

155 FERC ¶ 61,031
FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

April 15, 2016

In Reply Refer To:
ISO New England Inc. and Participating
Transmission Owners Administrative
Committee
Docket No. ER16-946-000

ISO New England Inc.
One Sullivan Road
Holyoke, MA 01040-2841

Attention: Monica Gonzalez

Participating Transmission Owners Administrative Committee
800 Boylston Street, P1700
Boston, MA 02199-2105

Attention: Mary Grover

Dear Ms. Gonzalez and Ms. Grover:

1. On February 16, 2016, ISO New England Inc. (ISO-NE) and the Participating Transmission Owners Administrative Committee, on behalf of the Participating Transmission Owners, (together, the Filing Parties) submitted revisions to Schedules 22, 23 and 25 of the ISO-NE Open Access Transmission Tariff (Tariff) to incorporate certain interconnection process improvements (Interconnection Revisions).¹ We accept the proposed revisions, subject to condition, effective April 17, 2016, as requested. We also

¹ ISO New England Inc., ISO New England Inc. Transmission, Markets and Services Tariff, [Schedule 22, Schedule 22 Large Generator Interconnection Procedures, 9.0.0](#), [Schedule 23, Schedule 23 Small Generator Interconnection Procedures, 8.0.0](#), and [Schedule 25, Schedule 25, Elec. Transmission Upgrade Inter. Proc., 1.0.0](#).

direct the Filing Parties to submit a compliance filing within 30 days of the date of this order.

2. The Filing Parties state that the Interconnection Revisions were developed with stakeholders to address interconnection challenges that have led to a backlog of interconnection requests for 4,000 MW of primarily wind generation in Maine. The Filing Parties explain that the Interconnection Revisions are the first phase of a larger effort by ISO-NE and its stakeholders to improve interconnection procedures, and target the challenges associated with the time to complete interconnection studies as well as curtailments in operations for wind generation.²

3. The Filing Parties state that the proposed Interconnection Revisions incorporate new reactive power requirements for wind generators.³ Specifically, the Filing Parties propose that wind generators “shall maintain dynamic reactive capability over the power factor range of 0.95 leading to 0.95 lagging, at continuous rated power output, measured at the high-side of the station transformer or at the Point of Interconnection if there is no station transformer.”⁴ The Filing Parties state this Tariff language establishes a full dynamic reactive power requirement that does not include a 10 percent real power threshold exemption, because advances in wind turbine technology allow wind generators to maintain required power factors over a range of real power output.⁵ The Filing Parties further explain that the proposed Tariff language provides for reactive power capability to be measured at the high-side of the station transformer rather than the Point of Interconnection in order to account for the long generator leads through which many

² Transmittal at 2.

³ The Filing Parties state that current reactive power requirements as established in *Interconnection for Wind Energy*, Order No. 661, FERC Stats. & Regs. ¶ 31,186, *order on reh’g*, Order No. 661-A, FERC Stats. & Regs. ¶ 31,198 (2005) and *Standardization of Small Generator Interconnection Agreements and Procedures*, Order No. 2006, FERC Stats. & Regs. ¶ 31,180, *order on reh’g*, Order No. 2006-A, FERC Stats. & Regs. ¶ 31,196 (2005), *order granting clarification*, Order No. 2006-B, FERC Stats. & Regs. ¶ 31,221 (2006), have created a case-by-case study process that has been a “direct driver” of delayed interconnection study times. Transmittal at 14-15.

⁴ *Id.* at 16. (citing ISO New England Inc., ISO New England Inc. Transmission, Markets and Services Tariff, [Schedule 22, Schedule 22 Large Generator Interconnection Procedures \(9.0.0\), app. 6](#) (Large Generator Interconnection Agreement), app. G at A.ii; *id.* [app. 6](#) (Large Generator Interconnection Agreement) at § 9.6.1; *id.* [Schedule 23, Schedule 23 Small Generator Interconnection Procedures \(8.0.0\), Ex. 1](#) at § 1.8.1.

⁵ Transmittal at 17.

wind generators are interconnecting to the New England system. The Filing Parties state that reactive power generated by wind units is not effectively transmitted across long distances and the proposed revision reduces the burden on wind generators to compensate for reactive power losses in the long lead lines.⁶ Finally, the Filing Parties state that the reactive power requirements only apply to generators that have not initiated a system impact study, thus they avoid a requirement to restudy projects for which studies are already ongoing or completed.⁷

4. The Filing Parties explain that the Interconnection Revisions also: (1) create new technical data requirements for wind and inverter-based generation; (2) clarify an Interconnection Customer's access to base case databases; (3) modify the definition of material modifications; (4) provide an optional alternative scope to a feasibility study; (5) adopt modeling and performance requirements related to North American Electricity Reliability Corporation initiatives; and (6) make other ministerial changes.⁸ The Filing Parties state these proposed revisions received unanimous support in the NEPOOL Transmission Committee and Participants Committee.⁹

