New York ISO
Independent System Operator

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April 30, 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., Proposed Tariff Revisions Regarding Energy Storage Resource Participation Model; Docket No. ER20-___-000

Dear Ms. Bose:

Pursuant to Section 205 of the Federal Power Act,[1] the New York Independent System Operator, Inc. ("NYISO") hereby proposes certain revisions to its Market Administration and Control Area Services Tariff ("Services Tariff") to enhance its Energy Storage Resource ("ESR") participation model.[2] These proposals are the result of the NYISO's continued efforts to integrate ESRs in its Energy, Ancillary Services and Capacity Markets, and will modify the rules recently accepted by the Commission in Docket No. ER19-467-000, *et al.*[3]

As further explained below, the proposed tariff amendments will: (i) clarify the formulae used to calculate Day-Ahead Margin Assurance Payments for ESRs, (ii) modify the NYISO's method for setting feasible Day-Ahead and Real-Time schedules; (iii) modify the market mitigation measures related to ESR offer caps and mitigation rules, (iv) refine the Day-Ahead Market bidding obligations for ESRs that are Installed Capacity ("ICAP") Suppliers; and (v) enable the NYISO to proactively address possible Day-Ahead Market scheduling concerns related to ESRs use of ISO-Managed Energy Levels.

I. List of Documents Submitted

1. This filing letter;

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

[1] 16 U.S.C. § 824d (2012).

[2] Capitalized terms that are not otherwise defined in this filing letter shall have the meaning specified in Section 1 of the Open Access Transmission Tariff and Section 2 of the Services Tariff, as those terms were revised in the NYISO's Order No. 841 Compliance Filings in Docket No. ER19-467-000, *et al*.

[3] *New York Indep. Sys. Operator, Inc.*, Order on Compliance Filing, 169 FERC ¶ 61,225 (2019).

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

II. Overview

On December 3, 2018, the NYISO submitted a compliance filing in response to Order No. 841 proposing tariff revisions to establish a new participation model for ESRs that recognizes their physical and operational characteristics, and facilitates their participation in the NYISO-administered Energy, Ancillary Services, and Installed Capacity markets.[4] The NYISO subsequently amended its initial filing on May 31, 2019.[5] The NYISO's December 3, 2018 and May 31, 2019 compliance filings are collectively referred to herein as its "Compliance Filings." On December 20, 2019, the Commission accepted the Compliance Filings in large part, but rejected certain elements of the NYISO's proposal and directed the NYISO to submit a further compliance filing.[6] The NYISO submitted its third compliance filing on February 18, 2020.[7]

In developing the software necessary to implement its ESR rules the NYISO has identified the need to clarify and/or revise a small subset of the tariff revisions it submitted in the Compliance Filings. The further changes proposed below will facilitate ESR participation in the NYISO-administered markets.

III. Proposed Tariff Revisions

A. Proposed Clarification of Day-Ahead Margin Assurance Payments

Day-Ahead Margin Assurance Payments ("DAMAP") protect Day-Ahead Margins that are lost when a Generator responds to an instruction to operate in a specific manner for reliability reasons, or offers flexibly in real-time and follows its real-time dispatch. Protecting a Generator's Day-Ahead Margin provides an incentive for it to follow the NYISO's dispatch instruction in real-time. The Compliance Filings included revisions to the Services Tariff that make ESRs eligible for DAMAP when the Resource has been scheduled Out-of-Merit by the NYISO or a Transmission Owner for reliability reasons.[8]

During development of the software to calculate DAMAP for ESRs, NYISO staff identified opportunities to more clearly explain the applicable formulae for ESRs. The Services Tariff Section 25 revisions proposed in this filing clarify and streamline the relevant formulas

[4] *New York Indep. Sys. Operator, Inc.,* Compliance Filing and Request for Extension of Time of Effective Date, Docket No. ER19-467-000 (Dec. 3, 2018).

