

February 18, 2020

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., Compliance Filing; Docket Nos.
ER19-467-000, -001, -002

Dear Ms. Bose:

The New York Independent System Operator, Inc. (“NYISO”) hereby submits this compliance filing to fulfill the directives of the Federal Energy Regulatory Commission (“Commission”) in its December 20, 2019, *Order on Compliance Filing* in the above-captioned proceedings (“December 2019 Order”).¹

On December 3, 2018, the NYISO submitted proposed revisions to its Open Access Transmission Tariff (“OATT”) and Market Administration and Control Area Services Tariff (“Services Tariff”) ² to comply with the Order No. 841³ requirements (“December 2018 Filing”).⁴ The Commission largely accepted the NYISO’s proposed tariff revisions in the December 2019 Order, but directed the NYISO to submit a compliance filing to make certain additional tariff revisions.

The December 2019 Order directed the NYISO to submit a further compliance filing with tariff revisions that will apply transmission charges to Energy Storage Resources when that resource is charging for later resale in the wholesale markets, but is not being dispatched by the NYISO to provide a service.⁵ The NYISO requested rehearing of this determination on January

¹ *New York Independent System Operator, Inc.*, Order on Compliance Filing, 169 FERC ¶ 61,225 (2019) (“December 2019 Order”).

² Capitalized terms that are not otherwise defined in this filing letter shall have the meaning specified in the NYISO’s OATT or its Services Tariff.

³ *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 841, 162 FERC ¶ 61,127 (February 15, 2018), 83 Fed. Reg. 9580 (Mar. 6, 2018), Errata Notice (Feb 28, 2018) (“Order No. 841”), order on reh’g, Order No. 841-A, 167 FERC ¶ 61,154 (2019). All citations to Order No. 841 in this compliance filing are to the revised order included with the February 28, 2018, errata notice.

⁴ *New York Independent System Operator, Inc.*, Compliance Filing and Request for Extension of Time of Effective Date, Docket No. ER19-467-000 (December 3, 2018) (“December 2018 Filing”).

⁵ December 2019 Order at P 189.

21, 2020.⁶ Although the NYISO believes the Commission should and must grant rehearing for the reasons stated in its Request for Rehearing, this filing proposes a method by which the NYISO will comply with the Commission's directive if it is required to do so.

The NYISO submits this further compliance filing to address the directives in the December 2019 Order. The proposed tariff revisions included in this compliance filing are expressly required by the December 2019 Order's directives, necessary to implement or clarify the existing tariff language to accommodate those directives, or are non-substantive organizational or clarifying adjustments. Including all of these revisions in this compliance filing will make the NYISO's Order No. 841-related tariff provisions more clear and accurate, and are therefore consistent with Commission precedent.⁷

The NYISO respectfully submits that - with the proposed tariff revisions set forth in this additional compliance filing - it fully complies with the requirements set forth in Order No. 841 and the December 2019 Order.

I. Communications

Communications and correspondence regarding this filing should be directed to:

Robert E. Fernandez, Executive Vice President & General Counsel
Karen Georgenson Gach, Deputy General Counsel
Raymond Stalter, Director, Regulatory Affairs
* Alex M. Schnell, Assistant General Counsel/ Registered Corporate Counsel *
Gregory J. Campbell, Attorney
New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, NY 12144
Tel: (518) 356-6000
Fax: (518) 356-4702
rfernandez@nyiso.com
kgach@nyiso.com
rstalter@nyiso.com
aschnell@nyiso.com
gcampbell@nyiso.com

* -- Persons designated for service.

⁶ See *New York Independent System Operator, Inc.*, Request for Rehearing of New York Independent System Operator, Inc., Docket No. ER19-467-003 (January 21, 2020) ("NYISO's Request for Rehearing").

⁷ The Commission has previously authorized the NYISO to include these kinds of limited, but necessary, clarifications in compliance filings and should follow that precedent here. See *New York Independent System Operator, Inc.*, 125 FERC ¶ 61,206 (2008), *reh'g*, 127 FERC ¶ 61,042 (2009) (accepting proposed additional tariff revisions that were necessary to implement the modifications directed by the Commission and to correct drafting errors or ambiguities in a compliance filing).

