# Regional Planning Needs and Solutions

Brent Oberlin

DIRECTOR, TRANSMISSION PLANNING

# Purpose:

## *This presentation provides an update on ISO New England's (ISO-NE) transmission planning evaluations of the New England system*

- Access to Planning Advisory Committee (PAC) materials containing Critical Energy Infrastructure Information (CEII) is required to access some of the ISO's materials on transmission planning. Those stakeholders with CEII access do not require any further action. If you do not have access to ISO's PAC CEII information, please complete the PAC Access Request Form found at:

  https://www.iso-ne.com/static-assets/documents/2015/08/external_pac_ceii_request.pdf

- Completed forms should be mailed to ISO New England Inc., Attention: Customer Support, One Sullivan Road, Holyoke, MA 01040-2841 or emailed (PDF) to: custserv@iso-ne.com

- ***Note: If you have Reliability Committee (RC) CEII access, you still need to apply for PAC CEII access***

- Should you have further questions, kindly contact the ISO Customer Service Department at (413) 540-4220

- The ISO-NE planning process was previously discussed with the IPSAC and a summary appears in the Appendix for stakeholder reference

# Summary of Changes Since December 2017 Update

- Needs Assessment scopes were finalized for the following areas
  - Maine (ME)
  - New Hampshire (NH)
  - Eastern Connecticut (ECT)
  - Southwest Connecticut (SWCT)
- Draft scopes provided for stakeholder review
  - Southeastern Massachusetts/Rhode Island (SEMA/RI)
  - Western and Central Massachusetts (WCMA)
- Scopes incorporated the latest changes in criteria in Planning Procedure 3 (PP3) and reflected the recently adopted probabilistic method for establishing generation unavailability

# Summary of Changes Since December 2017 Update

- At the March and April 2018 PAC meetings, the ISO presented information on the updated load, energy efficiency (EE), and photovoltaic (PV) forecasts
  - These forecasts show a significant reduction in the net load to be served
- At the March PAC meeting, the ISO stated due to the magnitude of the severity of the needs in the Eastern Connecticut (ECT) study area, that study would proceed without adopting the new forecast
- A preliminary review of the impact of the new forecasts and updates to Active Demand Capacity Resources (ADCR) shows potential elimination of some system needs in the areas with ongoing studies (ME, NH, SWCT, SEMA/RI, and WCMA)
- Plans to update assessments and schedules were presented at the April PAC meeting for ME, NH, and SWCT. Plans for SEMA/RI and WCMA are under development.

# Ongoing Reliability Based Studies

- Maine (https://www.iso-ne.com/system-planning/key-study-areas/maine)
  - Final 2027 Needs Assessment Scope of Work report posted in March 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2018/03/final_ceii_2027_maine_na_sow.pdf)
  - Anticipate presenting Needs Assessment results to the PAC in July 2018
    - Adjusted for updated load forecast and updated ADCR information
    - Corrections to generation assumptions
- New Hampshire (https://www.iso-ne.com/system-planning/key-study-areas/vt-nh)
  - Final 2027 Needs Assessment Scope of Work report posted in March 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2018/03/final_ceii_2027_nh_na_sow.pdf)
  - Anticipate presenting Needs Assessment results to the PAC in July 2018
    - Adjusted for updated load forecast and updated ADCR information

# Ongoing Reliability Based Studies

- Eastern Connecticut (https://www.iso-ne.com/system-planning/key-study-areas/eastern-connecticut)
  - Final 2027 Needs Assessment Scope of Work report posted in March 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2018/03/final_ceii_2027_ect_needs_assessment_sow_clean.pdf)
  - 2027 Needs Assessment results presented to the PAC in March 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2018/03/a4_ect_2027_needs_assessment_presentation.pdf)
    - Numerous needs were identified, mostly related to second contingency (N-1-1) testing
  - Update to 2027 Needs Assessment results presented to the PAC in April 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2018/04/a7_ect_2027_needs_assessment_presentation_update.pdf)
    - Corrections to generation assumptions
- Southwest Connecticut (https://www.iso-ne.com/system-planning/key-study-areas/swct)
  - Final 2027 Needs Assessment Scope of Work report posted in March 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2018/03/final_ceii_2027_swct_na_sow_clean.pdf)
  - Anticipate presenting Needs Assessment results to the PAC in June 2018
    - Adjusted for updated load forecast and updated ADCR information

