April 20, 2018

By Electronic Delivery

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

Re: ***New York Independent System Operator, Inc.*****, Proposed Services Tariff Amendments Related to Solar Energy Forecasting; Docket No. ER18-___-___**

Dear Ms. Bose:

Pursuant to Section 205 of the Federal Power Act,[1] and Part 35 of the regulations of the Federal Energy Regulatory Commission ("Commission"),[2] the New York Independent System Operator, Inc. ("NYISO") hereby submits proposed amendments to its Market Administration and Control Area Services Tariff ("Services Tariff") related to the NYISO's solar energy forecasting for the New York Control Area ("NYCA").[3] The proposed amendments address: (i) charges to Intermittent Power Resources that depend on solar energy as their fuel and directly participate in the NYISO-administered wholesale markets ("solar resources") for the forecasting service costs incurred by the NYISO; and (ii) requirements for such resources to provide certain meteorological data utilized in the forecasting.

The NYISO also proposes to eliminate the existing 3,300 MW cap on Intermittent Power Resources in the NYCA that depend on wind as their fuel ("wind resources") that are eligible for: (i) an exemption from persistent under-generation charges; and (ii) payment for all Energy delivered to the wholesale market (together, "the special market rules").

The NYISO Management Committee unanimously approved the proposed revisions on January 31, 2018. The NYISO respectfully requests that the proposed revisions become effective on June 20, 2018 (*i.e.*, the day following the end of the statutory 60-day notice period).

[1] 16 U.S.C. §824d.

[2] 18 C.F.R § 35 *et seq.* (2017).

[3] Capitalized terms that are not otherwise defined herein shall have the meaning specified in the Services Tariff.

I. Documents Submitted

1. This filing letter;

2. A clean version of the proposed revisions to the NYISO's Services Tariff ("Attachment I"); and

3. A blacklined version of the proposed revisions to the NYISO's Services Tariff ("Attachment II").

II. Background and Justification

A. Solar Energy Forecasting Mechanism and NYISO Cost Recovery

The NYISO procures centralized energy forecasting services for NYCA-interconnected solar resources and wind resources. Since 2008, NYISO has recovered the costs incurred for wind forecasting services from wind resources pursuant to Rate Schedule 7 of the Services Tariff.[4] The NYISO's wind forecasting consultant uses data the Services Tariff requires that wind resources provide, together with national and regional meteorological reports, information about the technical capabilities of each wind resource, and data on each wind resource's realtime output to produce resource-specific energy output forecasts (in MWh).

In 2017, in anticipation of the expected growth in solar energy projects in New York State,[5] the NYISO began procuring a centralized solar energy forecast for each of the eleven NYISO Load Zones and for each solar resource. The Load Zone-level forecast is used to forecast energy production from behind-the-meter solar energy resources[6] and the resource-specific forecast is used to forecast energy production from solar resources (*i.e.*, in-front-of-the-meter or grid-scale resources).[7]

Consistent with the existing rules for wind resources, the NYISO proposes to require each solar resource to participate in the solar energy forecasting program. The NYISO also proposes to revise Services Tariff Rate Schedule 7 (Section 15.7) to include recovery of the costs incurred by the NYISO to procure and administer the centralized solar energy forecast from solar

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[4] *See* Services Tariff Rate Schedule 7 (Section 15.7) and *New York Independent System Operator, Inc.*, 123 FERC ¶ 61,267 (2008).

[5] The NYISO's interconnection queue currently includes more than 40 proposed grid scale solar projects totaling approximately 1,500 MWs of installed capacity. *See* NYISO Interconnection Queue available in the Interconnection Studies folder at http://www.nyiso.com/public/markets_operations/services/planning/documents/index.jsp.

[6] Behind-the-meter solar energy resources reduce demand for power from the bulk electric system as consumers install on-site systems to meet a portion of their electricity needs.

[7] In-front-of-the-meter solar resources interconnect to the bulk electric system in the NYCA.

resources.[8] The proposed charges to solar resources to recover such costs will be assessed each Billing Period.

