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VIA ELECTRONIC MAIL

U.S. Department of Energy
Office of Energy Efficiency & Renewable Energy
Forrestal Building
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Re: ISO New England Inc. Comments on Request for Information on the Draft Transmission System Interconnection Roadmap

ISO New England Inc. (ISO-NE) appreciates the opportunity to submit comments in response to the United States Department of Energy's (DOE) Request for Information regarding a draft Transmission System Interconnection Roadmap prepared by the Interconnection Innovation e-Xchange as a guide to improve interconnection processes for the bulk power system.¹ ISO-NE respectfully provides these general comments in response to the questions posed and looks forward to continued discussion with DOE on any enhancements to the processes to interconnect new resources to the system.

ISO-NE COMMENTS

Part 1: Respondent Type

What type of entity do you represent (e.g., utility, grid operator, energy project developer, state or local government, energy justice advocacy group, trade association, regulator, etc.)?

ISO-NE is the independent, not-for-profit corporation that serves as the Regional Transmission Organization (RTO) for New England. ISO-NE plans and operates the New England bulk power system and administers New England's organized wholesale electricity markets pursuant to the

¹ Department of Energy - Office of Energy Efficiency & Renewable Energy, *Request for Information: Transmission System Interconnection Roadmap Draft* (Oct. 25, 2023) <https://www.energy.gov/eere/i2x/articles/request-information-transmission-system-interconnection-roadmap-draft>.

ISO-NE Transmission, Markets and Services Tariff (Tariff) and the Transmission Operating Agreement with the New England Participating Transmission Owners. In its capacity as an RTO, the ISO has the responsibility to protect the short-term reliability of the New England Control Area and to operate the system according to reliability standards established by the Northeast Power Coordinating Council and the North American Electric Reliability Corporation.

As the RTO, ISO-NE is the entity responsible for keeping electricity flowing across the six New England states and ensuring that the region has reliable, competitively priced wholesale electricity today and into the future. ISO-NE achieves this by executing its three core responsibilities – operating the grid, administering the competitive wholesale electricity market, and providing power system planning.

What is your organization's involvement and interest in interconnection to the electricity distribution systems, transmission system, or both?

As the RTO and a Transmission Service Provider, ISO-NE is responsible for providing open access to New England's administered transmission system, including interconnection service. ISO-NE administers the Federal Energy Regulatory Commission- (FERC) approved Interconnection Procedures.² Pursuant to these procedures, ISO-NE evaluates requests to interconnect elective transmission lines, power plants, and other resources to the New England administered transmission system to ensure they can connect and operate safely and reliably, and facilitate their wholesale electricity market participation. Specifically, ISO-NE is tasked with determining whether the interconnection of generating or transmission resources in the ISO-NE Interconnection Queue would have an adverse impact on the reliability or operating characteristics of the ISO-NE-administered system or any other affected system before they are allowed to interconnect. While ISO-NE coordinates the regional review of impacts of interconnections to the distribution system with the region's Participating Transmission Owners, it does not administer the interconnection process for distribution-connected projects. Those projects are subject to state interconnection processes administered by the transmission and distribution companies.

ISO-NE's current Interconnection Queue consists of a little more than 40 GW of wind, solar, storage, natural gas, and hydroelectric resources. In total, as of November 1, 2023, 204 generation projects are being tracked in the Interconnection Queue. While the number of projects in the ISO-NE Interconnection Queue is significantly less than that in other regions, ISO-NE and its counterparts throughout the country have seen similar trends in terms of new resources and changes in the regional resource mix. For example, we continue to see

² Interconnection Process guides, training materials and other pertinent information is available on the ISO-NE website at <https://www.iso-ne.com/system-planning/interconnection-service>.

significant growth in clean energy and storage interconnection requests. In fact, nearly ninety percent of our current Interconnection Queue comprises storage (46%) and wind (43.7%) projects. As of November 1, 2023, 74 generation projects, totaling approximately 11.5 GW, have completed system impact studies and 35 of those have signed interconnection agreements.

