

# Regional Planning Needs and Solutions

---

*IPSAC WebEx*



**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](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](mailto: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 the December 2018 Update

- At the March 2019 PAC meeting, the ISO presented information on the draft updates to the load, energy efficiency (EE), and photovoltaic (PV) forecasts ([https://www.iso-ne.com/static-assets/documents/2019/03/a4\\_draft\\_2019\\_isone\\_annual\\_energy\\_and\\_summer\\_peak\\_forecast.pdf](https://www.iso-ne.com/static-assets/documents/2019/03/a4_draft_2019_isone_annual_energy_and_summer_peak_forecast.pdf))
  - These forecasts show a significant reduction in the net load to be served
- Based on the draft forecast information, the ISO performed a rough screening analysis of Eastern Connecticut which showed the potential elimination system needs, possibly eliminating \$20M in upgrades
- Additionally, Forward Capacity Auction 13 occurred in early February
  - Notable changes in resources:
    - Killingly Energy Center (~632 MW, located in CT) received a Capacity Supply Obligation (CSO)
  - As a result of the Substitution Auction:
    - Pawtucket Power (~54 MW, located in RI) will be retiring
    - Vineyard Wind received an obligation for ~54 MW
  - Schiller 4 (~48 MW, located in NH) and Yarmouth 1 and 2 (~50 MW each, located in ME) de-listed for the second year in a row
    - As described in the Transmission Planning Technical Guide, if a resource has de-listed in the two most recent Forward Capacity Auctions, the ISO will consider the resource unavailable for dispatch when performing a Needs Assessment
      - If a resource does not operate for 3 calendar years in a row, the resource is deemed to be retired
- At the March 2019 PAC meeting, the ISO presented its plan for updating ongoing Needs Assessments and solutions development across the region discussed on the following slide (<https://www.iso-ne.com/static-assets/documents/2019/03/a6 Updating needs assessment to reflect latest assumptions.pdf>)
- At the April 2019 PAC meeting, the ISO:
  - Announced that it would be reducing its standard review period for Needs Assessments and solutions studies from 30 days to 15 days
  - Reminded everyone to submit their Qualified Transmission Project Sponsors (QTPS) application if they plan on participating in future Requests for Proposals (RFP) for competitive transmission

# Updating Area Study Plans

- **Boston**
  - Changes from the original scope were described when the results of the Needs Assessment were presented at the April 2019 PAC meeting
  - Time sensitive-needs, needed in 3 years or less, were found under minimum load conditions. These will be solved through the Solutions Study process.
  - Based on the results of the Boston Needs Assessment to date, ISO plans to release its first request for proposal (RFP) for a competitively developed transmission solution in late 2019 or early 2020
- **Western and Central MA**
  - Changes to the scope from what was presented in September 2018 will be included in the draft written scope, expected to be released in May
- **Eastern CT**
  - The Needs Assessment will be updated. A presentation describing the changes in assumptions compared to the May 2018 Needs Assessment were discussed at the April 2019 PAC meeting
- **Southwest CT**
  - No update is needed. Solution development is on hold awaiting the details on the solution to the Glenbrook STATCOM asset condition issues
- **Southeastern MA/RI**
  - Scope of work will be updated once further details about queued resources which have begun their system impact studies is known. This will include review of previously identified minimum load concerns
- **New Hampshire**
  - The Needs Assessment will be updated. A presentation describing the changes in assumptions compared to the May 2018 Needs Assessment is tentatively scheduled for the May 2019 PAC meeting
- **Maine**
  - The Needs Assessment will be updated. A presentation describing the changes in assumptions compared to the May 2018 Needs Assessment is tentatively scheduled for the June 2019 PAC meeting

# Ongoing Reliability Based Studies

- Maine
  - <https://www.iso-ne.com/system-planning/key-study-areas/maine>
  - 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](https://smd.iso-ne.com/operations-services/ceii/pac/2018/03/final_ceii_2027_maine_na_sow.pdf))
- New Hampshire
  - <https://www.iso-ne.com/system-planning/key-study-areas/vt-nh>
  - Needs Assessment Presentation Revision 1 posted in November 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/11/final\\_ceii\\_new\\_hampshire\\_2027\\_needs\\_assessment.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/11/final_ceii_new_hampshire_2027_needs_assessment.pdf))
  - Final 2027 Needs Assessment posted in November 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/11/final\\_ceii\\_new\\_hampshire\\_2027\\_needs\\_assessment.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/11/final_ceii_new_hampshire_2027_needs_assessment.pdf))
  - Final 2027 Needs Assessment Scope of Work Revision 1 report posted in May 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/05/final\\_ceii\\_2027\\_nh\\_na\\_sow\\_rev1\\_clean.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/05/final_ceii_2027_nh_na_sow_rev1_clean.pdf))

