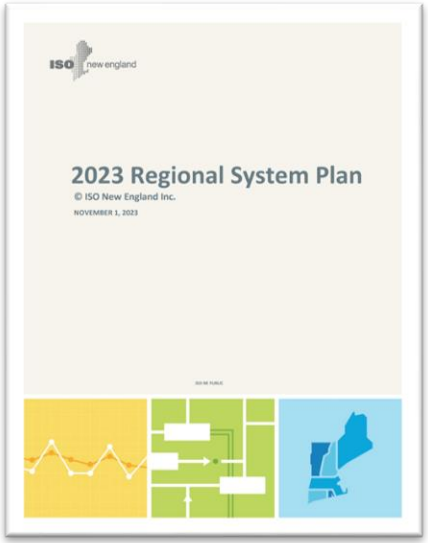
Power System Planning

Study, analyze, and plan to make sure New England's electricity needs will be met over the next 10 years



Overview of Transmission Planning

- As the **Regional Transmission Organization**, the ISO is required to identify transmission infrastructure solutions that are essential for maintaining power system reliability and meeting system efficiency needs in New England
- Through an **open stakeholder process**, the ISO is responsible for the development of long-range plans to address future system needs over the ten-year planning horizon
  - Summarized in a **Regional System Plan (RSP)**
- The transmission planning process is governed by a **FERC-approved tariff**
- ISO-NE continuously revises the transmission planning process to comply with applicable FERC orders (e.g., Orders 890 and 1000) and improve processes to address the region's needs



ISO New England 2023 Regional System Plan

LONGER-TERM TRANSMISSION PLANNING (LTTP)

Longer-Term Transmission Planning Background

- Initiated in response to the 2020 New England States Committee on Electricity (NESCOE) "*New England States' Vision for a Clean, Affordable, and Reliable 21st Century Regional Electric Grid*"
- Among other considerations, this **vision statement**:
  - Identified the need for a longer-term planning process as critical to realizing the transmission needed to meet New England states' clean energy goals
  - Recommended that the ISO implement a state-led, proactive scenario-based planning process for longer-term analysis of state mandates and policies as a routine practice
- In response, **ISO revised the Tariff** to incorporate longer-term planning as a complementary process for the New England states to advance policy-based transmission in two phases

Long-Term Transmission Planning: Phase I

- Approved by FERC in early 2022, **the Phase I** changes allow the states to request the ISO to conduct planning studies **beyond** the traditional **10-year** planning horizon
- Through this process, **NESCOE requests** that the ISO perform a longer-term transmission study (LTTS)
  - NESCOE specifies the state mandates, policies, and goals underlying the request and the study objectives, scenarios, assumptions, and timeframes to be used in the study
  - ISO performs the LTTS using the same open planning process used for other planning studies, and publishes the LTTS results
- The **2050 Transmission Study** is the first example of an LTTS under this process, and offers an unprecedented look at the future of the region's transmission system

Additional information about the 2050 Transmission Study is available on the ISO website, including the Final Report and Fact Sheet

2050 Transmission Study Overview

- The study informs stakeholders of the **amount and type** of **transmission infrastructure** necessary to provide reliable, cost-effective energy to the region through the **clean energy transition**, driven by state policy
  - The study examines the region's transmission needs in order to serve peak loads in 2035, 2040 and 2050
- The **region's aging transmission system** has the potential to become **a significant bottleneck** to progress if it does not keep pace with changes to other elements of the power system
  - Assuming increased build-outs of renewables continue, and electrification of heating and transportation proceeds as expected

Big-picture observations from the study can help inform future decision making

Looking to the Future: LTTP Phase II

- Accepted by FERC in July 2024, Phase II creates a **new process to implement transmission system upgrades** based on longer-term transmission planning studies
  - Provides an avenue for the **states**, through NESCOE, to evaluate and determine cost allocation for **transmission upgrades** needed to ensure a reliable grid throughout the clean energy transition
  - ISO will issue and evaluate requests for proposals (RFPs) to **address needs identified by the states** and provide technical assistance to the states in support of their procurements and efforts to secure federal funding for transmission investments

LTTP Key Elements

- LTTP Phase II changes incorporate the **competitive solicitation process** for transmission solutions to be administered by ISO
- Framework mirrors the existing competitive solicitation process for public policy, **except for in the LTTP process:**
  - NESCOE identifies the needs and whether to pursue a solicitation
  - ISO administers single-phase competitive solicitation for proposals
  - ISO evaluates proposals for viability and financial benefits
  - ISO selects preferred solution if at least one viable solution meets the benefit-to-cost ratio threshold
  - NESCOE reserves the right to terminate the process

LTTP Key Elements, continued

- The changes also establish an ex ante (default) **cost allocation** method for selected transmission facilities that meet the **benefits criteria**:
  - Costs of selected transmission facilities are allocated across all six states based on their respective load ratio share, similar to Regional Benefit Upgrades
  - NESCOE may propose an alternative cost allocation method to be filed with FERC
- Where there is a solution desirable to one or more states, but the benefit-to-cost threshold is not met, the **supplemental process** allows NESCOE to advance the solution, in which case:
  - Costs up to the transmission facility's benefits are allocated across all six states based on its benefit-to-cost ration, and
  - Costs in excess of those benefits are allocated to the state(s) that voluntarily agree to assume them

FERC ORDER 1920

FERC Order No. 1920 Compliance

- Order 1920 **builds on the processes** established in Orders 890 and 1000 to remedy deficiencies, including the absence of a long-term, forward-looking planning process
  - Order 1920 addresses these deficiencies by, among other things, adopting specific requirements addressing how transmission providers must conduct **long-term planning**, and outlining **cost allocation** and **"right sizing" provisions**
- The LTTP and the Order 1920 long-term planning processes align in many ways
  - According to Chairman Phillips, the LTTP supplemental process "goes a long way toward meeting the requirements of Order No. 1920" including "multi-factor planning on at least a 20-year time horizon, an *ex ante* default cost allocation method, the option for states to agree on alternative cost allocation methods…"

Additional information is available on the ISO Order No. 1920 Key Project webpage.

FERC Order No. 1920 Compliance, continued

- The processes **differ significantly** with respect to the **role of the states**, and the scope of the process, including that Order 1920:
  - Places the transmission provider in the decision-making role, with states in a consulting role, and
  - Prescribes the conduct of the process
- The ISO's compliance effort and scope of that work will depend on the extent to which the **LTTP can be leveraged** to meet the requirements, recognizing compliance will be gauged against the Order 1920 requirements

Additional information is available on the ISO Order No. 1920 Key Project webpage.

Developing the Compliance Proposal

- The ISO began **stakeholder discussions** on this Order in Sept. 2024
- Additionally, Order 1920 requires that the ISO establish a one-time six-month time period for **relevant state entities*** to determine a long-term transmission **cost allocation method** to include in the ISO's compliance filing
  - The relevant state entities have been notified and their engagement period runs from September 9, 2024 – March 10, 2025
- Devising a deliberate compliance approach is **challenging** without a solid foundation in place from a settled order
  - FERC has received significant challenges to Order 1920 on rehearing and on appeal, and recent insights from FERC commissioners suggest the possibilities for meaningful updates to the rule on rehearing or appeal

*Relevant state entities are defined in the Order as "any state entity responsible for electric utility regulation or siting electric transmission facilities within the state or portion of the state located in the transmission planning region, including any state entity as may be designated for that purpose by the law of such state."

Questions