



Northeast from the region's abundant, indigenous renewable resources.<sup>2</sup> RENEW has focused on highlighting the value of grid-scale resources- specifically offshore and land-based wind, solar, and small hydropower- and the benefits of transmission investment to deliver renewable energy to load centers in the Northeast. Some RENEW members own and/or are developing large-scale wind, solar, energy storage and hydropower facilities across the Northeast. Others manufacture megawatt-class wind turbines or are independent transmission developers with proposals for transmission facilities to connect clean energy resources from around the region to the load centers.

Since 2012, RENEW, its members, and the ISO have engaged in a series of workshops to share information about wind turbine technology and the New England transmission system, and to exchange ideas for reforms to the ISO's interconnection process.<sup>3</sup> Last year, RENEW, the ISO and other stakeholders collaborated in the development of the interconnection reform proposal leading to this filing which achieved unanimous support in the stakeholder process. We believe this collaboration was an example of a successful stakeholder process that resulted in a better proposal with support from all sides of the table. We appreciate the ISO's engagement and openness throughout. The resulting Interconnection Process Improvements will address many known challenges and RENEW expects the process will be improved significantly. For these reasons, we respectfully request that the Commission accept the ISO proposal.

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<sup>2</sup> The comments expressed herein represent the views of RENEW and not necessarily those of any particular member of RENEW.

<sup>3</sup> Agendas and materials are available at [http://renew-ne.org/?page\\_id=306](http://renew-ne.org/?page_id=306)

While RENEW is supportive of the Interconnection Process Improvements, we agree with the ISO and NEPOOL, as stated in their comments, that deeper reforms are needed than those proposed in the instant filing if the queue backlog and other concerns raised in the stakeholder process are to be resolved. We look forward to working with ISO New England through the stakeholder process this year to develop solutions to meet these additional needs.

## **II. COMMENTS**

### **A. The Filing Strikes a Reasonable Balance Between Interconnection Processing Speed and Process Flexibility**

A reasonable Material Modification review process is critical for Interconnection Studies to be conducted efficiently while simultaneously allowing sufficient flexibility for an Interconnection Customer to make certain commercial decisions as the development of a project progresses. RENEW voiced strong preference to maintain the current flexibility levels in the interconnection procedures and to allow some additional flexibility around modifications even if that results in slightly longer study timeframes.<sup>4</sup> In contrast to the ISO proposal, marginally shortening the serial study process by reducing flexibility would not itself resolve the queue backlog but would make the process excessively difficult and risky.

The Interconnection Process Improvements require that any materiality assessment of a proposed modification that cannot be completed within 10 Business Days of study review time will be deemed automatically a material impact on later-queued projects (should there be any) that will result in the Interconnection Customer either abandoning the proposed modification or being forced to submit a new Interconnection Request. The proposed 10 Business Day limit for

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<sup>4</sup> See Testimony of Alan McBride in ISO Filing at 4-5.

materiality review was a compromise to balance the need for flexibility while also keeping the process moving. While RENEW had requested the ISO use a 45-day timeline, we are optimistic that 10 days can work because of other changes being proposed in the Interconnection Process Improvements such as developers having access to base case models, downloadable from the ISO website at any time, and because the proposed review period is 10 days of active study, not necessarily 10 days from start to finish. The ISO also committed to stakeholders that it would provide guidance in a Planning Procedure with a (non-exhaustive) list of criteria that must be met for a proposed change to be considered non-material. Together, these changes and guidance will allow an Interconnection Customer to review and revise their contemplated changes prior to submittal to the ISO, with the intent that only changes that pass this initial developer screening would be submitted for ISO review. If this process works properly as envisioned, changes proposed to the ISO should be more easily studied and approved in the quicker 10 Business Day timeframe.

**B. RENEW Supports the ISO’s Proposed Reactive Power Capability Test at Net Rated Power Only**

RENEW supports the change to a standard reactive power requirement for wind generating facilities in New England as proposed in the ISO filing. While we believe that meeting this requirement may impose costs that are at times quite significant on certain wind generators, we are in agreement with the ISO that this requirement should benefit study processing times and system operability and is reasonable.