[5] The NYISO submitted 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).

[6] *New York Indep. Sys. Operator, Inc.*, Order on Compliance Filing, 169 FERC ¶ 61,225 (2019).

[7] *New York Indep. Sys. Operator, Inc.,* Compliance Filing, Docket Nos. ER19-467-000, *et al*. (Feb. 18, 2020).

[8] December 2018 Filing at 40-41. *See also, Services Tariff Section 25.2.1.*

and defined terms. The NYISO specifically proposes revisions to Services Tariff Sections 25.3.1 and 25.3.4.

DAMAP is an hourly payment made up of an Energy contribution, an Operating Reserve contribution, and a Regulation Service contribution.[9] The Energy contribution portion is determined using either of two existing formulas.[10] Determining which formula to apply depends on whether the Generator's real-time Energy schedule is (1) lower than its Day-Ahead Energy schedule, or (2) greater than or equal to its Day-Ahead Energy schedule. An Energy contribution calculation is performed for each Real-Time Market interval and the results are summed to an hourly value. Since an ESR can be scheduled to inject and to withdraw Energy, the NYISO software uses positive and negative Generation values to identify the direction of flow (injection or withdrawal) associated with the Energy schedule.

The NYISO proposes to clarify the language in Section 25.3.1 of the Services Tariff to account for the positive and negative values associated with ESR injections and withdrawals as follows. The first Energy contribution formula will apply (i) when the Generator's Day-Ahead schedule is to inject Energy (*i.e.*, greater than zero MW) and its real-time Energy schedule is lower than its Day-Ahead Energy schedule; or (ii) when the Generator's Day-Ahead schedule is to withdraw Energy (*i.e.*, less than zero MW) and its real-time Energy schedule is greater than its Day-Ahead Energy schedule. This formula calculates the change in margin that results from being scheduled to inject or withdraw ***less*** Energy in real-time compared to Day-Ahead. The second Energy contribution formula will apply (i) when the Generator's Day-Ahead Energy schedule is to inject Energy (*i.e.*, greater than zero MW) and its real-time Energy schedule is greater than or equal to its Day-Ahead Energy schedule; or (ii) when the Generator's Day-Ahead schedule is to withdraw Energy (*i.e.*, less than zero MW), and its real-time Energy schedule is less than or equal to its Day-Ahead Energy schedule; or (iii) when the Generator's Day-Ahead schedule is for zero MW. This formula determines the change in margin that results from being scheduled to inject or withdraw ***more*** Energy in real-time compared to Day-Ahead. Selecting the correct calculation for each scenario, in each interval, is critical for the formula to produce an accurate change in margin based on the difference between the real-time and Day-Ahead Energy schedules. The proposed, more detailed descriptions of Energy schedule changes better reflect the situations that can apply to ESRs, including the possibility that the schedule could change from inject to withdraw or vice-versa, between the Day-Ahead and Real-Time Markets.

The NYISO also proposes revisions to the defined terms in Section 25.3.4 of the Services Tariff. This Section contains the defined terms for the DAMAP formulas. The proposed revisions remove infeasible paths from the formulae, consolidate scenarios, and clarify how certain defined terms will accommodate the positive and negative Energy schedule values associated with ESRs injections and withdrawals.

[9] The NYISO is only proposing changes to the language around the Energy contribution formulas in this filing.

[10] *See* Services Tariff Section 25.3.1.

