Gordon van Welie
President and Chief Executive Officer

August 6, 2013

The Honorable Peter Shumlin
Governor of Vermont
109 State Street, Pavilion
Montpelier, VT 05609-0101

Dear Governor Shumlin:

I appreciate the concerns expressed in your letter of July 26, 2013. ISO New England (ISO) takes these matters very seriously. Given your concerns, this letter provides some relevant background about the interconnection and operation of Green Mountain Power's (GMP) Kingdom Community Wind (KCW) facility. As discussed below, while the region has great potential for large-scale renewable energy resources, many of these resources (primarily wind) are choosing to interconnect to weak areas of the New England system. This is certainly the case for GMP's KCW facility. This letter also provides an overview of the ISO's ongoing actions to facilitate the states' renewable energy goals, and the reliable integration of renewable energy resources into the region's electric grid.

Overview

As the independent operator of the region's electric grid, the ISO has the responsibility to dispatch power generators to meet continually changing demand for electricity across New England in a resource-neutral manner. The ISO cannot favor one type of generating resource over another in the dispatch of the power system. If the amount of generation seeking to run in a local area exceeds the limits of the transmission system, the ISO will reduce or curtail generation output to protect the grid from becoming overloaded or otherwise being operated unreliably. In these situations, the first resources to be curtailed are generally those that do not have a commitment to operate in the wholesale electricity market and/or have weaker connections to the transmission system. [1]

During the July heat wave, the ISO called on all types of generators to meet the high demand for electricity and to supply capacity as the region was approaching a capacity deficiency. On Friday the 19th, the peak day for that week, the ISO curtailed KCW to avoid operating the transmission system unreliably. As further discussed below, GMP has not installed the upgrades required to complete its

[1] See the Department of Public Service's July 11, 2013 curtailment recommendations to the House and Senate Committees on Natural Resources and Energy available here: https://leg2.vermont.gov/sites/legislature/EGAC/Shared%20Documents/Recommendation%20Issues%20Related%20Curtailment%20In-state%20EG%20Facilities.pdf

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interconnection, and this contributed to the need to curtail the KCW facility. In this case, curtailing KCW actually allowed more power to be supplied from other renewable resources in the area and not older fossil-fueled generation as your letter suggests. Because of its location, KCW was competing with other wind and hydropower resources for limited space on the transmission system. As GMP knows, while the transmission system in the area where it chose to interconnect can reliably serve the demand for power, it was not designed to accommodate additional generating resources. This is a particular challenge for GMP's KCW facility, and for any resource that interconnects in a similar manner.

Kingdom Community Wind interconnection requirements and operating restrictions
GMP's decisions regarding the location, design, construction, and interconnection of its KCW project have resulted directly in the need for the ISO to curtail the project's output in order to maintain reliability. GMP has known for nearly two years that absent certain required upgrades to the transmission system the output of KCW would be exposed to curtailment. GMP has also known that even after the required upgrades were completed the output of KCW may still be subject to curtailment because of the project's location and interconnection point. [2]

As part of the KCW interconnection process, the ISO worked closely with GMP, VELCO and other affected utilities on a thorough analysis of the transmission system to determine necessary upgrades. A reactive power device was identified as necessary for the reliable interconnection of KCW. The ISO communicated this information to GMP in September 2011.

Throughout the interconnection process, GMP challenged the ISO's determination of the need for a reactive power device. The requirement of a reactive device for the reliable interconnection of the KCW facility to the New England system was memorialized in the facility's interconnection agreement, which GMP challenged before the FERC. On September 4, 2012, the FERC issued an Order accepting the interconnection agreement reflecting the ISO's determination.[3]

At GMP's request, the interconnection agreement provided for the ISO to conduct an operational analysis to determine if KCW could operate with restrictions until the challenged reactive device was installed. In accordance with the interconnection agreement, the ISO performed the operational studies, which determined that KCW could become operational, subject to curtailment of its output, until all required upgrades were in place. KCW became operational on November 16, 2012. GMP has chosen a synchronous condenser to fulfill the reactive power device requirement; however, to date, the device has yet to be installed.

