CLEAN ENERGY TRANSMISSION WORKING GROUP (CETWG)

MEETING MINUTES

Friday, July 28, 2023
Virtual Zoom Meeting

Members Present:	Jason Marshall, Jamie Van Nostrand, Kelly Caiazzo, Michael J. Barrett, Jeffrey N. Roy, Brooke M Thomson, Doug Howgate, Hilary Pearson, Johannes Pfeifenberger, Liz Delaney, Sheila Keane, Barry Ahern, Dave Burnham
Members Absent:	Dave Burnham left the meeting at approximately 10:30 AM
ISO-NE Staff Present:	Eric Johnson, Brent Oberlin, Marissa Ribeiro Dahan
DOER Staff Present:	Paul Holloway, Sarah McDaniel, Mary Nuara, Joanna Troy
DPU Staff Present:	Shirley Barosy, John Slocum, Gregg Wade
Other Participants:	Kate Kelly and Jonathan Torcia (Massachusetts Governor's Office, Boards and Commissions), Abigail Kuhn (Senator Barrett's Office)

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1. Call to Order

Jason Marshall and James Van Nostrand, serving as co-Chairpersons, called the meeting to order at 09:04 AM. With staff assistance, Marshall conducted attendance confirmed a meeting quorum.

2. Welcome and Agenda

Marshall expressed his appreciation to staff, members, and Commissioner Mahoney. Van Nostrand seconded his appreciation.

3. Introduction to the CETWG

Swearing In (slide 3)
Kelly and Torcia appeared virtually to swear in the CETWG. Torcia explained the swearing in process and noted that members are subject to the Commonwealth's conflict of interest policy.
Barrett asked if legislators needed to be sworn in. Kelly responded no.
Torcia asked the following members to raise her or his hand, repeat, and swear to the oath:

Brooke M Thomson, Doug Howgate, Hilary Pearson. Johannes Pfeifenberger. Liz Delaney, Sheila Keane, Barry Ahern, Dave Burnham

Attendance, and Member Introductions (slide 4)
Van Nostrand asked members to introduce themselves.

Jason Marshall, Deputy Secretary and Special Counsel for Federal and Regional Energy Affairs, Massachusetts Executive Office of Energy and Environmental Affairs

James Van Nostrand, Chair, Massachusetts Department of Public Utilities

Kelly Caiazzo, Assistant Attorney General, Massachusetts Office of the Attorney General

Michael J. Barrett, Co-Chair of the Joint Committee on Telecommunications, Utilities and Energy
Barrett stated he was honored to form the CETWG and was pleased to participate in the meetings.

Jeffrey N. Roy, Co-Chair of the Joint Committee on Telecommunications, Utilities and Energy
Roy stated he was honored to form the CETWG and was looking forward to participating in the meetings.

Brooke M Thomson, President, Associated Industries of Massachusetts, Inc.

Doug Howgate, President, Massachusetts Taxpayers Foundation, Inc.
Howgate stated he was pleased to participate in the meetings.

Hilary Pearson, President, LineVision, representing the Northeast Clean Energy Council

Johannes Pfeifenberger, Principal, Brattle Group, representing or consulting to the offshore wind industry
Pfeifenberger stated that his practice focused on transmission

Liz Delaney, Vice President, New Leaf Energy, representing or consulting to the solar energy industry

Sheila Keane, Director of Analysis, New England States Committee on Electricity, Economist with knowledge of electricity transmission, distribution, generation and power supply
Keane stated she was pleased to participate in the meetings.

Barry Ahern, Director of Transmission Planning, National Grid, representing investor-owned utilities in the Commonwealth

Dave Burnham, Director of Transmission Policy, Eversource, representing investor-owned utilities in the Commonwealth

4. CETWG Origin and Legislative Responsibilities (slides 5-6)

Marshall stated that expansion of the local and regional transmission grid is a key enabler of the Commonwealth's clean energy transition. He noted that the references to the Massachusetts Clean Energy and Climate Plan for 2025 and 2030 on slide 5 are illustrative rather than exhaustive. Marshall stated that he understands the CETWG's legislative mandate is to assess the transmission we need to transition to a clean energy grid and to consider what statutory and regulatory tools are needed to support transmission development.