The NYISO's review also identified necessary changes related to the Fast-Start Resource pricing rules that will be implemented later this year.[11] When the NYISO filed its proposed Fast-Start Resource pricing rules on December 20, 2019,[12] the proposed rules included a revision to allow a Fast-Start Resource that receives a Day-Ahead schedule to submit Minimum Generation Bids in real-time that exceed the dollar component of the Fast-Start Resource's Day-Ahead Bids.[13] However, the NYISO neglected to propose a corresponding revision to Services Tariff Section 25 to make Fast-Start Resources that increase the dollar component of their Minimum Generation Bids in real-time ineligible to receive a DAMAP. A DAMAP is generally reduced or eliminated when Generators decrease their availability in real-time, absent a specific NYISO instruction to do so, to avoid overcompensating a Generator when the Generator's own actions or real-time Bids result in additional real-time profit or reduce the real-time costs a Generator expects to incur to satisfy its Day-Ahead obligations. The NYISO proposes revisions to Section 25.2.2 to make Fast-Start Resources ineligible for DAMAP when the Resource increases its real-time Minimum Generation Bid. The proposed revisions are consistent with the current Services Tariff rules that apply when Generators with Day-Ahead schedules increase their real-time Incremental Energy Bid or Start-up Bid.[14]

B. Procedure for Setting Feasible Real-Time Schedules

As described in the Compliance Filings, the NYISO's Real-Time Dispatch ("RTD") software will use an ESR's real-time Energy Level (also known as its "State of Charge") to produce physically feasible schedules.[15] Real-time Energy Levels will be automatically transmitted to the NYISO via six-second telemetry data.[16] The tariff revisions accompanying the Compliance Filings stated that the NYISO would adjust an ESR's Upper Operating Limit and/or Lower Operating Limit to reflect the ESR's real-time Energy Level in order to permit the RTD to provide a feasible schedule.[17]

In developing the software to effectuate the ESR participation model, the NYISO determined that it was not necessary to adjust an ESR's Upper Operating Limit and/or Lower Operating Limit to achieve feasible real-time schedules. Instead, the RTD software can use the telemetered Energy Level data to directly determine a feasible schedule, rather than using that data to adjust the ESR's upper and lower operating limits.

Therefore, the NYISO proposes to revise Services Tariff Section 4.4.2.1 to state that the RTD will "consider an ESR's Beginning Energy Level in developing a schedule for the binding

[11] *See New York Indep. Sys. Operator, Inc.*, Docket No. ER20-659-000 (Feb. 6, 2020) (unpublished Letter Order).

[12] *New York Indep. Sys. Operator, Inc.,* Compliance Filing, Docket No. ER20-569-000 (Dec. 3, 2018).

[13] The NYISO also proposes ministerial revisions to Sections 4.4.1.2.1 and 25.2.2.5 to remove unnecessary references to Regulation Service.

[14] *See* Services Tariff Sections 25.2.2.4 and 25.2.2.5.

[15] December 2018 Filing at 30. *See also*, Services Tariff Sec. 4.4.2.1.

[16] *Id.*

[17] Services Tariff Section 4.4.2.1.

interval." This revision will ensure that the tariff accurately reflects how the RTD will use an ESR's Energy Level or State of Charge to produce a feasible real-time schedule. Utilizing the real-time telemetered Energy Level values directly is consistent with the intent and purpose of the tariff revisions proposed in the Compliance Filings, and improves the operation of the RTD software by eliminating unnecessary processing steps.

C. Proposed Revisions to Offer Caps, Mitigation, and New Unit Reference Levels for Energy Storage Resources

The NYISO has required Incremental Energy Bid curves to be monotonically increasing since the inception of its Energy market in 1999.[18] This longstanding requirement applies to all Resources, including ESRs. The requirement is, and will continue to be, primarily enforced in the NYISO's Bid validation software. Enforcing the monotonically increasing requirement will become more complex when the ESR rules take effect because NYISO will need to take an ESR's Roundtrip Efficiency into consideration when determining if the steps of an Incremental Energy Bid curve that includes offers to both inject and withdraw Energy are monotonically increasing.

