

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, DC 20426

OFFICE OF ENERGY MARKET REGULATION

In Reply Refer To  
New York Independent System Operator, Inc.  
Docket No. ER19-467-000

Issued: April 1, 2019

New York Independent System Operator, Inc.  
10 Krey Boulevard  
Rensselaer, NY 12144

Reference: Compliance Filing to Order No. 841

Dear Mr. Campbell:

On December 3, 2018, New York Independent System Operator, Inc. (NYISO) filed tariff revisions<sup>1</sup> to comply with Commission Order No. 841.<sup>2</sup> Please be advised that additional information is necessary to process the filing. Please provide complete responses to the following:<sup>3</sup>

**1) Definition of Electric Storage Resource**

To identify the set of resources that are eligible to use the required participation models for electric storage resources, Order No. 841 revised section 35.38(b) of the Commission's regulations<sup>4</sup> to define an electric storage resource as "a resource capable of

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<sup>1</sup> NYISO submitted revisions to its Market Administration and Control Area Services Tariff (Services Tariff) and Open Access Transmission Tariff (OATT).

<sup>2</sup> *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 841, 162 FERC ¶ 61,127 (2018).

<sup>3</sup> NYISO may file revised tariff records where appropriate.

<sup>4</sup> 18 C.F.R. § 35.28(b).

receiving electric energy from the grid and storing it for later injection of electric energy back to the grid.”<sup>5</sup>

- a. Please provide the rationale for including the phrase “at a specified location” in the definition of Energy Storage Resource. Would this definition prevent the aggregation of Energy Storage Resources?

## **2) Creation of a Participation Model for Electric Storage Resources**

Order No. 841 added section 35.28(g)(9)(i) to the Commission’s regulations to require that each RTO/ISO have tariff provisions providing a participation model for electric storage resources consisting of market rules that, recognizing the physical and operational characteristics of electric storage resources, facilitate their participation in the RTO/ISO markets.<sup>6</sup>

- a. Please explain and provide citations to the relevant proposed tariff language that demonstrate the following. To the extent NYISO intends to comply with Order No. 841 by relying on existing tariff provisions generally applicable to many types of resources, please explain and provide tariff citations to demonstrate that such provisions will apply to electric storage resources as required by Order No. 841.
  - i. How does NYISO’s dispatch-only model account for the physical and operational characteristics of an Energy Storage Resource with, for example, a set minimum or maximum run time, or a set minimum or maximum charge time, as defined in Order No. 841? Please provide additional explanation, including a numerical example, of how Roundtrip Efficiency would ensure NYISO’s scheduling efficiency of an Energy Storage Resource.
  - ii. How does NYISO propose to allow an Energy Storage Resource to modify its Roundtrip Efficiency over time (e.g., across seasons or as the resource ages)?

## **3) Eligibility of Electric Storage Resources to Participate in the RTO/ISO Markets**

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<sup>5</sup> Order No. 841, 162 FERC ¶ 61,127 at P 29.

<sup>6</sup> *Id.* P 51.

Order No. 841 added section 35.28(g)(9)(i)(A) to the Commission's regulations to require that each RTO/ISO have tariff provisions providing that a resource using the participation model for electric storage resources is eligible to provide all capacity, energy, and ancillary services that it is technically capable of providing, including services that the RTOs/ISOs do not procure through an organized market, such as blackstart, primary frequency response, and reactive power services.<sup>7</sup>

- a. Please explain and provide citations to the relevant proposed tariff language that demonstrate whether Energy Storage Resources would also be eligible to provide reactive power and black start services. Please explain why or why not. To the extent NYISO intends to comply with Order No. 841 by relying on existing tariff provisions generally applicable to many types of resources, please explain and provide tariff citations to demonstrate that such provisions will apply to electric storage resources as required by Order No. 841.

#### **4) Participation in the RTO/ISO Markets as Supply and Demand**

Order No. 841 added section 35.28(g)(9)(i)(B) to the Commission's regulations to require that each RTO/ISO have tariff provisions to ensure that a resource using the participation model for electric storage resources can be dispatched and can set the wholesale market clearing price as both a wholesale seller and wholesale buyer, consistent with rules that govern the conditions under which a resource can set wholesale price.<sup>8</sup>

- a. Please explain how NYISO's dispatch-only model will allow Energy Storage Resources to effectively reflect commitment costs in their bids, consistent with other Generators. Are there any circumstances that could preclude an Energy Storage Resource from effectively managing its capability to meet obligations through bidding? Please explain.
- b. Similarly, can Energy Storage Resources reflect opportunity costs in their bids, and if so, please explain how. Please explain how NYISO would calculate the reference level for an Energy Storage Resource that would be used as a comparison in its conduct and impact testing for economic withholding, and which commitment costs the reference level would include. For example, would the reference level include opportunity costs (e.g., start up or no load

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<sup>7</sup> *Id.* P 76.

<sup>8</sup> *Id.* P 142.