The proposed requirement would measure the generator reactive capability at the high side of the interconnection transformer or else at the Point of Interconnection where there is no

interconnection transformer. We believe this is an appropriate point of measurement that recognizes the unique nature of wind generator design.

We also support the proposed transition rules under which the new reactive requirement would apply only to wind generators that have not yet started their System Impact Study as of the effective date of these rules. As this transition rule will not require restudies, it will result in the least disruption to the interconnection queue process while also providing certainty to generators that have made commitments based on the results of their System Impact Studies.

The proposed requirement provides for wind generators to maintain the required +/- 0.95 power factor range, measured at continuous rated power output. There is intentionally no specification in the Tariff regarding the requirement at lower power output levels. The ISO has historically set and tested the reactive power requirement for conventional generators at the generator's net rated real power output. In planning space, if a generator meets the requirement at this real power output level, it is considered to have "passed the test" so to speak. No additional testing at reduced power output levels is performed. In stakeholder discussions about the proposed reactive power requirement for wind generators, the ISO has proposed to perform the planning test for wind generators in the same way.

RENEW understands that this remains the ISO's intention and that its comments regarding the concept of a permissive range below 10 percent rated power output do not change this intention.<sup>5</sup> Rather, the specification of a defined threshold below which there would be no reactive capability requirement, e.g., 10 percent as proposed in the reactive power notice of proposed rulemaking,<sup>6</sup> is unnecessary given how the reactive power requirement is tested in New England.

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<sup>5</sup> ISO Filing at 17.

<sup>6</sup> See Reactive Power Requirements for Non-Synchronous Generation, 153 FERC ¶ 61,175 (2015) ("NOPR").

Further, RENEW understands that the ISO will be documenting its methodology for performing the reactive capability test in a Planning Procedure that will be available prior to the requested effective date of these interconnection improvements. Knowing that documentation will be provided, RENEW is supportive of the ISO's reactive power requirement proposal.

**C. The Proposed Dynamic Reactive Power Requirement Neither Categorically Allows nor Categorically Rejects Switched Reactive Devices, Which Is the Correct Approach**

As noted in the comments filed by SunEdison, RENEW and its members held substantial discussions with the ISO regarding the nature of the dynamic reactive power requirement. RENEW acknowledges the ISO's position that it has previously found the use of static reactive devices at some wind plants to be problematic and does not view them as reliably implementable in ISO New England at this time even for the limited purpose of offsetting reactive losses on a wind generator's collector system.<sup>7</sup> Here, it is beneficial that the proposed Tariff does not explicitly either allow or disallow the use of static devices, as that leaves the possibility of generators proposing use of such devices in the future. Though the ISO notes that these static devices have not been allowed at conventional generating facilities as a means to meet the reactive power requirement,<sup>8</sup> dynamic devices (e.g., STATCOMs, synchronous condensers) have also not been allowed in these cases. A different approach has been taken at wind plants where dynamic devices are regularly used for this purpose and will continue to be allowed for this purpose. Should there be a case where the use of static devices for the limited purpose of offsetting reactive losses within a wind plant collector system can be

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<sup>7</sup> ISO filing page 18.

<sup>8</sup> ISO filing page 18.

demonstrated to be both reliable and operable and a proposal showing that the specific design desired by the generator would satisfy the ISO's concerns, it would be reasonable to leave the door open for consideration of such a proposal. RENEW supports this approach and does not believe there should be a categorical prohibition of the use of static devices for this purpose.