In response to a growing amount of Interconnection Requests for proposed projects entering the ISO-NE queue, ISO-NE has taken steps to help ensure projects progress through the interconnection process in an efficient manner. Similar to what is now mandated by FERC in Order No. 2023,³ ISO-NE developed and implemented a clustering methodology in 2016. This methodology allows two or more Interconnection Requests to be studied together in the Interconnection Studies and to share costs for certain interconnection-related transmission upgrades. ISO-NE has successfully completed various cluster studies since the rules' implementation. These studies have shown the value in clustering methods, where project developers can benefit from collaborating with other developers and together undertake the necessary upgrades to ensure their proposed projects are interconnected safely and reliably. Such collaboration is further facilitated through ISO-NE's Interconnection Procedures for Elective Transmission Upgrade (ETU), which ISO-NE incorporated in its Tariff in 2015. These rules provide for ETUs to participate in the interconnection process in a manner similar to generating facilities, and provide a mechanism for generating facilities to become associated with ETUs to facilitate their interconnection to the administered system. Currently, there are approximately 15 GW of ETUs proposed in New England. Other critically important enhancements incorporated in the Interconnection Procedures include technical data requirements for wind and other inverter-based generators designed to make these projects more "study-ready," similar to conventional generators. These enhancements have improved the interconnection process and minimized the backlog, particularly in Maine. However, modeling issues contributing to some pockets of backlog still persist.

DOE's issuance of the RFI comes at a time when ISO-NE, along with other RTO/ISOs, are actively working on developing their compliance proposals with the FERC Order No. 2023. Order No. 2023 mandates a series of reforms to the generator interconnection processes and agreements intended to address interconnection queue backlogs, improve certainty, and prevent undue discrimination for new technologies. ISO-NE believes that these reforms – particularly, the switch to a first-ready, first-served cluster study process with increased requirements for entering and remaining in the queue – will be particularly helpful in addressing the growth of new resources seeking to interconnect and the differing characteristics of those resources.

³ Improvements to Generator Interconnection Procedures and Agreements, Order No. 2023, 184 FERC ¶ 61,051 (2023) ("Order No. 2023").

Part 2: Feedback on the Draft Interconnection Roadmap

Please provide feedback on the purpose of the roadmap. Is it missing any concepts?

While ISO-NE's efforts are focused presently on complying with Order No. 2023, these comments address the proposed solutions in the roadmap due to their potential impacts. As mentioned above, ISO-NE believes that many of the reforms being implemented as a result of Order No. 2023 will positively help address concerns with the interconnection process. Within the draft roadmap are many solutions that are either cited in or build upon what is mandated in Order No. 2023, such as solutions 1.1 – 1.3. With respect to those items, ISO-NE maintains its support and thinks they will be beneficial in addressing various concerns with the interconnection process.

The roadmap also includes several proposals that are beyond the scope of Order No. 2023 that ISO-NE views as positive steps toward reforming and supporting the interconnection process. For example, solutions 2.11 – 2.15, which focus on workforce development and training, are important – yet sometimes overlooked – components of the interconnection process. As the roadmap mentions, the electric industry requires a significant amount of technical expertise. However, tight and highly competitive job markets have presented significant challenges to hiring and retaining that expertise – an issue seen throughout many industries. Growing the pool of workers in the interconnection workforce and expanding educational opportunities could mitigate some of those challenges in the long-term.

The development of market-based approaches to interconnection queue access, outlined in solution 2.7, is worth further exploration and consideration. If properly developed, these approaches may be able to aid in managing the volume of requests entering the queue. In New England, for example, we have seen substantial interest in offshore wind developments from the New England states and industry, resulting in a significant increase in resources requesting to interconnect to the grid. The ability to hold “zonal auctions,” as the draft roadmap indicates the California Independent System Operator previously proposed, could serve as a valuable tool to help manage that issue.