II. List of Documents Submitted

The NYISO submits the following documents with this filing letter:

1. A blacklined version of the NYISO Services Tariff sections containing the proposed compliance modifications (“Attachment I”);
2. A clean version of the NYISO Services Tariff sections containing the proposed compliance modifications (“Attachment II”);
3. A blacklined version of the NYISO OATT section containing the proposed compliance modifications (“Attachment III”);
4. A clean version of the NYISO OATT section containing the proposed compliance modifications (“Attachment IV”);
5. An exhibit showing a blackline of the proposed revisions to Services Tariff sections 23.2.1 and 23.4.5.7 that were rejected in the December 2019 Order (“Attachment V”); and
6. An exhibit showing a clean copy of currently effective Services Tariff sections 23.2.1 and 23.4.5.7 (“Attachment VI”).

III. Background

On December 3, 2018, the NYISO submitted its compliance filing in response to Order No. 841. In the December 2018 Filing, the NYISO proposed tariff revisions to establish a new participation model for Energy Storage Resources that recognizes their physical and operational characteristics, and facilitates their participation in the NYISO-administered Energy, Ancillary Services, and Installed Capacity markets. The NYISO subsequently submitted further information in response to the Commission’s request for additional information concerning the December 2018 Filing⁸ and submitted amendments to its initial filing.⁹

On December 20, 2019, the Commission accepted the December 2018 Filing in large part, but rejected certain elements of the NYISO’s proposal and directed that the NYISO submit a further compliance filing with certain tariff revisions. The NYISO submits in this compliance

⁸ *New York Independent System Operator, Inc.*, Response to April 1, 2019 Letter and Notification of Implementation Issues that Necessitate Additional Limited Compliance Tariff Revisions, Docket No. ER19-467-001 (May 1, 2019).

⁹ The NYISO submitted minor amendments to the material in its December 2018 Filing to address two implementation issues concerning the ability of electric storage facilities to participate in the NYISO-administered markets as Generators that are Energy Limited Resources. *New York Independent System Operator, Inc.*, Order No. 841 Compliance Filing, Docket No. ER19-467-002 (May 31, 2019).

filing tariff revisions to address the Commission's directives, which revisions are explained in Part IV below.¹⁰

IV. Proposed Tariff Revisions

A. Proposed Reinstatement of Installed Capacity Market Buyer-Side Market Power Mitigation Measures

The December 2018 Filing included proposed modifications to Services Tariff Sections 23.2.1 and 23.4.5.7 related to its Buyer-Side Market Power Mitigation Measures (the "BSM Rules") for Installed Capacity.¹¹ The NYISO did not propose any new measures, nor did it propose any substantive changes to the exemptions or the tests in the BSM Rules. Rather the NYISO proposed to reinstate the BSM Rules related to "Category III" facilities and apply those rules to the entry of Generators, including Energy Storage Resources, with a capacity of 2 MW or less.¹²

The December 2019 Order rejected the NYISO's proposed reinstatement of the BSM Rules on the grounds that the proposal was outside the scope of the directives of Order No. 841.¹³ Accordingly, the Commission directed the NYISO to submit a compliance filing removing the tariff revisions proposed in Services Tariff Sections 23.2.1 and 23.4.5.7.¹⁴

The NYISO encloses as Attachment V a redlined version of Services Tariff Sections 23.2.1 and 23.4.5.7 showing the removal of all of the revisions to the BSM Rules as proposed in the December 2018 Filing. Subsequent to the December 2018 Filing, the NYISO proposed, and the Commission accepted, revisions to the Services Tariff, including Sections 23.2.1 and 23.4.5.7, in a Federal Power Act Section 205 filing (the "Class Year Filing").¹⁵ The Class Year Filing, which did not propose any changes to "Category III" facilities, sought to expedite and enhance the efficiency of the NYISO's interconnection process and made conforming revisions

¹⁰ On January 21, 2020, the NYISO submitted a request for rehearing concerning two determinations in the December 2019 Order. Specifically, the NYISO requested that the Commission grant rehearing of its determinations that the NYISO is required to: (i) assess transmission charges to Energy Storage Resources participating in its markets when such resources are charging for later injection to the grid but are not being dispatched by the NYISO to provide a service in its markets, and (ii) propose an effective date for its Order No. 841 compliant tariff revisions that is no later than May 1, 2020. *See New York Independent System Operator, Inc., Request for Rehearing of New York Independent System Operator, Inc.*, Docket No. ER19-467-003 (January 21, 2020). Although the NYISO believes the Commission should and must grant rehearing for the reasons stated in its Request for Rehearing, this filing proposes a method by which the NYISO will comply with all of the Commission's directives if it is required to do so.

