

March 5, 2009

**By Hand Delivery**

Honorable Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: *New York Independent System Operator, Inc., Docket No. ER09-\_\_\_-\_\_\_*  
Proposed Tariff Revisions to Enhance Operational Control of Wind  
Resources, Amend Settlement Rules Applicable to Them and Increase  
System Reliability**

Dear Secretary Bose:

In accordance with Section 205 of the Federal Power Act and Part 35 of the Commission's regulations, the New York Independent System Operator, Inc. ("NYISO") respectfully submits proposed revisions to its Market Administration and Control Area Services Tariff ("Services Tariff") and its Open Access Transmission Tariff ("OATT") to enhance the NYISO's operational control of New York wind resources in order to increase the NYISO's ability to reliably and efficiently operate the New York Transmission System. The proposed tariff amendments would allow the NYISO's Real-Time Dispatch ("RTD")<sup>1</sup> market software to direct wind resources to reduce their output when necessary and economically appropriate and would redesign the market settlement rules that apply to wind resources to enforce compliance with these directions. Dispatch-directed output reductions based on the economics of a wind generator's offer enhance market efficiency by avoiding the need for the NYISO to estimate the size and duration of wind output reductions necessary to preserve reliability and by including, in the real-time price, the impact of the economically driven wind output reduction. These proposed tariff amendments have been unanimously approved by the NYISO's Management Committee.

**I. Documents Submitted**

1. This filing letter;
2. A clean version of the proposed revisions to the NYISO's OATT and Services Tariff ("Attachment I"); and
3. A blacklined version of the proposed revisions to the NYISO's OATT and Services Tariff ("Attachment II").

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<sup>1</sup> Capitalized terms that are not otherwise defined herein shall have the meaning specified in Article 2 of the NYISO's Services Tariff.

## II. Background

Approximately 1200 MWs of Intermittent Power Resources that depend on wind as their fuel ("wind resources") have now interconnected to the NYISO system. While this new generation provides welcome fuel diversity and clean technology, its intermittency also presents challenges to maintaining a reliable and secure transmission system. Wind resources have clustered in certain areas of New York State.<sup>2</sup> This clustering can lead to transmission system constraints at times of high wind production and low loads or other operational limitations such as equipment outages. At present, the NYISO does not have an efficient process for using wind resources to resolve these constraints.

When faced with more energy than a constrained system can handle, the NYISO RTD software dispatches down flexible resources with the highest offers that can resolve the constraint. Because wind resources are not currently treated as flexible resources, the NYISO's software does not direct them to reduce their output even if such reductions could relieve the constraint. If no dispatchable resources are available to relieve the constraint, the NYISO must manually identify the wind resource(s) which can best relieve it and notify the local Transmission Owner which in turn instructs the wind resource(s) to go off-line.

Wind resources themselves have reduced their output if they notice significantly negative prices at their location. Such a sudden drop in generation, even on a constrained system, however, can present its own challenges to reliability. Both manual NYISO-led instructions to reduce output and self-initiated wind resource reductions in the face of negative prices are inefficient wind management methods that can be improved upon. Both approaches have the potential to take more energy off the system for longer periods of time than may actually be necessary to resolve the constraint.

Thus, the NYISO is proposing to put wind resources on dispatch and enable RTD to include them among those flexible resources for which a dispatch-down instruction would be useful in resolving a constraint on the transmission system. The NYISO proposes to require that wind resources submit economic offers indicating the price at which they desire to reduce their generation. RTD will then identify units and megawatts that, in the face of a constrained system, are economically appropriate for output reduction in order to maintain reliability. The dispatch system will identify only as much output reduction and duration as is necessary to resolve the constraint -- allowing wind resources to continue to generate as much as the system can handle -- a significant improvement over the manually imposed output reduction measures described above.

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<sup>2</sup> See:

[https://www.nyiso.com/secure/webdocs/committees/oc\\_soas/meeting\\_materials/2009-01-20/Wind\\_Integration\\_Study\\_Plant\\_Perf\\_Actual\\_December\\_09.pdf](https://www.nyiso.com/secure/webdocs/committees/oc_soas/meeting_materials/2009-01-20/Wind_Integration_Study_Plant_Perf_Actual_December_09.pdf)

The NYISO is also proposing revised settlement rules, discussed in detail below, in support of this new functionality. These include new rules denying payment for energy injected by wind resources in excess of a dispatch-down real-time schedule and a penalty for over generating when output reductions are necessary to maintain reliability. In the absence of a dispatch-down instruction, wind resources will continue to be paid for all output delivered to the transmission system and exempt from schedule deviation penalties.