Van Nostrand reviewed the CETWG's scope and objectives (slide 6) and emphasized the importance of addressing cost allocation. He asked the legislators to shed light on the requirement for the CETWG to "include a cost-benefit analysis to identify regulatory and legal challenges associated with obtaining and streamlining tariff approvals to accommodate increased clean energy

penetration across New England". Barrett replied that this requirement was contributed by the House and accepted by the Senate. Roy stated that he will discuss this issue at the next CETWG meeting.

5. Governing Document Review

By-laws
Van Nostrand introduced the draft By-laws (slide 8).

CETWG Discussion and Vote
There was no discussion of the draft By-laws.
Barrett motioned to approve the draft By-laws. Thomson seconded. By voice vote, all members were in favor, with none opposed or abstaining.

Remote Participation Policy (slide 9)
Marshall introduced the draft Remote Participation Policy. He stated that adoption does not lock the CETWG into holding virtual meetings; the CETWG may determine future meeting format.

CETWG Discussion and Vote
There was no discussion of the draft Remote Participation Policy.
Howgate motioned to approve the draft Remote Participation Policy. Thomson seconded. By voice vote, all members were in favor, with none opposed or abstaining.

Future Meeting Times (slide 10).
Marshall asked staff to poll members soliciting their schedule preferences for next few meetings.

CETWG Discussion
Hillary asked about the frequency of meetings. Marshall recommended the CETWG meet every three to four weeks and asked the members to discuss this at the next meeting. Barrett stated that the schedule should be guided by the timing to prepare a report to the Legislature. Marshall noted that the CETWG must deliver a report to the legislature by December 31, 2023. Van Nostrand stated that the future agenda topics slide (slide 11) includes proposed meeting topics or modules that are intended to align with the CETWG's scope and objectives.
Thomson asked that the members confirm the schedule of meetings as soon as possible.

6. Future Agenda Topics

Marshall introduced a set of proposed future topics or modules (slide 11). He observed that there was significant overlap between the scope of the CETWG and the ISO New England (ISO-NE) 2050 transmission study (2050 study), scheduled for completion later this year. He proposed that the 2050 study be the primary discussion item for the next CETWG meeting.

Discussion
Barrett thanked staff for preparing the proposed modules. He asked the members to consider how best to leverage other parallel processes at the state and federal level to maximize the potential value of the CETWG's efforts. Marshall replied that this consideration helped inform the proposed modules, and in particular his focus on the 2050 study which he characterized as a comprehensive analysis of the future regional transmission system. Barrett

asked for further details on this module. Marshall replied that he will work with Van Nostrand and staff to develop it further. Marshall also stated that at this time the co-Chairs have not identified future presentations or presenters.
Pfeifenberger stated that bringing new clean energy to the grid requires a broad examination of all transmission issues, including generator interconnection, but ISO-NE's tariff separates transmission planning from interconnection. He suggested the CETWG adopt a broader lens beyond transmission planning and he highlighted FERC's recent interconnection order (Order 2023) as an appropriate topic for exploration.
Delaney supported Pfeifenberger's position and recommended the CETWG not narrowly focus on offshore wind interconnection but include terrestrial resource interconnection issues, (*e.g.*, solar and storage).
Burnham noted that Order 2023 is very recent and supported a focus on emerging interconnection rules and processes.
Pfeifenberger noted that Order 2023 has implications for cost allocation (*e.g.*, potential changes to participant funding). He asked why interconnection was paired with the offshore wind module and advocated again for a broader treatment of interconnection issues.
Marshall thanked members for their feedback, noted that ISO-NE would provide some material on generator interconnection today, and agreed to consider a separate module on interconnection and Order 2023. Marshall stated that he sees these issues as inter-related and doesn't view the modules in silos.
Roy stated that this discussion is just what legislature wanted when it established the CETWG. He sees value in gathering all perspectives and expertise in one place to ensure that policy makers are appropriately informed on the need for transmission to support the clean energy transition. Roy expressed support for examining the 2050 study.
Van Nostrand appreciated the perspectives and helpful guidance from the members. He expressed an interest in addressing Order 2023.
Members appeared to support addressing the 2050 study at the next CETWG meeting.