As part of the NYISO's efforts to develop software to implement the ESR-specific mitigation measures and offer cap rules in its Compliance Filings, the NYISO has identified an additional need to account for ESRs' Roundtrip Efficiency in any mitigated or offer-capped Bids it develops. Services Tariff changes proposed in this filing will permit the NYISO to adjust the mitigated and offer capped Bids it develops to better align with the operation of its Security-Constrained Unit Commitment ("SCUC"), Real-Time Commitment ("RTC") and Real-Time Dispatch ("RTD") optimizations. The proposed changes were developed to ensure that the NYISO's application of mitigation or a Bid Restriction[19] to an ESR's Incremental Energy Bid curve, or to some components of that Bid curve, will not result in a mitigated or restricted Bid curve that is no longer monotonically increasing, after accounting for Roundtrip Efficiency. The new concern arises because the SCUC/RTC/RTD optimizations must be able to account for each ESR's Roundtrip Efficiency in determining that ESR's schedule across a Day-Ahead Market day, or its dispatch in the Real-Time Market over the applicable (2.5 hour or 1 hour) scheduling window.

To illustrate the calculation of how the NYISO's optimization engines will perform, assume the Locational Based Marginal Price ("LBMP") at a hypothetical ESR's location is $10/MWh in an hour when the ESR is scheduled to charge, and the ESR's charging efficiency is 80%. In order to be able to inject one MW of Energy to the grid at its location at a later time, the ESR needs to purchase 1.25 MW of Energy from the NYISO markets.[20] In this example, the ESR's cost to obtain one MW of additional stored Energy is ***not*** the $10/MWh LBMP at the ESR's location, it is instead $12.50/MWh. Because all of the NYISO's optimizations

[18] *See, e.g.*, the definition of an Incremental Energy Bid in Section 2.9 of the Services Tariff.

[19] Offer caps are addressed in Sections 21 and 23 of the NYISO's Services Tariff. The term NYISO uses to describe an offer cap in its Services Tariff is a "Bid Restriction." *See* Section 21.1 of the Services Tariff.

[20] 1.25 MWh (withdrawn from grid) * 0.80 (ESR Roundtrip Efficiency) = 1.0 MWh (available for injection by the ESR).

(particularly SCUC, which optimizes schedules over an entire 24 hour Day-Ahead Market day) necessarily consider an ESR's cost of withdrawing Energy in order to inject it later, ESR Bids in the NYISO's markets need to incorporate similar expectations.

The NYISO's validation rules will require ESRs' Bids to be submitted consistent with the efficiency requirement that is illustrated above. If SCUC, RTC or RTD were required to evaluate Bids that they interpret as not being monotonically increasing, it could impact their ability to timely produce the solutions on which the NYISO's Energy and Ancillary Service Markets depend. The described concern only arises when an ESR's Incremental Energy Bid curve includes both Bids to withdraw Energy and Bids to inject Energy. At times when an ESR only Bids to withdraw Energy or only Bids to inject Energy, the concern will not arise and the new rules proposed below will not apply.

Bid Restriction (Offer Cap)

To ensure that any Bid Restriction the NYISO applies to ESR Bids that exceed $1,000/MWh incorporate the ESR's Roundtrip Efficiency the NYISO proposes to add a new rule in Section 23.7.2.5 of its Services Tariff. The proposed new language states that when an ESR's Incremental Energy Bid Curve extends from a Lower Operating Limit that is less than zero MW to an Upper Operating Limit that is greater than zero MW, the ISO will restrict the ESR's Bids to **withdraw** Energy to the lower of (a) a value determined in accordance with the Commissionaccepted methods in Section 23.7.2 of the Services Tariff,[21] or (b) an alternative maximum value that ensures the difference between an ESR's Bids to withdraw Energy and its Bids to inject
Energy incorporates the ESR's Roundtrip Efficiency.