**D. RENEW Supports the ISO's Plan to Provide Guidance on How to Determine if Models Are "Study-Ready"**

The ISO has frequently spoken about the difficulties it has faced with generator models that are not "study-ready" and require significant time to trouble shoot during Interconnection Studies,<sup>9</sup> delaying the ability to complete studies and exacerbating the queue backlog. As part of these Interconnection Process Improvements and the changes being made to make inverter-based generators more "study-ready", the ISO agreed to provide sufficient guidance in a Planning Procedure for interconnection customers and their equipment manufacturers to be able to evaluate whether models were in fact ready prior to their study commencing. With the requested effective date of these proposed rules less than six weeks away, the stakeholder review of this Planning Procedure must begin without delay so that the procedure can be in place prior to the requested effective date. RENEW understands that the ISO intends to bring the first draft of this document to NEPOOL this month so that this deadline can be met. While this does not leave as much time for consideration as might be preferred or typical for NEPOOL review, RENEW supports the ISO's efforts and this proposed timeline so that Interconnection Customers will have the requisite guidance upon the effective date of these rules.

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<sup>9</sup> McBride Test., *supra* note 4, at 30.

**E. The Interconnection Process Improvements Will Not Resolve the Queue Backlog or Other Complex Concerns Raised During the Stakeholder Process and Additional Changes Will Be Needed to Address These Issues**

In 2008, the Commission assessed all RTOs/ISOs and determined that changes were needed to address the queue backlogs that had developed in each region.<sup>10</sup> All RTOs/ISOs other than ISO New England implemented significant process changes including cluster or group study processes and first-ready, first-served provisions. The ISO's solution at the time was to increase certain deposits and milestones in the hope that it would discourage speculative entry into and processing through the queue. Though queue processing appears to be moving smoothly in southern New England, the reforms made in 2008 have proven to be insufficient to solve the ISO's queue backlog problem in certain portions of the system, such as Maine. The backlog that was identified in 2008 is now worse in Maine, and the prognosis for relief is dim without significant changes.

From a review of the ISO New England queue,<sup>11</sup> RENEW sees that studies for approximately twenty interconnection requests in northern Maine have not yet begun. As recently as 2014 it took an average of 350 days for the ISO to complete an interconnection study (i.e., a Feasibility Study or a System Impact Study), or just under one year per study.<sup>12</sup> Twenty projects in the queue in a serial study process equates to a nearly twenty-year backlog. Even if we optimistically assumed that the study duration could be reduced to eight months per

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<sup>10</sup> *Interconnection Queuing Practices*, Order on Technical Conference, 122 FERC ¶ 61,252 (2008) (“Queuing Practices Order”).

<sup>11</sup> Interconnection Request Queue, ISO New England, <http://iso-ne.com/system-planning/transmission-planning/interconnection-request-queue>

<sup>12</sup> *ISO/RTO Joint Common Performance Metrics Report*, Docket No. AD14-15-000 (August 30, 2015), 105.

study, then the twenty project backlog would still take thirteen years to process. As a result of this backlog, jurisdictional interconnection service continues to be impeded and states may have difficulty meeting their collective public policy goals for the development of renewable energy.

RENEW agrees with the ISO that in addition to interconnection process changes, significant transmission infrastructure is needed to integrate new renewable energy generators in northern New England. In response to demand driven by state renewable energy and greenhouse gas reduction laws, developers are proposing thousands of megawatts of wind energy facilities largely in western and northern Maine due to their excellent wind resources. In the historic three-state Request for Proposals (RFP) now pending, project developers offered large-scale projects including eight bids for Power Purchase Agreements (PPAs) for new wind projects and six bids for various combinations of wind, hydro, solar, energy storage, and transmission. Those projects- including proposals for new transmission lines in their bids- reflected this need for additional infrastructure to tap the region's clean energy resources.<sup>13</sup>

New England has a long history of interconnection customers funding 100 percent of the cost of those interconnection upgrades identified within the interconnection study process, while requiring the ISO to identify the least-cost set of upgrades to ensure that each individual project under study does not degrade system reliability. Though the current serial study process identifies the least-cost solution for each studied project, it may not cumulatively result in the least-cost or most beneficial set of upgrades for a series of interconnections planned in the same area in a common timeframe. In addition, the serial process is lumpy, with a first-mover often paying the cost for building infrastructure that will benefit later developers without any

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<sup>13</sup> Press Release, Connecticut Department of Environmental Protection, DEEP Reports Strong Response to Three-State Clean Energy RFP (February 2, 2016), <http://www.ct.gov/deep/cwp/view.asp?A=4808&Q=576634>

reimbursement. As a result, the system encourages developers to seek solutions or construction designs that do not provide expandability or headroom, resulting in cumulative costs that are unnecessarily high and/or cumulative designs that result in a less operable system.