¹¹ December 2018 Filing at pp 51-54.

¹² *Id.* at 51.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *New York Independent System Operator, Inc.*, Docket No. ER20-638-000 (Jan. 31, 2020) (unpublished letter order).

to the BSM Rules.¹⁶ The tariff revisions proposed in the Class Year Filing became effective on February 18, 2020.¹⁷ The NYISO submits as Attachment VI a clean copy of currently effective Services Tariff Sections 23.2.1 and 23.4.5.7 reflecting the Commission-accepted Class Year Filing, which do not include any of the rules related to “Category III” facilities the Commission rejected in the December 2019 Order.

B. Procedure for Energy Storage Resources to De-Rate Capacity in Order to Meet Minimum Run-Time Requirements

The December 2018 Filing proposed to add a new Services Tariff Section 5.12.1.13 requiring that Energy Storage Resources seeking to qualify as Installed Capacity Suppliers be capable of operating for a minimum of four (4) consecutive hours each day.¹⁸ The NYISO further proposed to permit an Energy Storage Resource to de-rate its maximum capability in order to meet the four hour minimum run-time requirement in compliance with Order No. 841.¹⁹

The December 2019 Order stated that the NYISO’s proposed tariff revisions partially complied with the requirement of Order No. 841 that electric storage resources be permitted to de-rate their capacity in order to meet minimum run-time requirements.²⁰ The Commission determined that the NYISO sufficiently demonstrated that its existing market rules permit Energy Storage Resources to participate as Installed Capacity Suppliers via a four (4) hour minimum run-time requirement, but also concluded that the NYISO did not include in its compliance filing rules that allow Energy Storage Resources to de-rate their capacity to meet the four-hour minimum run-time requirement.²¹ The Commission therefore directed the NYISO to submit further tariff revisions that address the de-rating process.²²

The NYISO proposes revisions Services Tariff Section 5.12.1.13 in compliance with that directive. The proposed revisions (i) explicitly permit an Energy Storage Resource to de-rate its maximum capability in order to meet the four (4) hour minimum run-time requirement, and (ii) requires that an Energy Storage Resource electing to de-rate its maximum capability perform a Demonstrated Maximum Net Capability (“DMNC”) test at an output consistent with its de-rated capability for a period of at least four (4) hours.²³ The specific DMNC testing procedures for all

¹⁶ *New York Independent System Operator, Inc.*, Proposed Tariff Revisions Regarding Interconnection Process Improvements, Docket No. ER20-638-000 (December 19, 2019).

¹⁷ *New York Independent System Operator, Inc.*, Docket No. ER20-638-000 (Jan. 31, 2020) (unpublished letter order).

¹⁸ December 2018 Filing at 44.

¹⁹ *Id.*

²⁰ December 2019 Order at P 94

²¹ *Id.* at P 95.

²² *Id.*

²³ See proposed revision to Services Tariff Section 5.12.1.13 (“An Energy Storage Resource may de-rate its maximum capability in order to meet the four (4) consecutive hour run-time requirement. Energy Storage Resources

ICAP Suppliers are located in Installed Capacity Manual Section 4, and have been updated to include specific testing procedures for Energy Storage Resources consistent with the tariff revisions proposed herein.

C. Energy Storage Resource as Default Manager of State of Charge

The December 2018 Filing proposed to require ISO-Management of an Energy Storage Resource's Energy Levels (*i.e.*, State of Charge) in the Day-Ahead Market when that Energy Storage Resource is an Installed Capacity Supplier. The NYISO argued that requiring ISO-Managed Energy Levels would allow the NYISO Day-Ahead Market optimization software to evaluate an Energy Storage Resource's unique parameters (including Lower and Upper Operating Limits, Roundtrip Efficiency, and Lower and Upper Storage Limits) over an entire Day-Ahead Market optimization period, and provide the Energy Storage Resource with a physically feasible schedule.

