

127 FERC ¶ 61,135  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;  
Sudeen G. Kelly, Marc Spitzer,  
and Philip D. Moeller.

New York Independent System Operator, Inc.

Docket Nos. ER09-836-000  
ER09-836-001

ORDER ACCEPTING TARIFF REVISIONS

(Issued May 15, 2009)

1. On March 11, 2009, as corrected on March 18, 2009, the New York Independent System Operator, Inc. (NYISO) submitted, pursuant to section 205 of the Federal Power Act (FPA),<sup>1</sup> proposed revisions to its Market Administration and Control Area Services Tariff (Services Tariff) to integrate energy storage devices into NYISO's day-ahead and real-time regulation service markets.<sup>2</sup> We accept NYISO's tariff sheets to become effective May 12, 2009, as requested.

**I. NYISO's Filing**

**A. Background**

2. NYISO states that it desires to integrate "non-traditional suppliers" of regulation service into its day-ahead and real-time markets. NYISO states that the first of these "non-traditional suppliers" uses energy storage devices such as flywheels or batteries. These technologies act as a load when withdrawing energy or charging and as a generator when injecting energy or discharging. NYISO states that these devices can continuously switch between charging and discharging and can respond to a NYISO signal to charge or

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<sup>1</sup> 16 U.S.C. § 824d (2006).

<sup>2</sup> Regulation Service is the continuous balancing of resources with load to assist in maintaining scheduled interconnection frequency at 60 Hz. Traditionally, this is accomplished by committing on-line generators with output that is raised or lowered as necessary using Automatic Generation Control to follow moment-by-moment changes in load.

discharge very rapidly. However, NYISO states that the resources currently proposed for New York are limited because they can sustain maximum energy withdrawal or injection for no more than 15 minutes. NYISO states that it identifies these resources as Limited Energy Storage Resources (LESRs).

3. NYISO states that LESRs' ability to react almost instantaneously to instructions can assist in addressing the control issues presented by the integration of wind resources into the New York control area. According to NYISO, wind output changes minute-by-minute in an unpredictable manner and these changes in output result in control errors. NYISO states that the integration of LESRs in the regulation service market should improve NYISO's control performance and assist it in meeting or exceeding NERC control performance criteria. NYISO states that it expects LESRs to have cost-reduction benefits through introduction of new competition to the regulation market and displacement of traditional generator-based regulation providers.

4. However, NYISO states that its current market rules and software processes were developed assuming that regulation service could be provided by resources for at least one hour. Therefore, NYISO states that it needs to change its tariff to take advantage of the benefits of LESRs, while treating them comparably to other generation facilities and maintaining NYISO's ability to meet all existing reliability criteria.<sup>3</sup>

#### **B. Proposed Tariff Revisions**

5. NYISO proposes tariff revisions in three principle areas: scheduling, operations and settlements, as well as other changes related to new tariff definitions and clarifications of existing definitions.

6. Regarding scheduling, NYISO states that the real-time schedules of LESR devices will need to be modified to account not only for the economics of the LESR's regulation service offer but to also account for the current energy level in the device. NYISO states that these changes will ensure that regulation service is reliably scheduled at the most economic clearing prices. NYISO proposes that LESRs submit offers to provide regulation service in the day-ahead and real-time markets in the same manner as other suppliers pursuant to section 2.1 of Rate Schedule 3 of the Services Tariff. However, NYISO proposes to add a new section 2.1d which authorizes NYISO to reduce an

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<sup>3</sup> NYISO notes that it received approval from the Northeast Power Coordinating Council (NPCC) to change section 3.7 of NPCC's A-6 operating reserve criteria to clarify that the one hour sustainability requirement from regulation service providers would only be applicable to ten and thirty minute operating reserves. NYISO states that this modification was approved by NPCC on December 29, 2008. *See* filing transmittal letter at note 5.

LESR's real-time regulation service capacity offer to account for its energy storage capability. NYISO further states that it will manage how LESRs use their energy storage capabilities, and that while NYISO is engaged in this process, it may be necessary to reduce LESRs' regulation service offer in real-time. In addition, NYISO proposes to revise section 5.2 of rate schedule 3 to clarify that LESRs that deviate from their day-ahead schedules will be subject to balancing charges by clarifying that all "suppliers" and not just "generators" would be subject to such charges.

7. Regarding operations, real-time deployment of regulation service will need to be modified to not only account for the instantaneous change in the energy level of the energy storage device but to also take advantage of the high speed response characteristics of the device. NYISO states that modifying the regulation service deployment process to use LESRs first in most instances will reduce the NYISO's reliance, for regulation service, on slower responding units. This offers the potential to reduce overall costs associated with providing regulation service.