In its filing letter, the ISO states a group study process, infrastructure identification and cost allocation are the next reforms concepts to be considered in the second phase to address the significant queue backlog that exists. RENEW stands ready to continue its collaboration with the ISO and other stakeholders to identify the appropriate solution for New England's queue backlog challenge.

As encouraged by AWEA in its request for a technical conference to evaluate stakeholders' experience under the existing interconnection rules and procedures across different regions and consider potential options for improvement,<sup>14</sup> RENEW believes that such a technical conference would be helpful for New England to evaluate the success of various designs used elsewhere and develop possible solutions to this significant backlog challenge facing the ISO and its stakeholders this year.

During the development of the Interconnection Process Improvements in the stakeholder process, the following additional issues beyond the queue backlog were also raised but were determined to be too complex to solve within the timeframe desired for the instant

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<sup>14</sup> On July 7, 2015, AWEA submitted a Petition for Rulemaking to Commission requesting it initiate a rulemaking to consider amending the pro forma GIP and GIA in order to alleviate unduly discriminatory and unreasonable barriers to generator market access. *Petition for Rulemaking on Generator Interconnection Procedures*, Docket No. RM15-21-000. As stated in the petition, if the Commission were to initiate a technical conference to consider such issues, it would provide a forum to explore the numerous technical, policy, and legal issues associated with the merits of pursuing generator interconnection reform. A further value in holding a technical conference would be to evaluate stakeholders' experience under the existing interconnection rules and procedures and the potential options for improvement. RENEW encourages the Commission to initiate such a technical conference as we believe it could be used to consider how best to resolve the issues facing New England, as well as other GIP reform issues across the nation.

filing. As such, it was agreed to defer additional consideration of these issues until after the Interconnection Process Improvements were completed.

- Coordination between the timeout provisions of the capacity capability request associated with interconnection queue positions and the rules of the Forward Capacity Market itself, including the overlapping impact test and the Minimum Offer Price Rule. This focus was echoed among many stakeholders in the NEPOOL discussions and interest remains high to work with the ISO to develop a solution to these concerns.
- Allowing both wind and conventional generators to reduce project size following the System Impact Study without the material modification determination risk, particularly in coordination with the Forward Capacity Market process in which a new capacity supply offer may be rationed within the auction.
- Basing the restriction on increasing the megawatt capability of an Interconnection Request (which is always considered material) on the net plant output, not the sum of the nameplate capability of the individual components (e.g., wind turbines) making up the generating plant.
- Clarifying Section 4.4.1 of the Large Generator Interconnection Procedures regarding what changes to generator technology may be allowed if determined to be non-material and what technology changes are categorically material.
- Clarifying the treatment of alternate Point(s) of Interconnection (POIs) and what an interconnection customer would need to do in order to have two mutually-exclusive alternative POIs evaluated.

RENEW believes these are important issues in the stakeholder process this year, and that the ISO and stakeholders can work together to determine whether and what additional changes might be appropriate. The ISO has recognized this need and has signaled their intent to begin a discussion with stakeholders about the queue backlog and infrastructure needs later this month and, on a separate but parallel track, the remaining issues described here in the second half of 2016. RENEW supports this approach and looks forward to collaborating with the ISO and other stakeholders to develop much needed solutions to these remaining challenges facing the interconnection process.

### **III. CONCLUSION**

RENEW respectfully requests that the Commission accept the ISO's proposal to implement Interconnection Process Improvements.

Respectfully submitted:

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