The existing forecasting fee charge assessed to wind resources is comprised of a fixed component and a variable component, as accepted by the Commission in 2008.[9] The fixed component is $500 per month and the variable component is currently $7.50/MW of nameplate capacity per month.[10] In expanding Rate Schedule 7 to include the recovery of NYISO-incurred costs for forecasting service from solar resources, the NYISO proposes to apply the same $500 fixed fee component and to reduce the per MW charge to $6.20 per MW of nameplate capacity. The fixed component and reduced variable component will be charged to both wind and solar resources. The proposed reduction to the variable component of the charge is intended to better align the fees collected with the going-forward forecasting service costs the NYISO expects to incur. The revised fees will begin to apply with the invoice for the month following the month in which the proposed revisions become effective.

The fixed fee and proposed variable charge are intended to reflect the NYISO's cost of procuring and administering the centralized forecasting services. Use of a variable cost component promotes equity in ensuring that smaller Intermittent Power Resources are charged a reasonable amount that is also proportionate to the amount of energy they are providing to the NYCA, while ensuring that the larger resources contribute an amount in proportion to their size.

B. Required Submittal of Meteorological Data, and Penalties for Failure to Provide Such Data to the NYISO

The NYISO proposes that solar resources be required to provide certain meteorological data used by the forecasting program. Specifically, the NYISO proposes to require each solar resource to provide data on plane of array irradiance and back panel temperature. This data provision requirement is consistent with the requirements outlined by the Commission in Order No. 764[11] and is comparable to the existing data submission requirements for wind resources. Provision of this data will improve NYISO's ability to develop site-specific energy forecasts for solar resources that participate in the NYISO-administered wholesale energy markets.

The NYISO also proposes to impose daily financial sanctions on solar resources that fail to provide the required data and that do not cure that failure after notice and expiration of a reasonable cure period. These same financial sanctions currently apply to wind resources. The

[8] Rate Schedule 7 of the Services Tariff is currently limited to the recovery of NYISO incurred costs for centralized wind energy forecasting services from wind resources.

[9] *See New York Independent System Operator, Inc.*, 123 FERC ¶ 61,267 (2008).

[10] The charge is not assessed to wind resources in commercial operation as of January 1, 2002 with a nameplate capacity of 12 MWs or fewer, thereby providing an exemption to the first two wind farms sited in New York State.

[11] *Integration of Variable Energy Resources*, Order No. 764, 139 FERC ¶ 61,246 at P 177 (2012).

daily sanctions are set at a level equal to the greater of $500 or $20/MW of nameplate capacity per day until the failure to provide data is cured. The minimum daily penalty of $500 is designed to encourage non-compliant resources to promptly fix their equipment. The variable fee of $20/MW balances the need to impose larger penalties against larger resources and the need to avoid penalties that are so onerous they could negatively impact decisions to site resources in New York State.

C. Removing the Existing 3,300 MW Cap on Wind Resources Eligible for Special Market Rules

The NYISO currently applies special market rules to Limited Control Run-of-River Hydro Resources and wind resources within the NYCA that were in operation on or before November 18, 1999, plus up to an additional 3,300 MW of such resources commencing operation after such date.[12] The special market rules provide: (i) an exemption from persistent under-generation charges; and (ii) payment for all Energy delivered to the wholesale market. The NYISO proposes to eliminate the 3,300 MW cap on the amount of additional intermittent resources that can be eligible for the special market rules.

The cap on eligible resources was implemented to allow for their orderly development and participation in the wholesale energy markets, while affording the NYISO time to study the reliability impacts of higher levels of wind resource penetration. Since the cap was increased to 3,300 MW in 2008,[13] the NYISO studied the technical impacts of increasing the penetration of wind resources in 2010 and again in 2016.[14] Both studies concluded that NYISO can reliably integrate significantly higher levels of wind resources.[15] Given the findings of NYISO's prior

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[12] The NYISO gradually increased the level of the applicable cap from 500 MW up to the current 3,300 MW over time. *See e.g., New York Independent System Operator, Inc.*, 118 FERC ¶ 61, 68 (2007) and *New York Independent System Operator, Inc.*, 123 FERC ¶ 61,267 (2008).

[13] *New York Independent System Operator, Inc.*, 123 FERC ¶ 61,267 (2008).

[14] *See,* https://www.nyiso.com/public/webdocs/media_room/press_releases/2010/Child_New_York_Grid_Ready_for_More_Wind_093010/GROWING_WIND_-_Final_Report_of_the_NYISO_2010_Wind_Generation_Study.pdf and http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Special_Studies/Special_Studies_Documents/Solar%20Integration%20Study%20Report%20Final%20063016.pdf at page 2 ("This study follows on the work of the NYISO's 2010 Wind Study, which concluded that the NYCA could reliably accommodate up to 8,000 MW of wind resources.").