# Ongoing Reliability Based Studies

- Southeastern Massachusetts/Rhode Island (https://www.iso-ne.com/system-planning/key-study-areas/sema-ri)
  - 2027 Needs Assessment Scope of Work presentation discussion at the December 2017 PAC meeting (https://www.iso-ne.com/static-assets/documents/2017/12/a_11_sema_ri_2027_needs_assessment_scope_of_work.pdf)
  - Draft 2027 Needs Assessment Scope of Work report posted in January 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2017/12/draft_ceii_2027_sema_ri_na_sow.pdf)
  - The plan to update this study is under development
- Western and Central Massachusetts (https://www.iso-ne.com/system-planning/key-study-areas/western-and-central-massachusetts/)
  - 2027 Needs Assessment Scope of Work presentation discussion at the January 2018 PAC meeting (https://www.iso-ne.com/static-assets/documents/2018/01/a3_western_central_mass_2027_needs_assessment_scope_of_work.pdf)
  - Draft 2027 Needs Assessment Scope of Work report posted in February 2018 (https://smd.iso-ne.com/operations-services/ceii/pac/2018/02/draft_ceii_2027_wcma_na_show_of_work_report.pdf)
  - The plan to update this study is under development

# Market Efficiency and Public Policy Based Transmission

- No changes since December 2017

# Regional System Plan Project List and Asset Condition List Update

- Updates were provided in March 2018
- Updates to the Regional System Plan (RSP) Project List were minimal
  - Descriptions of changes in cost
  - No new projects added
  - Most updates driven by ongoing projects that were placed in service
- Updates to the Asset Condition List were substantial
  - 36 new projects added to the list, with most being related to structure replacements
  - Total cost of additions is approximately $550M
- March 2018 Final RSP Project List and Asset Condition List update
  - Final PAC presentation: (https://www.iso-ne.com/static-assets/documents/2018/03/final_rsp18_project_list_presentation_march.pdf)
  - Final Project List: (https://www.iso-ne.com/static-assets/documents/2018/03/final_rsp18_project_list_march_2018.xls)
  - Final Asset Condition List: (https://www.iso-ne.com/static-assets/documents/2018/03/final_rsp18_asset_condition_list_march_2018.xls)
- Next update is scheduled to be provided to PAC in June

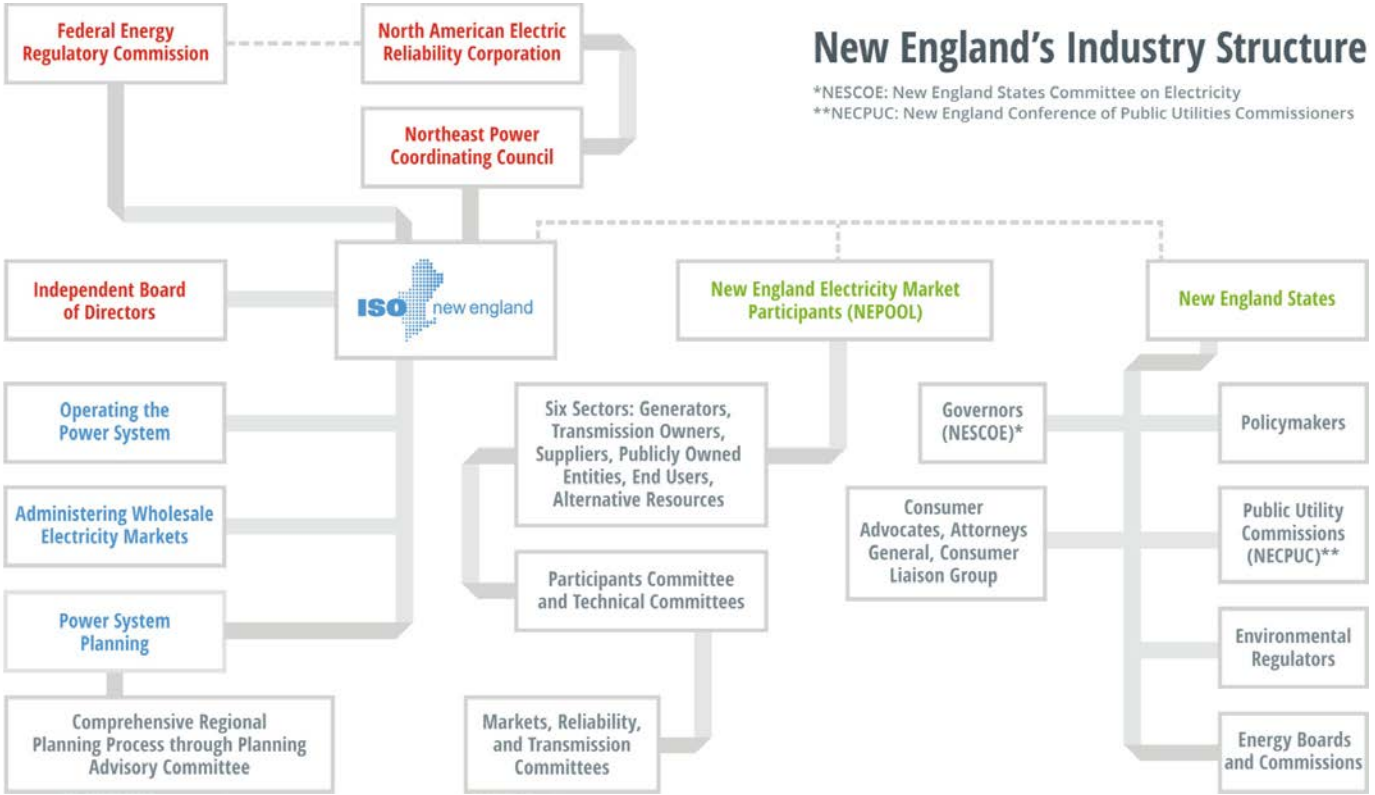
# Regional System Plan 2017 (RSP17)