8. With respect to operations and settlements, NYISO proposes to modify Rate Schedule 3 to clarify that LESRs will only be offering regulation service and not energy, and that because LESRs will not offer energy they will not be eligible for day-ahead and real-time bid production cost guarantee payments, which are related to energy bid prices. In addition, NYISO proposes to not assess Regulation Revenue Adjustment Charges or to pay Regulation Revenue Adjustment Payments. NYISO states that adjustment payments and charges relate to regulation service providers that participate in the energy markets and are therefore not relevant to LESRs.

9. NYISO states that although LESRs will not participate in the energy market, they will be charged or compensated for net energy withdrawals or injections that occur, at the direction of NYISO. NYISO proposes a new section 6.1B to Rate Schedule 3 to describe how the payments and charges will be computed. NYISO also proposes an hourly settlement or charge for hours in which an LESR has injected or withdrawn energy, pursuant to NYISO's instruction to do so. NYISO states that LESRs will also be compensated for the regulation service capacity scheduled for them by NYISO in a manner comparable to traditional generators in the regulation service market. NYISO states that LESRs will receive a payment when the number of MWhs injected is greater than the number of MWhs withdrawn in a given hour and LESRs will receive a charge when withdrawals exceed injections in a given hour. LESRs settle at the product of the net MWhs and the time weighted average Locational Based Marginal Price in that hour at the location of the LESR. NYISO also states that energy balancing provisions will need to be modified to account for the losses inherent in the devices.

10. NYISO also proposes several changes to its tariff definitions. First, NYISO proposes a new definition in section 2.88c of the Services Tariff for LESRs.<sup>4</sup> Second, NYISO notes that the ability of LESRs to provide regulation service is dependent on the amount of stored energy remaining in each interval following the injection or absorption of energy as directed by NYISO. Therefore, NYISO proposes a new definition in section 2.88d of the Services Tariff “Limited Energy Storage Resource Energy Management” to describe the NYISO-directed management of LESRs’ real-time energy injections and withdrawals to maximize their ability to provide regulation service.<sup>5</sup> Third, NYISO proposes amendments to two other existing tariff definitions to reflect the introduction of new LESR rules. In section 2.155a, NYISO proposes to rename the current term “Real-Time Scheduled Energy Injection” as “Real-Time Scheduled Energy” to reflect that LESRs may be instructed to withdraw energy as well as inject it. Also, NYISO proposes to revise the definition of “Station Power” in section 2.172e to clarify that energy used by LESRs for recharging will not be treated as Station Power and thus will be exempt from the special settlement rules applicable to generators under the NYISO station power program. Fourth, NYISO proposes to modify the term “Day-Ahead Margin” in section 2.36a to clarify that day-ahead schedules for regulation service and operating reserves also have day-ahead margin components.

11. NYISO states that it has a performance variable “ $K_{PI}$ ” that it uses to measure metered performance of regulation service providers. NYISO states that the  $K_{PI}$  value normally varies between 0.0 and 1.0, with 1.0 being perfect performance. Initially, NYISO proposes to amend section 5.4 of rate schedule 3 to set the  $K_{PI}$  variable to 1.0 for LESRs to insulate them from performance adjustments until NYISO is satisfied that its metering technology for LESRs is sufficient to accurately track the rapid responses expected from LESRs. At such time as it is satisfied with the metering data, NYISO states that it will cease setting the  $K_{PI}$  variable to 1.0 for LESRs, will measure the performance of LESRs as it does for all other regulation service providers, and will assign the appropriate  $K_{PI}$  value. NYISO commits to notifying the Commission and market participants of this change.

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<sup>4</sup> “Limited Energy Storage Resources – A Generator authorized to offer Regulation Service only and characterized by limited Energy storage, that is, the inability to sustain continuous operation at maximum Energy withdrawal or maximum Energy injection for a minimum period of one hour. LESRs must bid as ISO-Committed Flexible Resources.”

<sup>5</sup> “Limited Energy Storage Resource Energy Management – Real-time Energy injections or withdrawals scheduled by the ISO to manage the Energy storage capacity of a Limited Energy Storage Resource, pursuant to ISO Procedures, for the purpose of maximizing the Capacity bid as available for Regulation Service from such Resource.”