The December 2019 Order rejected the NYISO's proposal on the grounds that the requirement conflicts with the requirement of Order No. 841 that the electric storage resource be the default manager of the resource's State of Charge.²⁴ Consequently, the Order directed the NYISO to (i) remove the requirement that an Energy Storage Resource that is an Installed Capacity Supplier elect the ISO-Managed Energy Level bidding parameter in the Day-Ahead Market, and (ii) make the Energy Storage Resource the default manager of the Resource's Energy Level.

The NYISO proposes two revisions to comply with the Commission's directives. First, the NYISO strikes the previously proposed requirement from Services Tariff Section 5.12.1.13 that an Energy Storage Resource elect the ISO-Managed Energy Level bid parameter in its Day-Ahead Market Bid.²⁵ Next, NYISO also proposes to revise Services Tariff Section 4.2.1.3.4 to identify the Supplier as the default manager of an Energy Storage Resource's Energy Level.²⁶

electing to de-rate their maximum capability shall perform a DMNC test at an output level consistent with its derated capability in accordance with the ISO Procedures (*see* Installed Capacity Manual § 4).”).

²⁴ December 2019 Order at P 172.

²⁵ *See* proposed revision to Services Tariff Section 5.12.1.13 (“For Energy Storage Resources, be capable of running for a minimum of four (4) consecutive hours each day (except for days when it is not capable of doing so because of an outage reported pursuant to Sections 5.12.3, 5.12.5.3, 5.12.4, 5.12.7, and in accordance with ISO Procedures), and elect the ISO Managed Energy Level bidding parameter for each Day-Ahead Market Bid.”).

²⁶ *See* proposed revisions to Services Tariff Section 4.2.1.3.4 (“Consistent with the ISO Procedures, Bids from Suppliers for Energy Storage Resources supplying Energy and Ancillary Services may be required to specify whether the Energy Level will be ISO-Managed or Self-Managed, the Beginning Energy Level, and the Energy Storage Resource's Roundtrip Efficiency, and. An Energy Storage Resource must also specify its Upper and Lower Storage Limits. The Energy Level for an Energy Storage Resource shall be managed by the Supplier unless the Supplier elects, in its Bids, to be ISO-Managed.”).

D. Application of Transmission Charges to an Energy Storage Resource when the Resource is Withdrawing Energy for Later Injection to the Grid and not Providing a Wholesale Market Service

The December 2019 Order directed the NYISO to submit a further compliance filing with tariff revisions that will apply transmission charges to Energy Storage Resources when that resource is charging for later resale in wholesale markets, but is not being dispatched by the NYISO to provide a service, and explain how such charges would be calculated.²⁷ The NYISO's pending Request for Rehearing seeks rehearing of this determination. As explained in the NYISO's Request for Rehearing, this directive does not constitute reasoned decision-making because the NYISO's proposed approach in its December 2018 compliance filing aligns with its existing rate structure for transmission charges assessed to resources in the New York Control Area ("NYCA") that withdraw energy at a node for later injection in the grid, and because the directive is inconsistent with the approach accepted by the Commission for the California Independent System Operator ("CAISO").²⁸ The NYISO's December 2018 Filing proposed a design that aligns with its existing rate structure for transmission charges to load resources in the NYCA that withdraw energy at a node for later injection to the grid. Although the NYISO believes the Commission should and must grant rehearing for the reasons stated in its Request for Rehearing, this filing proposes a method by which the NYISO will comply with the Commission's directive if it is required to do so.²⁹

Customers in the NYCA currently pay three transmission-related charges based on their Energy withdrawals. First, all Customers that withdraw Energy pay a Transmission Usage Charge ("TUC") as a component of Day-Ahead and Real-Time LBMPs, in accordance with OATT Section 2.7.2.2. Second, Customers that withdraw Energy in real-time to serve Load pay a Transmission Service Charge ("TSC") directly to a Transmission Owner based on OATT Section 2.7.2.1.³⁰ Third, on behalf of the New York Power Authority ("NYPA"), NYISO assesses a NYPA Transmission Adjustment Charge ("NTAC") to Customers that withdraw Energy in real-time to serve Load, as described in OATT Section 2.7.2.4.³¹

²⁷ December 2019 Order at P 189.