### **III. Tariff Description and Justification**

#### **A. Adding Wind to the Flexible Dispatch**

The NYISO proposes several amendments to enable it to handle wind resources as dispatchable resources in RTD. First, the NYISO proposes to require that wind resources bid as ISO-Committed Flexible generators, providing the NYISO with an energy offer but no minimum generation or start-up bid. This requires amendments to the Services Tariff's Day-Ahead and real-time bidding requirements. Therefore, the NYISO proposes to amend Section 4.2.2(C)(2) and Section 4.4.2(B)(1), the sections that describe the Day-Ahead and Real-Time Energy bid parameters for Dispatchable Resources, respectively. In both sections, the NYISO proposes to add a requirement that wind resources offer their capacity as ISO-Committed Flexible and that they not bid a Minimum Generation or Start-Up Bid. Since these units desire to maximize their energy operation and settlement, they have no economic need to employ Minimum Generation or Start-Up Bids.

The NYISO also proposes to amend Attachment B of the Services Tariff, and the parallel provisions of Attachment J in the OATT,<sup>3</sup> to remove existing references to wind resources as fixed units and to indicate how the RTD will treat them. This proposed treatment will allow these units to be dispatched between zero and the Wind Energy Forecast developed for them by the NYISO.

Specifically, the NYISO proposes to amend Section I.A.1.b of Attachment B of the Services Tariff which describes the first pass of the real-time scheduling process (in which energy schedules are determined). The NYISO proposes dividing this section into four subsections: i) an untitled introduction; ii) Subsection A, "*Upper and Lower Dispatch Limits for Dispatchable Resources Other Than Intermittent Power Resources That Depend on Wind as Their Fuel*"; iii) Subsection B, "*Upper and Lower Dispatch Limits for Intermittent Power Resources that Depend on Wind as Their Fuel*"; and iv) Subsection C, "*Setting Physical Basepoints for Fixed Generators.*"

The untitled introduction consists entirely of the existing introductory language to this Section I.A.1.b. Subsection A contains the existing rules governing the setting of upper and

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<sup>3</sup> For convenience, all references in this letter to Attachment B to the NYISO Services Tariff should be understood as also encompassing references to the parallel provisions of Attachment J to the NYISO OATT.

lower dispatch limits for flexible units. These rules will continue to apply to all non-wind resources.

Subsection B, *Upper and Lower Dispatch Limits for Intermittent Power Resources That Depend on Wind as Their Fuel*, is proposed to contain new language. The first new provision would direct the NYISO to set the lower dispatch point for wind resources at zero and the upper dispatch point at the Wind Energy Forecast for that facility.<sup>4</sup> The NYISO also proposes to include a provision in this Subsection B to allow it to set the upper and lower dispatch limits for the two existing wind resources that were in commercial operation by January 1, 2002, with nameplate capacities of 12 MWs or fewer, equal to their Wind Energy Forecast.<sup>5</sup> This will allow the NYISO to treat these two facilities in the dispatch software as it treats them today.

These are the two oldest and smallest wind resources interconnected to the New York system. To add them to the dispatch software and send dispatch-down instructions would require new communications equipment which, the NYISO understands, would be significantly expensive to install. It may also require on-site personnel not currently necessary at these facilities. The costs of retrofitting their early technology to establish communication links for the purpose of controlling their output or receiving basepoints is not commensurate with the NYISO's need to control such small resources. Should there be an operational need to reduce the output of these two units, the NYISO will contact them through the Transmission Owner and request a reduction in output. Because the capacity of these two facilities is relatively small, the NYISO does not expect this to be an operational burden. Under the circumstances, the NYISO believes that creating an exception for these two facilities should not be deemed to be unduly discriminatory.

The Commission previously approved an exemption from the NYISO's forecasting requirements for these two facilities as a reasonable accommodation for early, small wind turbines that were developed at a time when wind as a central-station generating technology was untested in New York State.<sup>6</sup> The NYISO submits that a similar accommodation in this instance is also reasonable.