5. Notice of the Filing Parties' proposed Tariff revisions was published in the *Federal Register*, February 23, 2016, 81 Fed. Reg. 8951 (2016), with interventions and protests due on or before March 8, 2016. EDF Renewable Energy, Inc., Eversource Energy Service Company, Champlain VT, LLC, Exelon Corporation, NRG Power Marketing LLC, GenOn Energy Management, LLC, and Entergy Nuclear Power Marketing, LLC filed timely motions to intervene, and National Grid filed an out-of-time motion to intervene. New England Power Pool Participants Committee (NEPOOL), SunEdison Utility Holdings, Inc. (SunEdison), New England States Committee on Electricity (NESCOE), American Wind Energy Association (AWEA), and RENEW Northeast, Inc. (RENEW) each filed a timely motion to intervene and comments. On March 23, 2016, the Filing Parties filed an answer to NEPOOL's, SunEdison's, RENEW's, and AWEA's comments.

⁶ The Filing Parties State these generator leads may be as long as 50 to 80 miles, and there is no benefit to the generator, and little benefit to the system, to require voltage support all the way to a remote Point of Interconnection. *Id.* at 17.

⁷ *Id.* at 18.

⁸ *Id.* at 3.

⁹ Transmittal at 2, 26. *See* New England Power Pool Participants Committee March 3, 2016 Comments at 3-4.

6. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2015), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. We find good cause to grant National Grid's motion for late intervention in light of its interest in this proceeding, the early stage of the proceeding, and the absence of any undue prejudice or delay. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2015), prohibits an answer to an answer unless otherwise ordered by the decisional authority. We will accept the Filing Parties' answer because it provided us with information that assisted us in our decision-making process.

7. NESCOE supports the Interconnection Revisions. AWEA and NEPOOL state that their support is contingent upon a second phase of revisions to the interconnection processes that will address more complex issues related to the Maine interconnection queue.¹⁰ AWEA states that the second phase of revisions would benefit from the technical conference proceedings it has proposed.¹¹ NEPOOL states ISO-NE should consider improvements related to ISO-NE's Forward Capacity Market when considering a second phase of interconnection revisions, especially when it considers infrastructure solutions to the queue backlog.¹²

8. RENEW also filed comments supporting the Interconnection Revisions. RENEW states that the Interconnection Revisions intentionally do not specify reactive power requirements at lower output levels, indicating that additional reactive power measurements will not be required at these lower output levels.¹³ RENEW also states that the Interconnection Revisions do not allow or disallow the use of static devices, which provides an opportunity for generators to propose the use of static devices in the future.¹⁴ RENEW recognizes that the revisions may impose costs that are at times quite significant for certain wind generators, however it agrees that the standard reactive power requirement should benefit study time processing and is reasonable.¹⁵ RENEW asserts that the Interconnection Revisions will not resolve the queue backlog or other complex

¹⁰ AWEA Comments at 1; NESCOE Comments at 2; NEPOOL Comments at 2.

¹¹ AWEA Comments at 4-5, citing Docket No. RM15-21-000 (July 2015).

¹² NEPOOL Comments at 4-5.

¹³ RENEW Comments at 5.

¹⁴ *Id.* at 6.

¹⁵ *Id.* at 4.

concerns raised during the stakeholder process and specifies resolutions it supports in a second phase of interconnection revisions.¹⁶

9. SunEdison filed comments stating that, while it disagrees with the Filing Parties' description of the extent and cause of the interconnection queue backlog in Maine, it largely supports the Interconnection Revisions.¹⁷ However, SunEdison expresses concern that the reactive power requirement can be interpreted to prohibit the use of static devices to compensate for reactive losses within a wind generators' collector system. SunEdison asserts that there is no engineering reason to prohibit use of static devices, as long as the fully dynamic reactive power requirements are met. SunEdison states that such a prohibition could add millions of dollars in additional costs to wind generation projects in New England, costs that are not justified merely to reduce interconnection study times.¹⁸ SunEdison requests that the Commission clarify how the reactive power requirement rules are to be interpreted and applied.

10. In their Answer, the Filing Parties state that comments raised by intervening parties related to specific revisions to consider in a second phase of interconnection revisions, characterizations of the queue backlog in Maine, and technical conference proposals, are beyond the scope of the proceeding, and should be dismissed.¹⁹ The Filing Parties state that even if an alternative proposal is presented to the Commission in this proceeding by intervening parties, the Commission must accept the Interconnection Revisions if it finds them to be just and reasonable.²⁰ Therefore, the Filing Parties state any attempt by RENEW or SunEdison to propose an alternate proposal must be dismissed.

11. The Filing Parties also state that the Interconnection Revisions are intentionally silent on the types of devices that can be used to meet the dynamic reactive power requirement for wind generators and, according to the Filing Parties, the revisions neither

¹⁶ *Id.* at 8-12.

¹⁷ *Id.* at 1-2.

