COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENERGY RESOURCES
DEPARTMENT OF PUBLIC UTILITIES

Clean Energy Transmission Working Group
Draft Report
December 6, 2023

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Select Key Takeaways
(1st draft)

Transmission Planning

- There is a need to expand electric transmission to enhance grid reliability, resilience, and resource adequacy, facilitate the integration of renewable resources and access to clean energy, reduce the energy burden, support electrification, and alleviate congestion and curtailment.

Distribution System Planning

- As part of the growing electrification, the distribution system will need to accommodate substantial new load from several sources, including transportation and heating. Moving to a more comprehensive, longer term distribution planning approach is key to achieving our clean energy transition. Such a process should ensure that infrastructure is robust enough for the more complex load profiles of the future.

2050 Transmission Study

- Identified a series of transmission concerns that would need to be addressed to reliably serve the forecast load in 2050. 4 high-likelihood areas of concern.
- ISO-NE developed conceptual solutions for all identified concerns and corresponding cost estimates. Generally, the solutions comprised both new transmission lines and rebuilding existing transmission lines.
- The investment would be spread out between now and 2050. Total cost: $16-$17 billion to serve a 51 GW winter peak load or roughly $0.62-$0.65 billion per year. Total cost to serve a 57 GW winter peak load: $23-$26 billion, approximately an average spend of $0.88-$1.00 billion per year.
- ISO-NE is working to establish a process by which the states can operationalize the 2050 Study results. Stakeholder discussions on this 2nd phase of the longer-term transmission study process began in October.

Select Key Takeaways
(1st draft)

Cost Allocation

- In 2022, FERC issued a NOPR to reform regional transmission planning and cost allocation to provide regions and states flexibility in developing appropriate methods for allocating the costs of meeting long-term transmission needs. It remains pending at FERC.
- At present, ISO-NE Regional Benefit Upgrades to address grid reliability and economic needs are allocated on a load-ratio basis – *i.e.*, based on the amount of electricity demand in each state.
- Costs of public policy projects are shared 70% by consumers throughout the region on a load-ratio basis, and 30% by consumers of those states whose public policies drive the need for the projects.
- Elective Transmission projects are 100% funded by the project developer.
- Local Transmission projects are funded locally by customers causing the need for the project

Offshore Wind

- The current approach to OSW transmission planning involves developers taking interconnection and delivery risk by making informed approximations on where they can import the most amount of clean energy at the lowest cost and least disruption to the surrounding communities. With each subsequent state RFP, low-cost options for onshore interconnection sites for individual offshore wind farms are dwindling, and onshore interconnection and grid upgrade costs are increasing.
- Targeted upgrades of the onshore network to facilitate delivery of offshore wind from proactively planned points of interconnections can provide substantial benefits.
- Points of interconnection need to be maximized for imported power capacity, dependability, and resilience, considering environmental and community impacts.
- A more collaborative and proactive planning process considering how to integrate future clean energy resources onshore and offshore will allow the region to evaluate the most cost-effective and flexible options for the region and its electricity customers

Select Key Takeaways
(1st draft)

Interconnection and FERC Order 2023

- Interconnection process reform has become a focus for FERC, ISO-NE, and RTOs because of large backlogs of projects in the interconnection queue waiting to be studied and high volumes of projects dropping out of studies at various stages of the process.
- ISO-NE's interconnection queue has seen significant delays in the time necessary to complete studies and over 30,000 MW of proposed projects in its queue.
- As interest in developing clean energy has grown, this is creating the need for more (and more complex) studies. Studies are labor intensive, complicated, and rely on a workforce challenged by engineering shortages.
- FERC Order 2023 mandates a variety of changes to the interconnection process, with the expectation these will speed up interconnection queues across RTOs and improve the timeliness of interconnection projects.
- ISO-NE is in the process of developing its compliance rules, which will be submitted to FERC in 2024 and provides an opportunity for additional reforms, beyond FERC compliance.

Grid Enhancing Technologies (GETS)

- GETS are hardware and software tools that increase the capacity, efficiency, and/or safety of the electric transmission system.
- As the grid becomes increasingly congested and capacity constrained, GETs can reduce congestion costs and increase reliability and resilience by providing system benefits, including situational awareness and alerting capability to enable safer real-time operations, asset health monitoring information to support asset replacement deferral while longer-term solutions are implemented, and increased grid resilience.
- The evolution of transmission planning practices to include GETs is critical as transmission related costs are expected to rise considerably in the next several decades.
- As the state and region continue to develop transmission expansion strategies to address decarbonization goals, optimizing the use of GETs will be a critical tool in rightsizing transmission and reducing impacts to the consumer.

Select Key Takeaways
(1st draft)

Sitting and Permitting

- The FPA grants FERC jurisdiction over rates and terms of service for transmission of electric energy in interstate commerce but does not grant FERC authority over siting of transmission facilities, except for the limited backstop siting authority in Section 216.
- Electric transmission facility siting and permitting largely rests with states and Massachusetts has two state agencies involved in energy facilities siting: the DPU and the EFSB.
- The EFSB's statutory purpose is to review proposed energy facilities to ensure a reliable energy supply, with a minimum impact on the environment, at the lowest possible cost.
- The EFSB has responsibilities to review and approve siting of electric power plants, natural gas/oil pipelines, large oil and natural gas storage facilities, and electric transmission facilities.
- The EFSB may grant a certificate issuing all necessary state and local permits for a previously EFSB-approved project
- Trends point toward an increase in workloads for DPU/EFSB Siting activity: OSW, Battery Storage, Capital Investment Projects, Asset Condition Replacements, Reliability-based transmission investments and ESMP investments.

Other Key Takeaways

- X

Draft Report Recommendations
(1st draft – revised based on CETWG feedback)

Transmission Planning:

- Support regional and interregional efforts to create more holistic, proactive, and forward-looking transmission planning processes.
- Encourage co-location of transmission infrastructure within state-owned or state-controlled properties and corridors, such as highway and railroad rights-of-way.
- Direct Electric Distribution Companies and Transmission Owners to work with ISO-NE to identify local transmission upgrades necessary to meet statewide climate goals and associated cost allocation mechanisms to formalize the treatment of rate recovery of proactive local transmission upgrades.
- Consider developing a program for identifying and procuring key pieces of transmission-related equipment, including the appropriate roles for ISO-NE and the Massachusetts DPU in such a process.

Interconnection:

- Encourage ISO-NE to establish a forum to continuously explore interconnection process improvements beyond initial FERC Order 2023 compliance.
- Establish a working group, chaired by the DOER and DPU, to facilitate stakeholder collaboration on regional best practices for Distributed Generation (DG) Affected System Operator (ASO) studies.

Offshore Wind Development:

- Evaluate the offshore wind procurement process as part of a strategic offshore wind plan, considering the recent procurement experiences along the east coast.
- Work with other New England states, ISO-NE, and transmission-owning companies to initiate a regional analysis to determine the optimal locations for the interconnection of offshore wind.

Draft Report Recommendations
(1st draft – Revised based on CETWG feedback)

Workforce Development:

- To expedite the interconnection of clean energy resources and the development of the necessary transmission infrastructure, the Commonwealth should support workforce development efforts to increase the number of engineers and technical staff to ensure review of state and local siting and permitting applications in a prudent and expeditious manner.

Sitting and permitting:

- The CETWG recommends the Commission on Energy Infrastructure Sitting and Permitting (CEISP) consider the conclusions regarding siting and permitting challenges to electric transmission infrastructure addressed in this report.