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<sup>4</sup> These dispatch limits apply to all of the time horizons over which the Real-Time Dispatch time evaluates unit dispatch. Each RTD run, depending on when it occurs during the hour, has a bid optimization horizon of fifty, fifty-five, or sixty minutes beyond the first point in time that it addresses. The points in time in each RTD run are arranged so that they parallel as closely as possible the NYISO Real Time Commitment software's fifteen minute evaluations.

<sup>5</sup> Although these two facilities do not provide wind speed or wind direction for the development of a meteorologically-based Wind Energy Forecast at their location, the NYISO develops a dispatch for them using the first step in its Wind Energy Forecast, *i.e.* persistence. This is, the NYISO dispatches the system with the expectation that these units will continue the output measured for them when that five-minute dispatch began.

<sup>6</sup> *New York Independent System Operator, Inc.*, 123 FERC ¶ 61,267 (2008).

The NYISO proposes to include in Subsection C, *Setting Physical Basepoints for Fixed Generators*, the balance of the provisions currently contained in Section I.A.1.b(i) of Services Tariff Attachment B. In addition, the NYISO plans to eliminate the existing provision requiring it to treat wind resources as fixed units. To do this, the NYISO proposes to remove the phrase “or, for Intermittent Power resources depending on wind as their fuel, the output level specified by the Wind Energy Forecast, regardless of their actual performance” from the first and third paragraphs of this new Subsection C.

Similarly, the NYISO proposes amending Section I.A.1.b(ii) of Attachment B of the Services Tariff to divide its provisions into two subsections. A new Subsection A, “*Upper and Lower Dispatch Limits for Dispatchable Resources Other Than Intermittent Power Resources That Depend on Wind as Their Fuel,*” contains existing language. A second new Subsection B, “*Upper and Lower Dispatch Limits for Intermittent Power Resources That Depend on Wind as Their Fuel,*” contains the same language the NYISO is proposing for Subsection B in the first pass (*i.e.*, Section I.A.1.b(i)).

The NYISO proposes to implement these revisions to Services Tariff Attachment B as of the proposed effective date, May 12, 2009, even though communications equipment for receipt of Real-Time instructions will not yet be available for most wind resources as of that date (as discussed above). A May implementation date for changes to the NYISO’s RTD can provide significant benefits before communications systems are installed at wind resource sites without adverse impacts.

Applying this dispatch enhancement even before communications equipment is installed will allow the NYISO’s market software to identify, for internal NYISO staff, the units, megawatts, and appropriate time periods for any dispatch-down instructions that may be necessary to resolve constraints in the system. Until the communication systems are installed, these dispatch-down instructions can be manually delivered, as necessary, by the NYISO operators to the wind resource, via the Transmission Owner. Instructions developed by RTD will significantly improve the efficiency of manually delivered instructions by allowing the NYISO operators to reduce no more output than is necessary, and for a period no longer than necessary, to manage the system reliably.

## **B. Amending Settlement Rules for Wind Resources**

### **1. Wind Output Limit**

The NYISO proposes to make wind resources that have received a dispatch-down instruction subject to the same energy settlement rules that currently apply to non-wind resources generating above their real-time schedules. As a general matter, the NYISO does not pay for energy injected into the system in excess of a generator’s Real-Time schedule or basepoint (plus a tolerance)<sup>7</sup> and the NYISO intends to apply this rule to wind resources that have been directed to reduce their output. The NYISO will pay real-time energy prices for all delivered energy up

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<sup>7</sup> See: Services Tariff Section 4.5 (F)

to the resource's real-time basepoint (when such basepoint directs a reduction in output) plus a tolerance which is currently 3% of the resource's upper operating limit, provided that such delivered energy had not been scheduled Day-ahead. No changes to settlement rules are proposed for energy injected into the system by wind resources during intervals in which they have not been sent a dispatch-down instruction.