¹⁸ *Id.* at 6-7.

¹⁹ The Filing Parties Answer at 7.

²⁰ *Id.* at 8-9, citing *ISO New England Inc.*, 114 FERC ¶ 61,315, at P 33 and n.35 (2005), *Pub. Serv. Co. of New Mexico v. FERC*, 832 F.2d 1201, 1211 (10th Cir. 1987) and *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984).

firmly allow nor preclude the use of any particular device.²¹ The Filing Parties explain that presumptively allowing unfettered use of static devices in all circumstances could present technical problems in the New England region,²² as well as complexities in interconnection studies which could cause delays that are contrary to the objective of these Interconnection Revisions.²³ The Filing Parties also clarify in their Answer that the Interconnection Revisions do not provide a lower real power threshold exemption for reactive power on the basis that the capability is already available for wind generator technologies.²⁴ The Filing Parties state that testing reactive power at the rated power output is the most conservative evaluation for reactive power production, and any explicit reactive power exemption will further delay the already ongoing technology development.²⁵

12. We accept the Filing Parties' proposed Interconnection Revisions, subject to condition, effective April 17, 2016, as requested.²⁶ Specifically, we accept the Filing Parties' proposed requirement that wind generators maintain dynamic reactive capability over the power factor range of 0.95 leading to 0.95 lagging, at continuous rated power output, measured at the high-side of the station transformer or at the Point of

²¹ *Id.* at 9.

²² For example, ISO-NE states that it has found the use of static devices might not contribute to the post-contingency stability or transient voltage performance and are subject to premature failure resulting from the excessive switching encountered during normal plant and system operation. ISO-NE states that the experience in New England has been that weak grid conditions, under which the proposed projects have been interconnecting, expose these facilities to potentially wide fluctuations in system voltages. ISO-NE also recognizes that the relevant technology is "ever-evolving" such that it "may be . . . that the problems found in the New England studies are addressed." *Id.* at 10.

²³ *Id.* at 10 - 11.

²⁴ *Id.* at 13.

²⁵ *Id.* at 12.

²⁶ The Commission can revise a proposal filed under section 205 of the Federal Power Act as long as the filing utility accepts the change. *See City of Winnfield v. FERC*, 744 F.2d 871, 875-77 (D.C. Cir. 1984). The filing utility is free to indicate that it is unwilling to accede to the Commission's conditions by withdrawing its filing.

Interconnection if there is no station transformer.²⁷ While certain parties express concern that the Interconnection Revisions restrict the use of static devices, the Filing Parties acknowledge in their answer, and we agree, that the proposed Tariff revisions do not prohibit the use of static devices. In accepting the Interconnection Revisions here, we interpret the relevant Tariff language as providing flexibility for generators to propose the use of static devices as long as the dynamic reactive capability requirements are met. In response to RENEW's comments, we find that it is just and reasonable that the Filing Parties propose no exemptions to the reactive power requirement at low power output levels in order to avoid further delays in interconnection processes. We understand that ISO-NE will not require testing reactive power capability below the continuous rated output of the wind generator, because ISO-NE's experience indicates that the dynamic capability is typically most restrictive at the continuous rated output and thus available at lower output levels.

13. We note that the revisions described by the Filing Parties are reflected in the revised Tariff sheets submitted to the Commission; however, several ministerial revisions described by the Filing Parties²⁸ were not consistently made in the Small Generator Interconnection Agreement (SGIA). Specifically, the definition of a "study case" and updates to the definition of an "interconnect request" to recognize a material modification to an outstanding interconnection request were not included in the revisions to the SGIA.²⁹ Therefore, we direct the Filing Parties to submit a compliance filing, within 30 days of the issuance of this order, revising the SGIA to reflect these definitions, or in the alternate, explaining why these definitions were excluded from the SGIA.

²⁷ The Commission is examining the requirement that non-synchronous generation provide reactive power in Docket No. RM16-1-000, and by accepting ISO-NE's proposal in this proceeding, we do not intend to prejudge the outcome of any broader reforms. *See Reactive Power Requirements for Non-Synchronous Generation*, 153 FERC ¶ 61,175 (2015).

²⁸ Transmittal at 21-22, 25-26.

²⁹ These ministerial changes appear in the Large Generator Interconnection Procedures and Large Generator Interconnection Agreement of Schedule 22, in the Small Generator Interconnection Procedures of Schedule 23, and in the Elective Transmission Upgrade Interconnection Procedures and Elective Transmission Upgrade Interconnection Agreement of Schedule 25. However, the ministerial changes are not included in the Small Generator Interconnection Agreement of Schedule 23.

14. The Filing Parties' Interconnection Revisions are hereby accepted for filing, subject to condition, effective April 17, 2016, as discussed in the body of this order. The Filing Parties' are hereby directed to submit a compliance filing, within 30 days of issuance of this order, as discussed in the body of this order.

By direction of the Commission.

Kimberly D. Bose,
Secretary.