To illustrate how the proposed new rule will operate, assume that an ESR with a Roundtrip Efficiency of 80% submitted a Bid to withdraw Energy if the LBMP at its location is $870/MWh or less, and a Bid to inject Energy if the LBMP at its location is $1100/MWh or more.[22] Further assume that in this example the ESR only demonstrated a cost to inject of $1050/MWh to the NYISO, so the NYISO's Bid Restriction software will restrict the ESR's injection Bid to a maximum of $1050/MWh. The ESR's Bid to withdraw Energy if the price is $870/MWh or less would not ordinarily be subject to a Bid Restriction because it is less than $1000/MWh, but when the NYISO restricts an ESR's injection Bid to $1050/MWh it must also restrict the ESR's Bid to withdraw Energy (the amount the ESR is willing to pay to withdraw Energy) to a maximum of $840/MWh[23] in order to ensure that the ESR's Bid Restricted Incremental Energy Bid curve incorporates the ESR's 80% Roundtrip Efficiency.

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[21] The NYISO is ordinarily required to use cost-based reference levels to determine Bid caps for most Generators when their Bids exceed $1,000/MWh. *See* Section 23.7.2.3 of the Services Tariff.

[22] $1100 MWh (minimum price to inject Energy) * 0.8 (ESR Roundtrip Efficiency) = $880/MWh (maximum LBMP at time of withdrawal), so the ESR's initial offer is consistent with the ESR's Roundtrip Efficiency. However, the claimed $1100/MWh injection costs have not been fully justified in the example, so the NYISO applies an offer cap to the injection Bid.

[23] $1050/MWh (maximum restricted Bid to inject Energy) * 0.8 (ESR charging efficiency) = $840/MWh (maximum restricted Bid to withdraw Energy).

The proposed change to the Bid Restriction is necessary to ensure that the NYISO's implementation of the Bid Restriction is consistent with an ESR's Roundtrip Efficiency and will not conflict with or unduly delay completion of the market optimization performed by SCUC, RTC or RTD.

Economic Withholding Mitigation

Incremental Energy Bids that are $1,000/MWh or less are subject to the NYISO's mitigation measures that address economic withholding. The NYISO applies mitigation by replacing the Bid an ESR submits with a "default bid" that is ordinarily determined using a reference level that the NYISO calculates in accordance with Section 23.3.1.4 of its Services Tariff.

In this filing the NYISO proposes to revise Section 23.4.2.2.1.1 of the Services Tariff to ensure that any mitigation it applies to an ESR's Incremental Energy Bid curve will account for an ESR's Roundtrip Efficiency consistent with the evaluation performed by SCUC, RTC and RTD, producing a mitigated Incremental Energy Bid curve that is monotonically increasing. The proposed Tariff change will only apply when an ESR's Incremental Energy Bid curve includes both Bids to withdraw Energy and Bids to inject Energy.

Proposed new Services Tariff Section 23.4.2.2.1.1 provides as follows:

> If the substitution of a default bid or bid parameter(s) for any portion of the Incremental Energy Bid curve submitted for an Energy Storage Resource would result in a mitigated energy curve that is not consistent with the Energy Storage Resource's Roundtrip Efficiency, then the default bid or bid parameter(s) to inject Energy will be adjusted to the minimum extent necessary to ensure the difference between bids to withdraw Energy and bids to inject Energy incorporate the Energy Storage Resource's Roundtrip Efficiency.

The proposed rule will permit the NYISO to adjust the mitigated Bid it applies "to the minimum extent necessary" to ensure that the difference between an ESR's bids to withdraw Energy and its bids to inject Energy incorporate the ESR's Roundtrip Efficiency. A simplified example illustrating how NYISO will implement the Tariff revision is provided below. It addresses an ESR located in a New York City load pocket on a day when the load pocket is constrained and the NYISO's automated mitigation procedures are in effect.

In this simplified example the ESR submits an Incremental Energy Bid curve that indicates it is willing to pay up to $8/MWh to withdraw Energy, and is willing to inject Energy if it is paid $15/MWh or more. Assuming the ESR has a Roundtrip Efficiency of 80%, the Incremental Energy Bid curve the ESR submitted in this example is monotonically increasing and adequately account for the ESR's Roundtrip Efficiency.