7. Introduction to New England Transmission Planning (slide 12)

Marshall introduced Brent Oberlin, Director of Transmission Planning with ISO-NE, to provide an introduction to transmission planning in New England. Marshall also expressed his appreciation of ISO-NE's efforts to maintain regional electric system reliability during the hot summer months.

Oberlin briefly reviewed his responsibilities with ISO-NE and then presented a high-level overview of transmission system planning at ISO-NE. The presentation and member discussion focused on the following topics.

System Planning
Oberlin explained that Attachment K to the ISO-NE Open Access Transmission Tariff describes ISO-NE's system planning process. He focused on several transmission-related elements of this process, including needs assessments and solutions studies, the Planning Advisory Committee (PAC), and the Regional System Plan (RSP). Oberlin explained that transmission planning encompasses transmission reliability, public policy driven transmission needs, and inter-regional planning. He highlighted that FERC recently approved a tariff change allowing ISO-NE to implement a longer-term transmission planning process but pointed to a need for further tariff changes to enable the selection and development of projects identified through this process.

Marshall asked whether ISO-NE's needs assessments only addressed reliability and public policy needs. Oberlin explained that the tariff also provides for market efficiency needs assessments *(i.e.*, a transmission solution that costs less than the economic benefit derived from it), but ISO-NE has identified very few market efficiency needs.
Barrett asked how transmission planning accommodates climate objectives beyond reliability and whether ISO-NE has a mandate to consider carbon emission reductions on par with reliability.
Oberlin responded that the recently-adopted longer-term transmission planning process provides for a planning horizon beyond the ten years historically used in needs assessments and is specifically designed to consider the impact of state policy goals on future demand and the resource mix, (*e.g.*, the 2050 study shows a near doubling of demand in response to state electrification policies).
Barrett asked who adopts ISO-NE's tariff. Oberlin explained that the Federal Energy Regulatory Commission (FERC) has jurisdiction over ISO-NE's tariff. FERC can both order ISO-NE to make tariff changes and approve changes that ISO-NE or other stakeholders bring to FERC for review. Oberlin explained that ISO-NE works through a stakeholder process to develop proposed tariff changes.
Van Nostrand asked how the stakeholder process addresses state policies.
Marshall responded that the PAC is open to all stakeholders, including the public, and allows for review of regional transmission planning issues. He noted that the New England States Committee on Electricity (NESCOE), a not-for-profit entity that represents the views of the six New England states in regional electricity matters, is an active participant in the PAC. Marshall cited the 2050 study as good example of when states, through NESCOE, asked ISO-NE to reform its planning process to better reflect state policies and laws. In response, ISO proposed tariff changes to add the longer-term transmission planning process and filed the tariff changes with FERC.
Oberlin concluded this topic by describing the RSP. The RSP is a comprehensive report on system needs and transmission facilities needed to maintain regional power system reliability over a ten-year horizon. The RSP lists all projects proposed to address identified transmission needs and tracks the development status of each project. ISO-NE produces and posts the RSP every two years.
Barrett expressed his appreciation for this overview.

Asset Condition
Oberlin explained that ISO-NE operates, but participating transmission owners (PTOs) own the regional transmission facilities. The PTOs are obligated to build, maintain, and replace their assets to ensure ISO-NE can operate them reliably. Oberlin stated that New England's transmission system is aging and ISO-NE has seen an increase in PTO requests to upgrade or replace old equipment, known as asset condition projects. He explained that asset condition is a PTO responsibility separate from ISO-NE's needs assessment. The PTOs control the asset condition process including field inspection and engineering, and they maintain a separate asset condition project list separate from ISO-NE's RSP. Oberlin observed that NESCOE and other stakeholders are paying increased attention to the increased pace and rising costs of asset condition projects.