²⁸ See NYISO's Request for Rehearing at pp. 4-13.

²⁹ The NYISO is currently developing a software solution to effectuate the tariff revisions proposed in the instant filing. In the event that the Commission denies the NYISO's Request for Rehearing and requires that the NYISO assess transmission charges to Energy Storage Resources as described, the calculation and assessment of such charges may be completed manually for a period of time before the software design and testing is completed. Whether the calculation and assessment of such transmission charges is completed manually, and for how long, will depend on the effective date of these tariff revisions, as described in Part H below.

³⁰ The TSC provides for the Transmission Owner's recovery of the costs of its transmission facilities. See OATT Section 1.20 ("Transmission Service Charge ("TSC"): A charge designed to ensure recovery of the embedded cost of a transmission system owned by a Member System.").

³¹ The NTAC provides for NYPA's recovery of its transmission service revenue requirement. See OATT Section 1.14 ("NYPA Transmission Adjustment Charge ("NTAC"): A surcharge on all Energy Transactions designed to recover the Annual Transmission Revenue Requirement of NYPA which cannot be recovered through its TSC, TCCs, or other transmission revenues, including, but not limited to, its ETA revenues.').

Under the rules proposed in NYISO's December 2018 Filing, Energy Storage Resources will pay the TUC whenever they are withdrawing Energy to charge. The TUC is the congestion and loss component of the LBMP that the NYISO develops. It will always be included in the LBMP calculated for withdrawals at the Energy Storage Resource's location. The TUC is included in the Day-Ahead LBMP and Real-Time LBMP and, therefore, will be paid by Energy Storage Resources whenever they purchase Energy in the Day-Ahead or Real-Time Markets at their nodal location. In response to the Commission's directive, the NYISO proposes to clarify in OATT Section 2.7.2.2.4 that the TUC is paid by all Customers purchasing Energy from the LBMP Market. No other revisions to the NYISO's December 2018 Filing are necessary to ensure that the NYISO charges the TUC to Energy Storage Resources consistent with the Commission's instructions.

To address the Commission's directive that it assess the TSC and NTAC to Energy Storage Resources when an Energy Storage Resource is charging for later resale but is not being dispatched to provide a service, the NYISO proposes revisions to its OATT such that Energy Storage Resources will be subjected to the TSC and NTAC for their Actual Energy Withdrawals³² in the Real-Time Market when the resource is not providing a service. The proposed revisions to Sections 2.7.2.1.5 and 2.7.2.4.4 of the OATT first identify when an Energy Storage Resource is providing a "service" to the NYISO. An Energy Storage Resource is providing a service to the NYCA when it: (1) receives a real-time Operating Reserves schedule; or (2) receives a real-time Regulation Service schedule; or (3) is operating and is a qualified Supplier of Voltage Support Service; or (4) is dispatched as Out-of-Merit to meet NYCA or local system reliability.

The NYISO will use Real-Time Market schedules to determine if an Energy Storage Resource is providing Operating Reserves and/or Regulation Service at the same time it is withdrawing Energy. For each Real-Time Dispatch interval (typically 5 minutes in duration) that an Energy Storage Resource is withdrawing Energy, the NYISO will check to see if that resource also has a schedule to provide Operating Reserves or Regulation Service. If an Energy Storage Resource is a qualified Supplier of Voltage Support Service consistent with the Services Tariff Section 15.2, then the Energy Storage Resource is required to provide Voltage Support Service in every Real-Time Dispatch interval that it is withdrawing or injecting Energy. An Energy Storage Resource may qualify for Voltage Support Service when it can automatically provide the NYISO with Reactive Power on a dynamic basis allowing the resource to automatically produce or absorb Reactive Power whenever it is withdrawing Energy.³³

An Energy Storage Resource is also providing a service in any hour that it is dispatched as Out-of-Merit to meet NYCA or local system reliability. For purposes of an Out-of-Merit designation, the NYISO will consider the resource to be providing a service for an entire hour if

³² See OATT Section 1.1 (Actual Energy Withdrawals include Energy withdrawals measured with a revenue-quality real-time meter).