# Ongoing Reliability Based Studies

- Eastern Connecticut
  - <https://www.iso-ne.com/system-planning/key-study-areas/eastern-connecticut>
  - Discussion of changes in Needs Assessment Assumptions ([https://www.iso-ne.com/static-assets/documents/2019/04/a9\\_eastern\\_connecticut\\_2029\\_needs\\_assessment\\_scope\\_details.pdf](https://www.iso-ne.com/static-assets/documents/2019/04/a9_eastern_connecticut_2029_needs_assessment_scope_details.pdf))
  - 2027 Solutions study update presentation discussed with the PAC in September 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/09/a7\\_ect\\_2027\\_solutions\\_study\\_update.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/09/a7_ect_2027_solutions_study_update.pdf))
  - Final 2027 Needs Assessment posted in May 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/05/final\\_ceii\\_ect\\_2027\\_na.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/05/final_ceii_ect_2027_na.pdf))
- Southwest Connecticut
  - <https://www.iso-ne.com/system-planning/key-study-areas/swct>
  - Final 2027 Needs Assessment posted in July 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/07/final\\_ceii\\_swct\\_2027\\_na.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/07/final_ceii_swct_2027_na.pdf))
  - 2027 Needs Assessment results discussed with the PAC in June 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/06/a2\\_swct\\_2027\\_na\\_presentation.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/06/a2_swct_2027_na_presentation.pdf))

# Ongoing Reliability Based Studies

- Boston
  - <https://www.iso-ne.com/system-planning/key-study-areas/greater-boston/>
  - Needs Assessment results presentation discussion at the April 2019 PAC meeting ([https://smd.iso-ne.com/operations-services/ceii/pac/2019/04/a6\\_boston\\_2028\\_needs\\_assessment\\_update\\_and\\_results.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2019/04/a6_boston_2028_needs_assessment_update_and_results.pdf))
  - 2028 Needs Assessment Scope of Work report posted in March 2019 ([https://smd.iso-ne.com/operations-services/ceii/pac/2019/03/final\\_ceii\\_boston\\_2028\\_na\\_sow.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2019/03/final_ceii_boston_2028_na_sow.pdf))
  - Draft 2028 Needs Assessment Scope of Work report posted in December 2018 ([https://smd.iso-ne.com/operations-services/ceii/pac/2018/12/draft\\_ceii\\_boston\\_2028\\_na\\_sow.pdf](https://smd.iso-ne.com/operations-services/ceii/pac/2018/12/draft_ceii_boston_2028_na_sow.pdf))
  - 2028 Needs Assessment Scope of Work presentation discussion at the September 2018 PAC meeting ([https://www.iso-ne.com/static-assets/documents/2018/09/a10\\_boston\\_2028\\_needs\\_assessment\\_scope\\_of\\_work\\_rev1.pdf](https://www.iso-ne.com/static-assets/documents/2018/09/a10_boston_2028_needs_assessment_scope_of_work_rev1.pdf))
- Southeastern Massachusetts/Rhode Island
  - <https://www.iso-ne.com/system-planning/key-study-areas/sema-ri>
  - 2028 Needs Assessment Scope of Work presentation discussion at the November 2018 PAC meeting ([https://www.iso-ne.com/static-assets/documents/2018/11/a3\\_sema\\_ri\\_2028\\_needs\\_assessment\\_scope\\_of\\_work.pdf](https://www.iso-ne.com/static-assets/documents/2018/11/a3_sema_ri_2028_needs_assessment_scope_of_work.pdf))
- Western and Central Massachusetts
  - <https://www.iso-ne.com/system-planning/key-study-areas/western-and-central-massachusetts/>
  - 2028 Needs Assessment Scope of Work presentation discussion at September 2018 PAC meeting ([https://www.iso-ne.com/static-assets/documents/2018/09/a11\\_wcma\\_2028\\_needs\\_assessment\\_scope\\_of\\_work\\_rev1.pdf](https://www.iso-ne.com/static-assets/documents/2018/09/a11_wcma_2028_needs_assessment_scope_of_work_rev1.pdf))

# Market Efficiency and Public Policy Based Transmission

- No changes since December 2018 IPSAC
- Expect to reinitiate the Public Policy process in January 2020