Reliability Standards
Oberlin explained that ISO-NE must comply with system reliability standards established by the North American Electric Reliability Corporation (NERC) and the Northeast Power Coordinating Council (NPCC). NERC's mission is to assure the effective and efficient reduction of risks to the reliability and security of the North American power grid. NPCC is one of six NERC regional entities and is responsible for promoting and enhancing the reliability of the interconnected bulk power system in Northeastern North America. Oberlin stated that ISO-NE also develops standards for the ISO-NE control area.

Marshall asked Oberlin how ISO-NE applies reliability standards. Oberlin pointed to the needs assessments process where ISO-NE prepares a ten-year forecast of electricity demand and supply and applies the reliability standards to assess its ability to reliably operate the New England grid. If ISO-NE determines it will not be able to operate the system in compliance with the reliability standards it will develop potential solutions and bring them to the PAC for review and approval. For example, Oberlin explained that load growth over the ten-year planning horizon could trigger a reliability standard violation requiring a solution.
Barrett asked if NERC and NPCC were public or private self-regulating entities. Oberlin explained that NERC and NPCC are not-for-profit corporations subject to FERC oversight. FERC can independently identify reliability needs and direct NERC and NPCC to address them.
Barrett asked about participation in NERC and NPCC. Oberlin responded that bulk power facility owners and regional transmission operators in the United States and Canada participate in NERC and NPCC. NERC has its own independent Board of Trustees. Eric Johnson, Director, External Affairs with ISO-NE, stated that ISO-NE could provide additional information on NERC and NPCC.

Resource Adequacy
Oberlin explained that resource adequacy involves ISO-NE estimating the amount and location of resources needed to operate the system reliably each year' known as the installed capacity requirement (ICR). He stated that estimating ICR is becoming increasingly challenging with electrification of heating and transportation end uses and the growth of behind the meter (BTM) generation and distributed energy resources (DERs).
Barrett asked Oberlin about ISO-NE's behind the meter (BTM) forecasts, noting objections that ISO-NE's forecasts don't adequately reflect BTM resources. Oberlin responded that since 2014 ISO-NE has forecast energy efficiency (EE) and BTM solar generation. Oberlin observed that modeling EE is particularly tricky because it is an estimate of energy not used/metered, but benchmarking analysis demonstrates that ISO-NE's forecasts have become quite accurate. Oberlin stated that historically ISO's BTM solar forecast have been low, but ISO-NE is catching up to the state of the art.

Load Forecasting
Oberlin addressed several issues impacting future load forecasts, including electrification as a driver of future winter load growth, heavy duty electric vehicle charging, the impact of EE and BTM solar on net load, and the emergence of a daytime minimum load.
Barrett asked about the implications of these developments. Oberlin replied that these are relatively new issues for ISO-NE and present challenges for system dispatching, in particular ensuring ISO-NE has sufficient ramping resources available to meet rapidly changing net load conditions. Oberlin cited several potential implications for future system operations, including change to traditional nuclear dispatch, greater dispatch and curtailment of wind and DERs, and the potential need for additional transmission investments.
Pfeifenberger asked whether ISO-NE consulted with other system operators that are addressing these same issues, pointing to California and other areas that are already managing negative minimum load. Oberlin confirmed that ISO-NE was talking with California, Hawaii, and Australia.

Interconnection
Oberlin reviewed the ISO-NE generation interconnection process. He noted that historically ISO-NE has seen a high interconnection queue dropout rate that creates significant study churn and long study timeframes but expressed optimism that Order 2023 will improve this process.
Barrett stated that there is a perception that interconnection delays are caused by utilities, but asked Oberlin whether delays are a result of ISO-NE's interconnection process. Oberlin responded that it