³³ An Energy Storage Resource that is a Supplier of Voltage Support Service and has Reactive Power control will also produce or absorb Reactive Power whenever it is injecting Energy or actively maintaining a zero schedule (*i.e.*, not injecting or withdrawing). For the purposes of these tariff revisions, withdrawing is the relevant state.

it is dispatched as Out-of-Merit to meet NYCA or local system reliability for any Real-Time Dispatch interval within that hour. This hourly designation is consistent with the way NYISO treats **all** resources that are dispatched as Out-of-Merit to meet NYCA or local system reliability. For example, a Generator is eligible for a real-time Bid Production Cost Guarantee payment for an hour if it is dispatched as Out-of-Merit to meet NYCA or local system reliability for any RealTime Dispatch interval within that hour.³⁴

If an Energy Storage Resource is withdrawing in real-time and is not providing one of the services identified above, then the NYISO will determine the amount of Actual Energy Withdrawals (in MWh) subject to the TSC charge and provide this information to both the Energy Storage Resource and to the Transmission Owner in the transmission district where the Energy Storage Resource is located.³⁵ Each Transmission Owner in the NYCA assesses a TSC based on the Actual Energy Withdrawals by its customers in the Real-Time Market. The TSC will be payable by the Energy Storage Resource directly to the Transmission Owner. The proposed tariff revisions describing this process are set forth in the new OATT Section 2.7.2.1.5.

Also based on the proposed rules described above, the NYISO will charge an NTAC to an Energy Storage Resource that withdraws in real-time without providing a service. Energy Storage Resources in the NYCA will pay the NTAC to the NYISO based on the resource's Actual Energy Withdrawals when it is not providing a service. The proposed tariff revisions describing this process are set forth in the new OATT Section 2.7.2.4.4.

E. Prevention of Double Payment for Energy Withdrawals

Order No. 841 requires RTOs/ISOs to prevent electric storage resources from paying twice—a wholesale rate and a retail rate—for the same Energy withdrawals, and directed the RTOs/ISOs to develop rules under which the electric storage resource would not be charged at wholesale when the resource's distribution utility is unwilling or unable to net out the costs of Energy withdrawn for wholesale market participation.³⁶ The December 2018 Filing did not contain specific language that would prevent a Customer from being invoiced for Energy withdrawals for wholesale market participation under the described circumstances. The NYISO's compliance filing proposed to require each Energy Storage Resource to be directly metered, including those that are co-located with a retail Load, in order to measure Energy Storage Resource Energy injections and withdrawals separately from other activity taking place at the facility.³⁷ This metering configuration will provide the NYISO with accurate data for wholesale market participation. The NYISO also worked with the New York Transmission Owners to determine that they do not intend to charge Energy Storage Resources co-located with

³⁴ See Services Tariff Section 18.4.1.1.3.

³⁵ OATT Section 14.1.17 specifies the Loads that NYPA is authorized to charge its TSC. The NYISO does not expect NYPA to charge the NYPA TSC to any Energy Storage Resources. If NYPA needs to charge its TSC to Energy Storage Resources in the future, the NYISO will be required to revise OATT Section 14.1.7.

³⁶ Order No. 841 at P 326.

³⁷ December 2018 Filing at 61-62.

other retail Load the retail price for Energy withdrawals related to the Energy Storage Resource's wholesale market participation.

The December 2019 Order determined that the NYISO's compliance filing did not demonstrate that the proposed metering and accounting practices were sufficient to prevent an Energy Storage Resource from being invoiced at retail and wholesale for the same Energy withdrawals. Accordingly, the Commission directed the NYISO to submit in a further compliance filing rules under which distribution-connected electric storage resources will not be charged for Energy withdrawals if the distribution utility is unwilling or unable to net out energy purchases associated with wholesale market participation.³⁸