For purposes of this example please assume: (a) the New York City load pocket in which the ESR is located is constrained,[24] (b) the reference level for the injection component of the ESR's Incremental Energy Bid, calculated in accordance with Section 23.3.1.4 of the Services Tariff is $9.50/MWh, (c) the applicable load pocket threshold calculated in accordance with Section 23.3.1.2.2.1 (real-time) or 23.3.1.2.2.3 (Day-Ahead) of the Services Tariff is $1/MWh, and (d) an LBMP impact that exceeds the $1/MWh threshold is determined for the load pocket.[25] Because the ESR's $9.50/MWh reference level plus the applicable $1/MWh load pocket (mitigation) threshold is less than the ESR's $15/MWh Incremental Energy injection Bid, automated mitigation will be applied to the conduct-failing injection component of the ESR's Bid, resulting in a mitigated injection Bid of $9.50/MWh (reduced from $15/MWh), but leaving the ESR's unmitigated $8.00/MWh withdrawal Bid in place.

To determine whether applying the mitigated injection Bid will produce a mitigated Energy curve that is consistent with the ESR's Roundtrip Efficiency, the NYISO will multiply the ESR's accepted ($8/MWh) withdrawal Bid by its efficiency (in this case, by a multiplier of 1.25 to reflect the ESR's 80% Roundtrip Efficiency) to determine the **minimum** injection Bid that would result in a monotonically increasing Incremental Energy Bid curve. The $8/MWh withdrawal Bid times the specified 1.25 ESR Roundtrip Efficiency multiplier results in a minimum Incremental Energy injection Bid of $10/MWh.

The $10/MWh minimum injection Bid that results from the above calculation is greater than the $9.50/MWh reference level the NYISO developed for the first injection step of the ESR's Incremental Energy Bid curve. The proposed Tariff revision will require NYISO to replace the $9.50/MWh reference level with the $10/MWh value when it applies mitigation.[26] The proposed change accounts for the ESR's Roundtrip Efficiency and will better align the NYISO's implementation of Tariff-required mitigation with the market solutions produced by SCUC, RTC and RTD.

New Unit Reference Levels

To incentivize new Generators to interconnect at locations where LBMPs are high, Section 23.3.1.4.3 of the Services Tariff gives new Generators a reference level that is no lower than the average, fuel-adjusted LBMP at the Generator's location was for the twelve months before the new Generator entered service. This incentive applies for the first three and a half years that a new Generator is in-service. This incentive is appropriate for traditional Generators.

[24] This assumption has two important impacts. First, it means the Constrained Area automated mitigation procedures are in effect. Second, it means that mitigation will be applied based on the (ordinarily more restrictive) load pocket mitigation threshold for the load pocket in which the ESR is located.

[25] The NYISO tests for impact in New York City load pockets by replacing all conduct-failing Bids with reference levels for all of the Resources in the load pocket and testing to see if the LBMP impact of the substitutions exceeds the applicable load pocket threshold. *See* Services Tariff Section 23.3.2.1.3. In this simplified, hypothetical example a $1/MWh (or larger) LBMP impact would be required to trigger mitigation in the load pocket where the ESR is located.

[26] If the reference level the NYISO calculated for the ESRs first injection step on its Incremental Energy Bid curve had been $10.50/MWh instead of $9.50, then NYISO would leave the $10.50/MWh reference level in place because the $10.50/MWh value would be consistent with the ESR's Roundtrip Efficiency.

However, it is not a good fit for ESRs (a) because ESRs submit a continuous Incremental Energy Bid curve that includes Bids to both inject and withdraw Energy, and (b) because ESRs' costs are more closely tied to expected (hourly, and even more granular) real-time costs as they change across the market-day. A uniform, average reference level is not a good fit for an ESR.
Therefore, the NYISO proposes to exclude ESRs from the new unit reference level calculation in Section 23.3.1.4.3 of the Services Tariff.