To implement this proposed new rule, the NYISO proposes to introduce a new term, "Wind Output Limit." The NYISO proposes to add a new Section 2.198a, defining the term "Wind Output Limit" as:

A real-time Dispatch Base Point Signal calculated for an Intermittent Power Resource depending on wind and which, when sent to the Intermittent Power Resource shall include a separate flag indicating that the Base Point Signal directs the Resource to reduce its output. All Intermittent Power Resources, other than those in commercial operation as of January 1, 2002 with name plate capacity of 12 MWs or fewer, shall be eligible to receive a Wind Output Limit.

Although the NYISO will provide real-time schedules to wind resources for every interval that they are scheduled, only those that are accompanied by a separate flag indicating that the Base Point Signal directs the Resource to reduce its output will be a Wind Output Limit. Only these real-time schedules will indicate that the wind resource's real-time settlement will be impacted if they are not followed.

## **2. Compensable Overgeneration**

The NYISO also proposes several amendments to Services Tariff Section 2.23a, the definition of "Compensable Overgeneration." Compensable Overgeneration is energy output that exceeds a Supplier's real-time schedule and for which the Supplier is entitled to compensation. The NYISO proposes to define Compensable Overgeneration for wind resources in intervals in which the NYISO has provided a Wind Output Limit as it defines the term for non-wind Suppliers. That is, Compensable Overgeneration will be limited to actual generation that equals the wind resource's real-time schedule or basepoint plus a tolerance. Further, for all but one unit, the NYISO proposes to limit the application of this new settlement rule to the period beginning November 1, 2009.

The NYISO is proposing to delay the application of this new settlement rule to allow Transmission Owners and wind resources the time to install the communication systems that will allow Transmission Owners to relay Base Point Signals (originally sent by the NYISO to the Transmission Owner) to the appropriate wind resources. The NYISO does not believe it would be appropriate to limit compensation for over generation in intervals that the wind resource has been instructed to reduce its output if the wind resource is not equipped to receive those instructions.<sup>8</sup> For all but one wind resource, the NYISO understands that the eight-month period

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<sup>8</sup> The nature of the software adjustments being proposed require the NYISO to impose new settlement rules on all wind resources or none; incrementally exposing wind resources to

between now and November 1, 2009 will be sufficient for wind resources to work with local Transmission Owners to install the communications equipment necessary to receive Real-Time schedules as basepoints.<sup>9</sup>

The NYISO proposes to delay the implementation of these settlement rules to February 1, 2010 for a single, relatively small (fewer than 30 MW) wind resource that was installed prior to 2006, as the NYISO understands the installation requirements for this older facility are more complicated. Due to the age of this resource, it needs to install more underlying infrastructure before the communication links can be established. This extension was requested by the relevant Transmission Owner and met with no objections from market participants. Under the circumstances, the NYISO believes that creating an exception for this one facility should not be deemed to be unduly discriminatory.

The NYISO proposes to apply the rules described in the second paragraph of Section 2.23a, which indicate that Compensable Overgeneration includes all energy injected in an interval in excess of the real-time schedule, to wind resources for those intervals in which the NYISO has not applied a Wind Output Limit.

The NYISO also proposes moving a comma in the second paragraph of Section 2.23a to clarify that the definition of Compensable Overgeneration described in the second paragraph applies to all Intermittent Power Resources depending on wind as their fuel, and to Limited Control Run of River Hydro Resources that have not bid in a manner that indicate they are available to provide Regulation Service or Operating Reserves. With the changes being proposed here, the NYISO will be requiring Intermittent Power Resources depending on wind as their fuel to bid as flexible resources, a status that would normally allow them to offer Reserves or Regulation Service. Although these units will be on dispatch, the NYISO will flag them as physically not available to provide Regulation Service or Operating Reserves and use their flexible bid type only for dispatch purposes based on their energy offer. Notwithstanding this new bidding regime, they should still be eligible to be paid for all their output in those intervals in which the NYISO has not applied a Wind Output Limit. This small change will ensure that result.

#### **4. Overgeneration Penalties**

The NYISO proposes to add a new section 1.01 to Rate Schedule 3 of the Services Tariff entitled "Overgeneration Charges." Modeled on the existing provision that assesses Persistent Undergeneration Charges on traditional generators whose output does not equal their Real-Time

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new settlement rules as they get their communication equipment installed is not an available option.

<sup>9</sup> When these resources were interconnected to the NYISO transmission system, their settlements did not depend on receiving basepoints and the necessary systems to support basepoint communications were not installed.