In response to the directives in the December 2019 Order, the NYISO proposes to add a new Services Tariff Section 7.2.8 to address situations where the distribution utility is unwilling or unable to net out from the retail invoice Energy Storage Resource withdrawals for wholesale market participation. Specifically, new Section 7.2.8 provides a mechanism whereby a Customer will be issued a credit on its invoice when the Load Serving Entity (*i.e.*, the "distribution utility") requires payment for Energy withdrawals for wholesale market participation. The credit will be calculated as the product of the Actual Energy Withdrawals of the Energy Storage Resource and the time weighted average Real-Time Market LBMP for the hour at the Energy Storage Resource's generator bus. The credit will only include the cost of the Actual Energy Withdrawals, and will not include any other applicable charges (*e.g.*, Persistent Over-Withdrawal Charges). The NYISO also proposes to assess a charge to the Customer's Load Serving Entity for the same Actual Energy Withdrawals the NYISO credited to the Energy Storage Resource. Assessing the charge to the Load Serving Entity ensures that the costs of the Energy Storage Resource's Energy withdrawals are borne by the appropriate party.

In addition to these tariff revisions, the NYISO is in the process of modifying its Generator registration materials to document when the Energy Storage Resource will be invoiced by the Load Serving Entity for its Energy withdrawals for wholesale market participation. The revised materials will include written acknowledgement by the Market Participant and the Load Serving Entity that Energy withdrawals will be invoiced by the Load Serving Entity. Obtaining this information when an Energy Storage Resource registers to participate in the NYISO-administered markets (and requiring it to be updated when changes occur) will allow the NYISO to enable the appropriate settlements software to apply the crediting mechanism.³⁹

F. Metering Methodology for Energy Storage Resources

The December 2018 Filing identified a small number of new metering requirements specific to Energy Storage Resources, including requirements that (i) all Energy Storage Resources, regardless of their location on the system, be directly metered, (ii) meter data for Energy Storage Resource injections be submitted separately from meter data for withdrawals,

³⁸ December 2019 Order at P 200.

³⁹ If the Customer has not disclosed to the NYISO that the Load Serving Entity is invoicing the Energy Storage Resource for Energy withdrawals prior to issuing an invoice, it may utilize the NYISO's billing dispute procedures in Services Tariff Section 7.4 to challenge the charges levied for Actual Energy Withdrawals.

and (iii) if the Energy Storage Resource is co-located with another load facility, that the Load data the meter authority submits to the NYISO exclude the Energy injections and withdrawals of the Energy Storage Resource.⁴⁰ In the December 2018 Filing, however, the NYISO did not include these Energy Storage Resource-specific rules in the tariff, instead relying on its past practice of including those details in its manuals.

The December 2019 Order acknowledged that the “majority of metering and accounting principles pertaining to other types of resources are not specified in the tariff,” but stated that the unique physical and operating characteristics of Energy Storage Resources necessitates the inclusion of a “basic description of [the] metering methodology” in the tariffs, and references to the specific documents in the ISO Procedures that contain the applicable implementation details.⁴¹

The NYISO proposes to modify Services Tariff Section 13 to comply with the Commission’s directive. In addition to the metering requirements applicable to Energy Storage Resources because they are Generators, the NYISO proposes a new Section 13.2.4 with three rules specifically applicable to Energy Storage Resources: (i) that an Energy Storage Resource (regardless of its location on the grid) must be directly metered,⁴² (ii) that meter data for Energy Storage Resources be submitted in two sets, such that one set comprises all Energy injections, and the second set comprises all Energy withdrawals,⁴³ and (iii) if an Energy Storage Resource is electrically located behind a single point of interconnection as a load facility, that the meter authority must exclude the Energy withdrawals and injections of the Energy Storage Resource from the total Load of the co-located facility.⁴⁴ The three rules are the same as those identified in the December 2018 Filing, and are necessary to account for Energy Storage Resource ability to both inject and withdraw Energy as a Supplier.

G. Dual Participation in Wholesale Markets and Retail Programs

At the time of the December 2018 Filing, the NYISO was working with its stakeholders on a participation model to integrate Distributed Energy Resources (“DER”) and resource Aggregations. The NYISO collaborated with the New York Transmission Owners and other stakeholders to develop appropriate operating procedures and protocols to facilitate simultaneous participation in the NYISO-administered markets and in programs or markets operated to meet the needs of distribution systems (referred to as “Dual Participation”). The operational framework established in those discussions led to the advancement of a set of market rules that will permit Generators (including Energy Storage Resources), Demand Side Resources, and

⁴⁰ December 2018 Filing at 62.