was difficult to assign blame for delays, because interconnecting new resources involves many steps and entities, (*e.g.*, siting and permitting). He noted that interconnection times average about 15 months under ISO-NE's current process, but as resource entry and the interconnection queue expands, pressure on the process continues to intensify.
Barrett asked for a briefing on Order 2023 in the future.
Pfeifenberger stated that proactive transmission planning has reduced interconnection uncertainty in other parts of the US, (*e.g.*, acknowledging upfront that states need large amounts of new renewable resources can facilitate or avoid system impact and facilities studies). He asked if ISO-NE is considering such proactive interconnection process reforms. Oberlin stated that the new longer-term planning process provides ISO-NE the mechanism to do this, but there needs to be further tariff reform to allow ISO-NE to move forward on solutions (*i.e.*, transition from study to implementation).
Pfeifenberger stated that interconnection uncertainty drives the queue dropout problem and asked if ISO-NE would provide interconnection headroom information. Oberlin replied that he would need to take this to ISO-NE's resource interconnection group, but again emphasized that the new longer-term planning process should provide stakeholders with better information.
Pfeifenberger stated that New England has the lowest congestion costs in the US, but also the lowest share of clean energy in the resource mix so it would appear that ISO-NE could quickly interconnect new renewable resources. Oberlin noted that the existing interconnection process has allowed significant entry of new clean resources without large upgrade costs.
Ahern supported addressing interconnection issues and noted that the distribution utilities face competing demands for transmission investment (*i.e.*, generator interconnection and asset condition projects at the regional transmission system level and DERs on the distribution systems). He stated there are opportunities for more comprehensive interconnection planning across both systems.

Marshall then advised members that there was limited time remaining for this meeting. In response, Oberlin accelerated his presentation of the following topics.

Cost Allocation
Oberlin explained that load ratio share serves as the default cost allocation methodology for regional transmission investments under which Massachusetts currently pays for 46% of regionally allocated transmission costs. Oberlin noted that public policy projects are allocated 30% to states with the public policy need and 70% regionally.

Longer-term Transmission Studies
Oberlin explained that ISO-NE is undertaking the 2050 study as the first longer-term transmission study. He explained the study is responsive to NESCOE's request and ISO-NE hopes to complete work in November.

Elective Transmission Upgrade (ETU)
Oberlin explained that ETUs are transmission system upgrades that are voluntarily funded by an entity that agrees to pay for all upgrade costs and are outside ISO-NE's transmission planning process. Oberlin stated that the Cross Sound Cable is only ETU currently in-service.

Benefits
Oberlin identified several benefits of transmission, highlighting low regional congestion and the facilitation of resource retirement and replacement with clean new resources.

Solutions Selection

Oberlin explained the transmission solutions process, noting that ISO-NE conducts a competitive solutions process if the identified transmission need is greater than three years in the future; otherwise it uses a regulated solutions process where PTOs develop solutions to address the need.

Marshall thanked Oberlin for the broad range of information and encouraged ISO-NE to continue supporting the CETWG. Marshall reminded members that the CETWG website contains ISO-NE's presentation.

8. Close and Next Steps

In closing the co-Chairs moved to discuss setting a schedule and an agenda for the next CETWG meeting (slide 13).

Discussion

Van Nostrand asked staff to poll members for availability and expressed an interest in including public comment in the next CETWG meeting.

The co-Chairs recommended the next CETWG meeting address the 2050 study, and that a subsequent meeting address generator interconnection and Order 2023.

Barrett agreed with this suggestion and thanked the co-Chairs.

Ahern asked if there was any homework for the next meeting. The co-Chairs stated they may post material to the CETWG website.

Howgate asked the co-Chairs to make background information available to help him get up to speed on transmission topics.

DPU Counsel Wade reminded the co-Chairs that the draft Remote Participation Policy requires roll call rather than voice voting. Howgate asked if the CETWG could amend the By-laws to allow voice vote. Wade replied that the draft Remote Participation Policy and the open meeting law regulations required a roll call vote. The co-Chairs then asked for roll call votes to adopt both the draft By-laws and Remote Participation Policy. Burnham was absent; all other members voted their assent by roll call. The CETWG adopted the By-Laws and Remote Participation Policy.

The co-Chairs adjourned the meeting at 11:03 AM.

Meeting Materials:

- Agenda
- Draft By-laws
- Draft Remote Participation Policy
- ISO-NE presentation