One area that we have concerns with is solution 2.6, to create the interconnection ombudsperson and independent engineer roles to support dispute resolution services and technical assistance. Except for important variations designed to reflect unique aspects of New England, ISO-NE's Interconnection Procedures are largely based on the FERC pro forma interconnection procedures and agreements, which provide for continuous engagement and communications between ISO-NE, the region's independent RTO, and its Interconnection Customers, and provide robust dispute resolution processes, which, due to ISO-NE's constant engagement with Interconnection Customers are rarely used. In addition, ISO-NE actively engages with the region's stakeholders and industry on interconnection matters, including the New England States Committee on Electricity (NESCOE), New England Power Pool (NEPOOL),

Participating Transmission Owners Administrative Committee (PTO AC), and Northeast Power Coordinating Council. ISO-NE believes the creation of these roles, while well intentioned, could actually serve to slow down the queue process rather than speed things up.

ISO-NE also has concern with solution 2.5, to create fast-track options, which, to date, have been elusive or impractical. The provision of non-discriminatory open-access, in a reliable manner, requires that proposed projects meet the same sets of requirements and that Transmission Providers perform the required studies. In New England, considerable effort was expended complying with the Surplus Interconnection Service required by FERC's Order No. 845.⁴ However, this option has only been fully pursued once in the region.

While the proposed solutions encompass a broad variety of topics and aspects of the interconnection process, ISO-NE believes there is one important solution that is missing from the roadmap – the standardization of inverter-based resources. Specifically, DOE should use its convening powers to gather ideas from industry experts to discuss a framework to standardize the components of inverter-based resources that are interconnecting to the grid. The industry undertook such efforts previously to standardize components of rotating generators; similar efforts could significantly improve modeling issues that continuously challenge the study and operation of inverter-based technologies.

What potential barriers do you foresee in executing the solutions, and how significant are they?

Speeding up the interconnection process is an important part in bringing additional resources online to increase reliability and enable the clean energy transition that has been mandated by a number of state policies. However, the interconnection process is only one part of the equation in developing these new resources. As has been seen recently in the offshore wind industry in the Northeast, significant economic, supply chain, and workforce factors remain that threaten the viability of these projects. For example, on October 31, Ørsted [announced](#) its cancellation of the Ocean Wind 1 and 2 offshore wind projects, citing supplier delays and rising interest rates as the decision to forgo these projects. These factors ultimately play a consequential role in both the development and interconnection of resources, and therefore must be addressed.

The time it takes for an Interconnection Customer to secure a power purchasing agreement and other various commercial agreements can also drag out the interconnection process. It has not been uncommon for projects to sit in the queue for prolonged periods as they try to secure

⁴ *Reform of Generator Interconnection Procs & Agreements*, Order No. 845, 83 FR 21342 (May 09, 2018), 163 FERC ¶ 61,043 (2018), *order on reh'g*, Order No. 845-A, 166 FERC ¶ 61,137, 84 FR 8156 (Mar. 06, 2019), *order on reh'g*, Order No. 845-B, 168 FERC ¶ 61,092 (2019).

those agreements, despite ISO-NE having already completed the necessary studies. In fact, some Interconnection Customers have shared that they are comfortable with the current timeline, because it allows them the necessary time to complete some of those other steps. To successfully implement these policies, any steps to speed up the queue will also need to be paired with actions that address barriers outside of the jurisdiction of ISO/RTOs.

Please address whether stakeholders' activities, roles, and challenges are sufficiently represented.

ISO-NE is committed to working with the New England states and stakeholders to ensure that the transition to a clean energy system is a reliable one. As mentioned previously, ISO-NE actively engages with our stakeholders on interconnection issues and other matters, including NESCOE, NEPOOL, and the PTO AC. Stakeholder committees and working groups assist ISO-NE in fulfilling its three roles in New England: operating the power grid, designing and running the wholesale electricity markets, and regional system planning. In addition, ISO-NE participates as a technical resource in state-initiated forums on interconnection matters to discuss system planning activities.

ISO-NE appreciates the opportunity to provide these comments to the DOE on the draft roadmap and is prepared to assist DOE as it further considers these important issues.

Respectfully submitted,



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ISO New England Inc.