D. Proposed Revisions to Day-Ahead Market Offer Obligations for Energy Storage Resources that are ICAP Suppliers

Services Tariff Section 5.12.7 requires ICAP Suppliers to, on a daily basis, (i) schedule a Bilateral Transaction, (ii) Bid in the Day-Ahead Energy Market, or (iii) notify the ISO of an outage. Combined, the Energy that an ICAP Supplier schedules, Bids or declares to be unavailable must be at least the full amount of capacity sold (the "ICAP Equivalent of UCAP sold").[27] This rule helps maintain reliability by requiring that the Energy backing an ICAP Supplier's capacity be made available to the market through a Bilateral Transaction or a Bid into the Day-Ahead Market; or, when the Resource is not available, the NYISO must be informed of the outage. The Compliance Filings proposed to apply the existing Bid/schedule/notify market rule to ESRs participating in the NYISO-administered Installed Capacity market in order to maintain comparability with other ICAP Suppliers.[28]

The NYISO has since determined that revisions are necessary to Services Tariff Section 5.12.7 to satisfy the intent and purpose of the Bid/schedule/notify rule as it applies to ESRs. Subsequent to its submission of the Compliance Filings, the NYISO recognized that requiring an ESR to schedule a Bilateral Transaction, Bid in the Day-Ahead Energy Market, or declare an outage for the injection portion of its offer curve could allow the ESR to comply with the Tariff requirement as written without making the Energy backing its capacity available. An ESR could achieve this inappropriate result if (a) it does not have adequate Energy to satisfy its ICAP obligation stored at the beginning of the Day-Ahead Market day, and (b) does not submit economic offers to purchase Energy (to charge the ESR) with its Day-Ahead Bids.

The NYISO proposes to amend Services Tariff Section 5.12.7 to add a requirement that Bids for ESRs that are ICAP Suppliers must include the "maximum of the ESR's (i) negative Installed Capacity Equivalent, or (ii) the Lower Operating Limit, such that the amount scheduled, Bid, or declared unavailable reflects the entire withdrawal to injection operating range."
Expanding the market rule to require an ESR's Day-Ahead Bids to include the withdrawal portion of its operating range will align the ESR bidding obligation with the underlying purpose of the Bid/schedule/notify rule and will also help maintain reliability by more accurately reflecting the ESR's refilling or recharging needs in the Day-Ahead Market schedule, and therefore incorporate procuring the Energy required to meet that need.

[27] Services Tariff Section 5.12.7.

[28] December 2018 Filing at 46. The December 2018 Filing inadvertently identified the Services Tariff Section as 5.12.8. The correct Services Tariff Section is 5.12.7.

E. Proposed Revisions to Day-Ahead Market Scheduling Processes

As described in the Compliance Filings, the NYISO's tariffs will provide ESRs with the opportunity to self-manage their Energy Level, or to have the NYISO manage their Energy Level.[29] When an ESR elects to use the ISO-Managed Energy Level Bid parameter in the DayAhead Market, the SCUC will incorporate the ESR's Energy Level constraints into the optimization it performs to produce a least production cost solution for the Day-Ahead Market day.[30] The Energy Level constraints SCUC includes in its optimization when an ESR elects to have ISO-Managed Energy Levels include the Beginning Energy Level, Upper and Lower Storage Limits, and Roundtrip Efficiency.

The Compliance Filings advised the Commission that NYISO was testing the inclusion of ESR Bid parameters, such as Roundtrip Efficiency, in its software systems in order to determine whether there was any impact on performance, including solution times.[31] The NYISO further advised the Commission that if integration of those parameters negatively affected software performance and solution times beyond a reasonable limit, then the NYISO may be required to limit their use.[32] The NYISO has since conducted additional testing on the affect the various ESR Bid parameters have on system performance.