12. NYISO states that it also proposes to amend Attachment J of the Services Tariff, which describes the eligibility for, and the calculation of, the Day-Ahead Margin Assurance Payments (DAMAP) to address unique issues presented by LESRs.<sup>6</sup> NYISO explains that LESRs may not always be able to provide the regulation service they schedule in the day-ahead market due to the energy storage limitations that may be experienced in real-time. NYISO states that, as a rule, when a facility's storage limitation reduces the regulation service that can be offered, NYISO will engage in LESR Energy Management to bring the facility back to full regulation service capability. In this situation, NYISO proposes that LESRs be required to buy out of their day-ahead contracts for regulation service without DAMAP protection. NYISO states that “this recognizes the limited storage of LESRs and levels the playing field between LESRs and traditional regulation service suppliers.”<sup>7</sup> However, during scarcity intervals when NYISO has reduced a LESRs’ regulation service offer, but is not pursuing LESR energy management in order to avoid aggravating the scarcity situation, and when the continuation of the LESR's reduced regulation service capacity assists the NYISO in maintaining system security and reliability, NYISO proposes to provide a DAMAP.

13. Finally, NYISO proposes to modify section 4.1.6 of its Services Tariff regarding “Customer Responsibilities” to establish that LESRs are responsible for paying NYISO’s charges for operational costs based on actual energy injections, which is the same basis as that of traditional generators.

14. NYISO's proposed tariff amendments have been unanimously approved by the stakeholder Management Committee and were endorsed by the NYISO's independent Board of Directors.

## **II. Notice of Filing and Responsive Pleadings**

15. Notice of NYISO’s March 11, 2009 filing was published in the *Federal Register*, 74 Fed. Reg. 12,348 (2009) with comments, interventions, and protests due on or before April 1, 2009. By notice of March 19, 2009, the comment period was extended to April 8, 2009. Independent Power Producers of New York, NRG Power Companies,<sup>8</sup>

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<sup>6</sup> NYISO states that DAMAP are generally available to suppliers when NYISO has to reduce their day-ahead schedules for energy and/or operating reserves to maintain the security and reliability of the New York control area.

<sup>7</sup> NYISO March 11, 2009 Filing at 8.

<sup>8</sup> The NRG Power Companies consist of NRG Power Marketing LLC, Arthur Kill Power LLC, Astoria Gas Turbine Power LLC, Huntley Power LLC, and Oswego Harbor Power LLC.

and New York Transmission Owners<sup>9</sup> filed timely motions to intervene. The Beacon Power Corporation and AES Eastern Energy, L.P. filed timely motions to intervene and comments in support of NYISO's filing. There were no protests or adverse comments.

16. Beacon Power comments that it supports NYISO's proposed tariff revisions because they eliminate barriers for LESRs to participate in the regulation service market and will effectively integrate LESRs into the NYISO market through the scheduling, operational and settlement tariff revisions. Beacon Power states that it commends NYISO for its innovative proposal and adds that other ISOs would benefit from adopting a similar approach. AES also comments that it supports the tariff revisions and commends NYISO staff for working with it to draft tariff revisions that will efficiently utilize LESRs to provide regulation service.

### **III. Discussion**

#### **A. Procedural Matters**

17. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2008), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

#### **B. Commission Determination**

18. The Commission finds that NYISO's proposed tariff revisions are just and reasonable and not unduly discriminatory or preferential. Accordingly, NYISO's proposed revisions are accepted, to become effective May 12, 2009, as requested.

19. We find that the proposed tariff revisions to incorporate LESRs will benefit NYISO's markets by providing them with a new source of regulation service with unique operational characteristics that enable very fast responses to needs for regulation. The proposed tariff revisions further the Commission's goal of improving competition by allowing non-generating regulation service providers to participate in organized markets on comparable terms as generation resources. The revisions also further NYISO's past commitments to integrate energy storage resources into its markets.

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<sup>9</sup> The New York Transmission Owners consist of Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Long Island Power Authority, New York Power Authority, New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation d/b/a National Grid, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation.

20. As noted in NYISO's proposal to enhance operational control of New York's wind resources in Docket No. ER09-802-000,<sup>10</sup> wind resources' output changes and such variability increases the need for regulation service that can respond quickly to changes in output. We recognize that these LESRs can assist in the effective integration of wind resources into the New York control area. Further, the integration of LESRs in the regulation service market should improve the NYISO's control performance and assist it in meeting or exceeding NERC control performance criteria.

21. The Commission appreciates NYISO's collaborative efforts with stakeholders in developing tariff provisions that accommodate the unique characteristics of energy storage devices and remove barriers that may preclude LESRs from participating in the regulation market on a comparable basis with other regulation providers.

The Commission orders:

NYISO's proposed tariff revisions are hereby accepted, to become effective May 12, 2009, as requested.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

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<sup>10</sup> See NYISO March 5, 2009 Filing, Docket No. ER09-802-000.