The planning assumptions and analysis that ISO, working closely with GMP, VELCO and other affected utilities, conducted prior to interconnection of KCW accurately identified the issues that the local transmission system is now experiencing during real-time operations. The limitations the project experienced during the recent heat wave are consistent with the KCW interconnection

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[2] See the July 6, 2012, ISO and GMP joint filing of Large Generator Interconnection Agreement (LGIA) with the Federal Energy Regulatory Commission (FERC). *ISO New England*, ISO New England Inc. and Green Mountain Power Corporation – Original Service Agreement No. LGIA-ISO-NE/GMP-12-01 under Schedule 22 of the ISO New England Inc.'s Open Access Transmission Tariff; Docket No. ER12-2214-000 (July 6, 2012), available at: http://www.iso-ne.com/regulatory/ferc/filings/2012/jul/er12-2214-000_6-6-12_kingdow_wind_lgia.pdf.

[3] *See ISO New England Inc.*, 140 FERC ¶ 61,175 (2012), available at: http://www.iso-ne.com/regulatory/ferc/orders/2012/sep/er12-2214-000_9-4-12_order_accept_kingdom_wind_lgia.pdf

agreement and the information that the ISO provided GMP following the completion of the operational analysis. In addition, the location and interconnection point of the KCW facility pose challenges above and beyond those that will be addressed by the required reactive power device. KCW is located in a rural area with little native electric demand and interconnected to the 46 kV sub-transmission system. This means KCW's power must compete with other local generators, including wind resources, for space on the limited transmission system in this area.

ISO actions to facilitate the State's renewable goals

The ISO appreciates the State of Vermont's renewable goals. The ISO has a strong track record of facilitating the New England states' goals of integrating renewable energy resources. New England has great potential for wind generation development. In fact, the amount of nameplate wind generation installed in the region exceeds 700 megawatts, and nearly half of the proposed generation in the region is wind power (approximately 2,000 MW).

In 2009, at the request of the New England Governors, the ISO conducted a technical study in support of the *Governors' Renewable Energy Blueprint*. The ISO study identified significant wind power potential in the region that could help the states achieve their renewable energy goals.

In 2010, the ISO conducted a comprehensive *New England Wind Integration Study* (NEWIS) focused on the operational effects of wind power. The NEWIS identified actions that the ISO and developers would need to take to reliably integrate growing amounts of wind generation in the region. In relevant part, the NEWIS signaled the importance of connecting wind resources to the higher voltage bulk-transmission facilities in New England. The study cautioned that connecting wind resources to lower voltage transmission facilities, as GMP chose, could result in curtailment due to local transmission constraints.[4] As a follow up to the NEWIS, the ISO has enhanced its operating procedures and developed new tools to help developers and system operators reliably interconnect wind power to the electric grid.

As noted earlier, the ISO has facilitated the successful integration of over 700 MW of wind generation in the region and many more projects are expected. I believe we are making very good progress in this area, and the ISO will continue to work with its stakeholders to facilitate the integration of these and other new resources into the region's electric grid.

Integration of small-scale distributed generation resources

In your letter, you also highlighted the growth in distributed generation (DG) resources. This growth is of particular interest to the ISO as well. In June, the ISO announced a new initiative to gather information about the growing amount of DG in New England. This year, discussion at the ISO's annual Regional System Plan public meeting will focus on state policies driving development of DG. The meeting is scheduled for September 12 in Boston. We look forward to the participation of Vermont stakeholders in this important discussion.

Conclusion

I want to thank you for bringing your concerns to the ISO's attention. I would welcome an opportunity to meet with you to have a conversation about the issues raised in your letter. I recognize that renewable energy is an important issue for you, your state, and the region's

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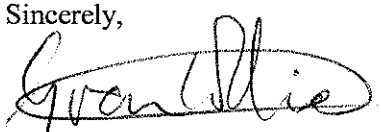
[4] *ISO New England Wind Integration Study,* December 5, 2010; http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/reports/2010/newis_es.pdf.

governors. The ISO looks forward to working with you to find ways to help you achieve your policy goals.

Thank you for your consideration.

Sincerely,



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