[15] In 2016, the NYISO found the bulk power system can reliably manage over the five-minute time horizon the increase in net load variability associated with the solar PV and wind penetration levels studied (*i.e.*, up to 4,500 MW wind and 9,000 MW solar PV). The penetration values studied are not intended to reflect a ceiling for the integration of intermittent resources but are an achievable target in the next 5 to 15 years, assuming a reasonable amount of transmission can be built to interconnect the resources. *See* http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Special_Studies/Special_Studies_Documents/Solar%20Integration%20Study%20Report%20Final%20063016.pdf at page 47.

studies related to integrating Intermittent Power Resources, a cap on the amount of resources that qualify for the special market rules is no longer necessary.[16]

III. Description of Proposed Services Tariff Revisions

A. Services Tariff Section 2.3

The NYISO proposes revisions to the definition of "Compensable Overgeneration" in Section 2.3 of the Services Tariff. The proposed revisions clarify the existing tariff language to more clearly identify the list of generator types that may be paid for all Energy actually injected. The proposed revisions also remove the 3,300 MW cap on additional intermittent renewable resources that can be eligible for Compensable Overgeneration, as discussed in Section II.C above.

B. Services Tariff Section 5.8

The NYISO proposes revisions to Section 5.8 of the Services Tariff to require solar resources to maintain and collect certain meteorological data required for energy forecasting, as further described in Section II.B above. The NYISO proposes that solar resources be: (i) required to collect and provide plane of array irradiance and back panel temperature data; and (ii) responsible for the cost of installing and maintaining equipment and software necessary to collect and provide such data. The proposed revisions also provide that solar resources could be subject to financial sanctions for failure to provide the required data. These proposed revisions align with the existing tariff requirements for wind resources.

C. Services Tariff Rate Schedule 3-A (Section 15.3A)

The NYISO proposes revisions to Rate Schedule 3-A (Section 15.3A) of the Services Tariff to remove the 3,300 MW cap on the level of additional intermittent renewable resources that are exempt from persistent undergeneration charges, as discussed in Section II.C above. The NYISO also proposes ministerial revisions to correct numerical cross-references and to group Intermittent Power Resources that depend on wind, landfill gas, or solar energy as their fuel into the same section of the exemption list.

D. Services Tariff Rate Schedule 7 (Section 15.7)

The NYISO proposes revisions to Rate Schedule 7 (Section 15.7) of the Services Tariff to expand the assessment of central forecasting service charges to include solar resources, as described in Section II.A above. These proposed revisions align with the existing forecasting service charges that are imposed on wind resources. The NYISO also proposes to reduce the cost of the variable component of the forecasting service charge assessed to both wind and solar

[16] The NYISO continues to evaluate the impacts of increasing levels of renewable resource penetration on the bulk power system and operation of the wholesale markets. Such evaluations are utilized to identify any market rules enhancements that may be needed over time to address increasing levels of intermittent renewable resources in New York.

resources to $6.20/MW of nameplate capacity per month to better align the fees collected under Rate Schedule 7 with the forecasting service costs the NYISO expects to incur going forward.

IV. Requested Effective Date

The NYISO respectfully requests that the proposed tariff revisions become effective on June 20, 2018 (*i.e.*, the day following the end of the statutory 60-day notice period).

V. NYISO Stakeholder Review and Board of Directors Approval

The NYISO's Management Committee unanimously approved the proposed revisions on January 31, 2018. The NYISO Board of Directors approved these proposed revisions on February 13, 2018.

VI. Communications and Correspondence

All communications and service in this proceeding should be directed to:

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* Designated to receive service.

VII. Service

The NYISO will send an electronic link to this filing to the official representative of each of its customers, each participant on its stakeholder committees, the New York State Public Service Commission, and the New Jersey Board of Public Utilities. In addition, the complete filing will be posted on the NYISO's website at www.nyiso.com.

VIII. Conclusion

The NYISO respectfully requests that the Commission accept its proposed revisions to the Services Tariff for filing.

Respectfully submitted,

/s/ James H. Sweeney
James H. Sweeney
Senior Attorney
New York Independent System Operator, Inc.

cc: Anna Cochrane
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