# Regional System Plan Project List and Asset Condition List Update

- Updates were provided in March 2019
  - Updates to the Regional System Plan (RSP) Project List were minimal
    - Descriptions of change in cost
    - No new projects added
    - Updates driven by ongoing projects that were placed in service
      - The final components of both the Maine Power Reliability Program and the Connecticut River Valley Project were placed in service
  - Updates to the Asset Condition List were significant
    - 51 new projects added to the list, mostly structure replacement projects, with an approximate cost of \$660M
    - 32 projects placed in service
  - Final RSP Project List and Asset Condition List update
    - Final PAC presentation: ([https://www.iso-ne.com/static-assets/documents/2019/04/final\\_rsp19\\_project\\_list\\_presentation\\_march\\_2019.pdf](https://www.iso-ne.com/static-assets/documents/2019/04/final_rsp19_project_list_presentation_march_2019.pdf))
    - Final Project List: ([https://www.iso-ne.com/static-assets/documents/2019/04/final\\_rsp19\\_project\\_list\\_march\\_2019.xls](https://www.iso-ne.com/static-assets/documents/2019/04/final_rsp19_project_list_march_2019.xls))
    - Final Asset Condition List: ([https://www.iso-ne.com/static-assets/documents/2019/04/final\\_rsp19\\_asset\\_condition\\_list\\_march\\_2019.xls](https://www.iso-ne.com/static-assets/documents/2019/04/final_rsp19_asset_condition_list_march_2019.xls))
- Next updates are scheduled to be provided to PAC in June and October 2019

# Regional System Plan 2019 (RSP19)

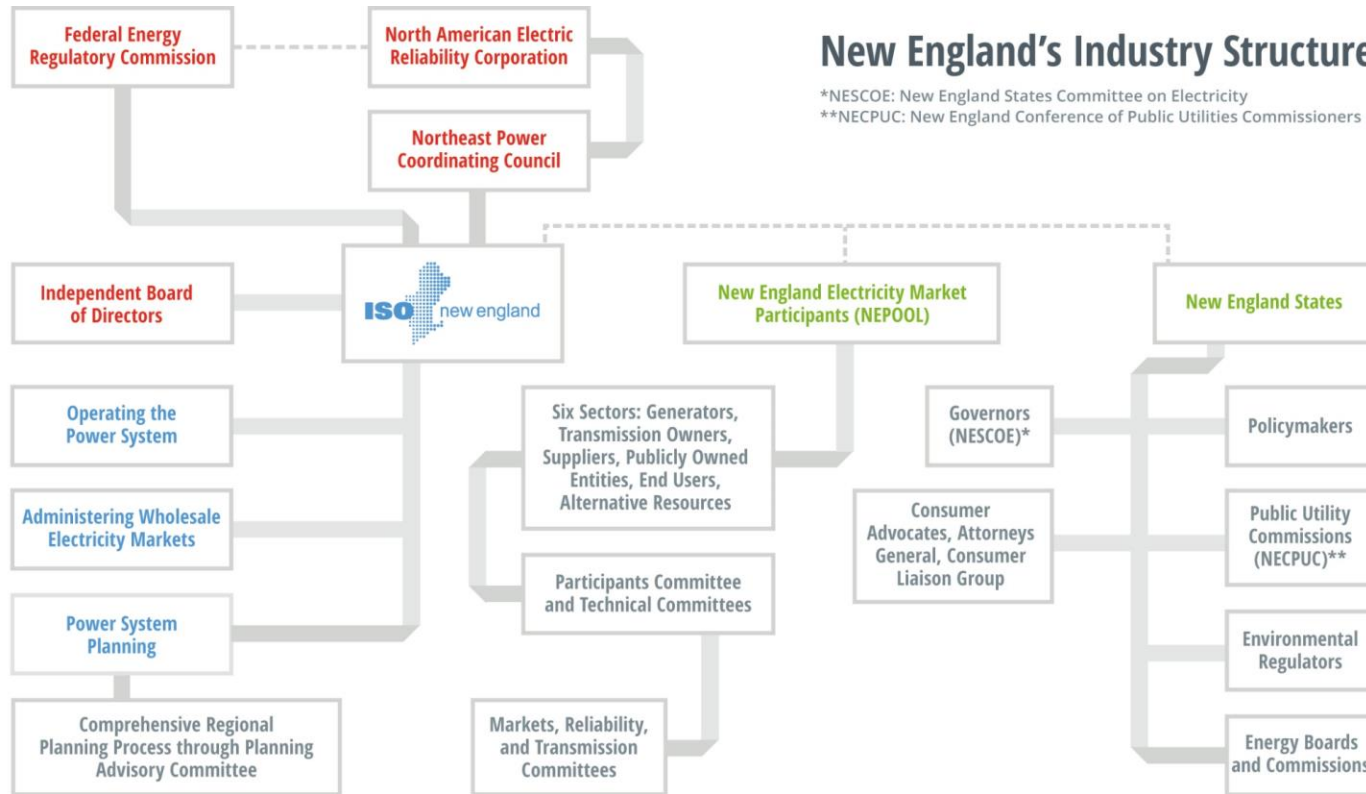
- As a reference, please see the Regional System Plan 2017 (RSP17), the biennial report that provides the foundation for long-term power-system planning in New England (RSP19 is scheduled for publication fall 2019)
  - <https://www.iso-ne.com/system-planning/system-plans-studies/rsp>
- RSP19 will detail power system needs for the next 10 years, through 2028, and how these needs can be addressed
  - Forecasts of annual energy use and peak demand from 2019 to 2028
  - 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 energy 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
- RSP19 development has already begun
  - Scope of work presented at the February 2019 PAC meeting ([https://www.iso-ne.com/static-assets/documents/2019/02/a6\\_rsp19\\_scope\\_of\\_work.pptx](https://www.iso-ne.com/static-assets/documents/2019/02/a6_rsp19_scope_of_work.pptx))
  - Stakeholder input sought at PAC meetings (<https://www.iso-ne.com/committees/planning/planning-advisory/>)