- costs or forgone revenue from other commercial circumstances)?
- c. How does NYISO's dispatch-only model allow a resource to self-manage its operations through its real-time energy offers?
  - d. On page 55 of its transmittal letter, NYISO states that Energy Storage Resources will not be permitted to engage in dual participation until NYISO develops and implements additional tariff changes at an unspecified date. How does NYISO's proposed model for Energy Storage Resources accommodate the current commercial circumstances of existing Energy Storage Resources? Would resources that have limited commercial obligations (e.g., seasonal retail commitments or other commercial commitments for a portion of the resource's capacity) be prohibited from participating in NYISO markets when unobligated by those commercial circumstances? Would a resource be able to register only a portion of its capacity as an Energy Storage Resource with NYISO and reserve the remaining capacity for other commercial obligations?
  - e. Did NYISO test any modifications or alternatives to its existing SCUC software that would allow for commitment of an Energy Storage Resource with a shorter solve time? If not, please explain why not. How long would it take NYISO to make the necessary changes to the SCUC software to allow Energy Storage Resources to be committed with an acceptable solve time?
  - f. In footnote 45 of the transmittal letter, NYISO states that the need to manage an Energy Storage Resource's Energy Level and to account for Roundtrip Efficiency also affects the amount of time required for the Day-Ahead SCUC software to develop a solution. Please explain. Recognizing that the dispatch-only model alleviates some of the time it takes SCUC to develop a solution, what proportion of the additional time required to solve the SCUC is a result of using a dispatch-only model versus managing these parameters? In other words, could the amount of time saved by foregoing management of these parameters allow for the SCUC to make commitment decisions with an acceptable solve time?
  - g. Please explain whether Energy Storage Resources that have start-up costs will have an opportunity to recover these costs. Are all Energy Storage Resources in NYISO prohibited from submitting start-up bids or recovering no-load costs? If so, is this prohibition consistent with NYISO's treatment of other generators in its markets? If not, why not? Please explain.

## 5) Metering and Accounting Practices for Charging Energy

Order No. 841 required each RTO/ISO to prevent electric storage resources from paying twice for the same charging energy (i.e., they should not have to pay both the wholesale and retail price for the same charging energy).<sup>9</sup>

- a. Please explain and provide citations to the relevant proposed tariff language that demonstrate how NYISO will ensure that Energy Storage Resources are charged only the wholesale rate.

## **6) Buyer Side Mitigation Rules**

Order No. 841 stated that, to the extent that market power concerns arise as a result of electric storage resources de-rating capacity to provide capacity or other services, each RTO/ISO may consider whether it is appropriate to update and/or apply existing market power mitigation processes to electric storage resources to alleviate market power concerns.<sup>10</sup>

- a. Please explain NYISO's reasoning for applying buyer side mitigation rules to Energy Storage Resources under 2 MW and provide support explaining the circumstances under which such resources could affect prices or exercise market power.
- b. Please explain whether, under NYISO's current buyer side mitigation rules, a resource 2 MW or less is subject to mitigation and, if so, whether it can avoid mitigation after passing one of these three buyer side mitigation tests. Or, absent NYISO's proposal, would an Energy Storage Resource 2 MW or less be subject to mitigation automatically because it does not qualify for an exemption? Does NYISO anticipate that most Energy Storage Resources 2 MW or less will receive exemptions under NYISO's proposal to include them in its BSM rules?
- c. Please clarify whether, in the absence of applying buyer side mitigation rules to Energy Storage Resources 2 MW or less, these resources would still be required to participate in NYISO's Class Year process. Please explain whether a resource could be subject to the Class Year buyer side mitigation evaluation and not be subject to the Class Year deliverability analysis.

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<sup>9</sup> *Id.* P 326.

<sup>10</sup> *Id.* P 97.

## 7) State of Charge Management

Order No. 841 required each RTO/ISO to allow resources using the participation model for electric storage resources to self-manage their State of Charge.<sup>11</sup>

- a. Please explain and provide citations to the relevant proposed tariff language to demonstrate how NYISO's proposal to require Energy Storage Resources to use the ISO-Managed Energy Level in order to participate in the capacity market complies with Order No. 841's directive to allow Energy Storage Resources to manage their own state of charge. To the extent NYISO intends to comply with Order No. 841 by relying on existing tariff provisions generally applicable to many types of resources, please explain and provide tariff citations to demonstrate that such provisions will apply to electric storage resources as required by Order No. 841.

## 8) Price for Charging Energy

Order No. 841 added section 35.28(g)(9)(ii) to the Commission's regulations to require that the sale of electric energy from the RTO/ISO markets to an electric storage resource that the resource then resells back to those markets be at the wholesale LMP.<sup>12</sup> With respect to transmission charges, Order No. 841 found that electric storage resources should not be charged transmission charges when they are dispatched by an RTO/ISO to provide a service (such as frequency regulation or a downward ramping service).<sup>13</sup>

- a. Please explain and provide citations to the relevant proposed tariff language that demonstrates how Energy Storage Resources will not be responsible for transmission service charges. To the extent NYISO intends to comply with Order No. 841 by relying on existing tariff provisions generally applicable to many types of resources, please explain and provide tariff citations to demonstrate that such provisions will apply to electric storage resources as required by Order No. 841.
- b. Please explain whether treatment of Energy Storage Resources as negative generation for the purpose of modeling Energy Storage Resources in NYISO's software complicates or prohibits accurate assessment of transmission charges

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<sup>11</sup> Order No. 841, 162 FERC ¶ 61,127 at P 253.

<sup>12</sup> *Id.* P 294

<sup>13</sup> *Id.* P 298.

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for withdrawals.

This letter is issued pursuant to 18 C.F.R. § 375.307(b)(3)(ii) (2018) and is interlocutory. This letter is not subject to rehearing pursuant to 18 C.F.R. § 385.713 (2018). A response to this letter must be filed with the Secretary of the Commission within 30 days of the date of this letter. For your response, please use Type of Filing Code 80, Compliance Filing. In addition, submit an electronic version of your response to Eric Icart, [eric.icart@ferc.gov](mailto:eric.icart@ferc.gov).

Failure to respond to this letter order within the time period specified may result in a further order rejecting your filing.

Issued by: Kurt Longo, Director, Division of Electric Power Regulation – East

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