⁴¹ December 2019 Order at P 201. The Commission also required that the NYISO include a basic description of the accounting practices to ensure that Energy Storage Resources are not double charged for Energy withdrawals. *Id.* The tariff revisions implementing that directive are described in Part E of this filing.

⁴² Proposed Services Tariff Section 13.2.4.1.

⁴³ Proposed Services Tariff Section 13.2.4.2.

⁴⁴ Proposed Services Tariff Section 13.2.4.3.

DER located within the NYCA to engage in Dual Participation. The NYISO submitted tariff revisions to effectuate the proposal on June 27, 2019, in Docket No. ER19-2276-000.

The NYISO did not include tariff revisions to permit Dual Participation in its December 2018 Filing in this docket, which the Commission determined was inconsistent with the directives of Order No. 841. The December 2019 Order, however, deferred “further action on Order No. 841 compliance ... until the Commission takes action on the merits of NYISO’s proposal filed in Docket No. ER19-2276-000.”⁴⁵

The Commission subsequently accepted the NYISO’s proposed tariff revisions in Docket No. ER19-2276-000, *et al.*, including the market rules to permit Dual Participation. The Dual Participation rules will become effective on May 1, 2020. The NYISO believes that the Commission’s determination in Docket No. ER19-2276-000, *et al.*, remedies the Commission’s concern identified in this proceeding, and, therefore, no additional NYISO action is required.

H. Proposed Effective Date

The December 2019 Order directed the NYISO to set an effective date of May 1, 2020 for the NYISO’s tariff revisions submitted in the December 2018 Filing. The NYISO’s pending Request for Rehearing seeks rehearing of this determination. The NYISO has also submitted a Motion to Extend Effective Date seeking deferral of the effective date to no later than September 30, 2020.⁴⁶

As explained in the Request for Rehearing and Motion to Extend Effective Date, the NYISO has worked diligently since it submitted the December 2018 Filing to develop the software necessary to effectuate the Energy Storage Resource participation model. While the initial software design was completed earlier this year, substantial software testing and staff training could not commence until the NYISO completed an ongoing upgrade to its Energy Management System (“EMS”) and Business Management System (“BMS”). The NYISO successfully completed and deployed the new EMS and BMS on February 4, 2020.

The Motion to Extend Effective Date requested an effective date of no later than September 30, 2020. The NYISO, however, is endeavoring to complete its software testing and training as soon as practicable, and cannot propose a firm effective date at this time. Therefore, as described in the Motion to Extend Effective Date, the NYISO proposes to submit a compliance filing at least two weeks prior to the effective date that will specify the date on which the revised tariff language will take effect. Consistent with Commission precedent, such filing will provide adequate notice to the Commission and Market Participants of the implementation for integration of Energy Storage Resources.⁴⁷

⁴⁵ December 2019 Order at P 208.

⁴⁶ *New York Independent System Operator, Inc.*, Motion to Extend Effective Date of Compliance Tariff Revisions, Docket No. ER19-467-000 (Feb. 14, 2020).

⁴⁷ *See, e.g., New York Indep. Sys. Operator, Inc.*, 106 FERC ¶ 61,111 at P 10 (2004); Docket No. ER 11-2544-000, *New York Indep. Sys. Operator, Inc.*, Letter Order at 1 (February 10, 2011); Docket No. ER15-485-000,

V. Service

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

VI. Conclusion

Wherefore, the NYISO respectfully requests that the Commission accept this compliance filing, without requiring any modifications.

Respectfully submitted,

/s/ Gregory J. Campbell

Gregory J. Campbell
New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, NY 12144
*Counsel for the New York Independent System
Operator, Inc.*

cc:	Anna Cochrane	Daniel Nowak
	James Danly	Larry Parkinson
	Jignasa Gadani	Douglas Roe
	Jette Gebhart	Frank Swigonski
	Kurt Longo	Eric Vandenberg
	John C. Miller	Gary Will
	David Morenoff	