# Questions



# APPENDIX

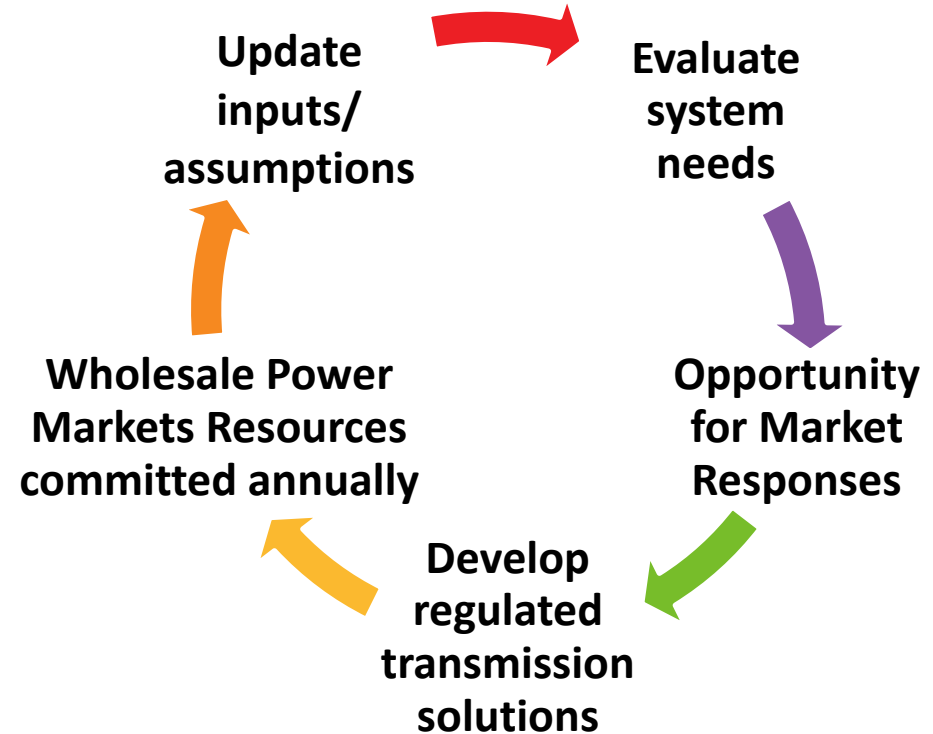
# Numerous Entities Including an Independent Board Provide Oversight of and Input on ISO's Responsibilities



# 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

# Public Policy Process

- At least every 3 years, the ISO issues a Public Notice indicating input on state and federal Public Policy Requirements (PPR) can be submitted to the New England States Committee on Electricity (NESCOE) and local (e.g. municipal and county) PPRs can be submitted to the ISO
- NESCOE may provide a communication to the ISO regarding Public Policy Requirements
- Specification of the federal, state and local PPRs, if any, that will be addressed in a Public Policy Transmission Study (PPTS). Federal and state PPRs will be specified by NESCOE and, if required, by ISO. Local PPRs will be specified by ISO
- ISO performance of an initial phase of the PPTS and, if determined by ISO, a follow-on phase of the PPTS with opportunity for PAC to comment
- If a Public Policy Transmission Upgrade will be pursued, the solution will be developed through the Open Competitive Process



# Helpful References

- The Transmission Planning Process guide outlines the steps in the regional transmission planning process (<https://www.iso-ne.com/system-planning/transmission-planning/transmission-planning-guides/>)
- The Transmission Planning Technical Guide documents several of the assumptions used in transmission planning studies ([https://www.iso-ne.com/system-planning/transmission-planning-guides/](https://www.iso-ne.com/system-planning/transmission-planning/transmission-planning-guides/))
- Attachment K to the ISO New England Open Access Transmission Tariff describes the Regional System Planning Process (<https://www.iso-ne.com/participate/rules-procedures/tariff/oatt>)