- As a reference, please see the Regional System Plan (RSP17), the biennial report that provides the foundation for long-term power-system planning in New England
  - https://www.iso-ne.com/system-planning/system-plans-studies/rsp
- RSP17 details power system needs for the next 10 years, through 2026, and how these needs can be addressed
  - Forecasts of annual energy use and peak demand from 2017 to 2026
  - Strategic issues facing the region, including the integration of variable energy resources, such as wind generation and solar photovoltaic (PV) installations, resource retirements and additions, and fuel security risks
  - The need for resources, including generators and demand-side resources, to meet consumer demand for power and replace retiring power plants
  - How the region's power system can continue to address reliability concerns by identifying areas of the grid where resource additions or transmission upgrades are needed
  - Coordination of New England's planning process with those of neighboring regions

# Questions

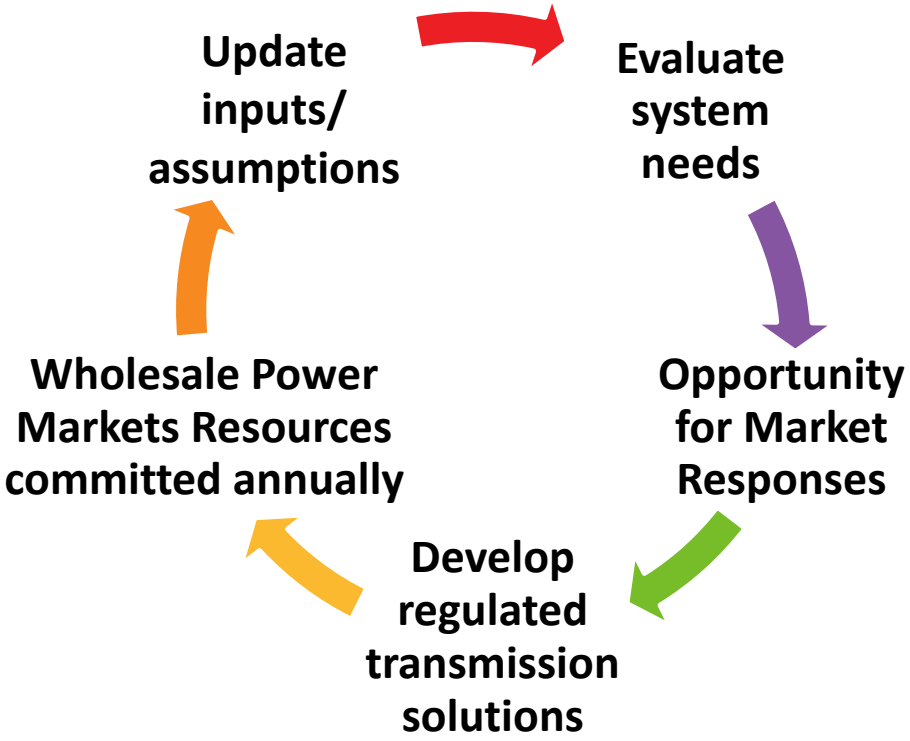
# APPENDIX

# Numerous Entities Including an Independent Board Provide Oversight of and Input on ISO's Responsibilities



# New England's System Planning Process Continuous, Adaptive and Successful

- Open and transparent 10-year planning horizon reflects:
  - Update inputs/assumptions
  - Evaluate system needs
  - Market responses
  - Timing of future resource needs
- Provide information to marketplace and stakeholders
- Coordinate with neighboring areas



# Reliability Planning Process

- Needs Assessments evaluate the adequacy of the transmission system over a 10-year planning horizon
  - Incorporate resources (generation and demand response) that have a firm commitment to perform, typically receiving an obligation through the Forward Capacity Market
  - Incorporate energy efficiency and photovoltaic forecasts
- ISO New England utilizes a continuous planning process
  - No fixed schedule
  - Allows for the incorporation of assumption changes “on-the-fly” rather than waiting for the next cycle
  - Ensures that solutions are not under or over-built
- Solutions Development
  - Identification of needs to be addressed through the Solutions Study process or the Open Competitive Process (as per Attachment K)
    - If the requirements of Attachment K Section 4.1(j), including a year of need 3 years or less from the completion of the needs assessment, have been met then the Solutions Study process is used for solution development
    - If the year of need is greater than 3 years from the completion of the Needs Assessment, the competitive process is used for solution development