Out of an abundance of caution, the NYISO now proposes tariff revisions that will permit it to suspend the use of the ISO-Managed Energy Level Bid parameter in the Day-Ahead Market when the NYISO determines there is significant risk that including ESRs with ISO-Managed Energy Levels in the SCUC evaluation could delay the completion and posting of the Day-Ahead Market beyond the 11:00 a.m. deadline specified in the Services Tariff.[33] ESRs will still be able to submit Day-Ahead Bids that incorporate Self-Managed Energy Levels.

If the NYISO determines it is necessary to disable the use of ISO-Managed Energy Levels, the NYISO will post a notice to its public website by 4:00 p.m. on the day preceding the day on which the Day-Ahead Market closes.[34] ISO-Managed Energy Levels will remain disabled until the NYISO determines that the condition(s) negatively affecting SCUC performance have been resolved.[35]

When the NYISO disables the ISO-Managed Energy Level functionality the NYISO will inform Suppliers that already submitted Day-Ahead Bids that incorporated ISO-Managed Energy Levels of the change, so that the Suppliers have the opportunity to resubmit their Day-Ahead

[29] December 2018 Filing at 24.

[30] *Id.* at 25.

[31] *Id.* at 28-29 n. 78.

[32] *Id.*

[33] Proposed revisions to Services Tariff Section 4.2.3.

[34] *Id.*

[35] *Id.* The NYISO proposes to post advance notice on its public website before it reinstates Market Participants' ability to use ISO-Managed Energy Levels in ESRs Day-Ahead Bids.

Market Bids utilizing the Self-Managed Energy Levels prior to the Day-Ahead Market close at 5:00 a.m. the following morning. Bids that utilize the ISO-Managed Energy Level Bid parameter after notice is issued and the functionality is disabled will be rejected.

The NYISO does not anticipate the need to utilize the proposed tariff revisions frequently. However, at this time the NYISO cannot accurately predict when it will need to curtail the use of ISO-Managed Energy Levels. The proposed tariff revisions will permit the NYISO to take appropriate steps to mitigate the risk of delayed posting of the Day-Ahead Market, and strikes an appropriate balance between offering bidding flexibility to ESR and DayAhead Market certainty.

IV. Proposed Effective Date

The NYISO respectfully requests Commission action within sixty days from the date of this filing (*i.e.,* by June 29, 2020) in order to provide the NYISO and Market Participants with timely notice of the Commission's decision. Such timely action by the Commission will: (a) allow the NYISO to proceed with developing and deploying the software changes necessary to implement the proposed revisions, and (b) enable to NYISO to make the proposed tariff revisions effective simultaneously with the ESR participation model as described in Docket No. ER19-467-000 *et al*.

The tariff revisions proposed in this filing are intended to take effect in conjunction with the tariff revisions the Commission accepted by the Commission in Docket No. ER19-467-000, *et al*.[36] As described in its February 14, 2020 Motion to Extend Effective Date of Compliance Tariff Revisions in Docket No. ER19-467-000,[37] the NYISO is working diligently to implement the proposed ESR participation model as soon as practicable. The NYISO cannot propose a precise effective date at this time. Consistent with the effective date that the Commission granted in Docket No. ER19-467-000*, et al.*, the NYISO requests a flexible effective date of no later than September 30, 2020, for the tariff revisions proposed herein. Aligning the effective dates of the tariff revisions proposed in this filing with the tariff revisions proposed and accepted in the NYISO's Order No. 841 Compliance Filing in Docket No. ER19-467-000, *et al.*, will allow ESR integration to commence under a clear set of market rules.

The NYISO proposes to submit a compliance filing regarding the tariff revisions contained in this docket and the Tariff revisions the Commission accepted in Docket No. ER19-467-000, *et al.*, at least two weeks prior to the proposed effective date that will specify the date on which all of the revisions will become effective.[38] Consistent with Commission precedent,

[36] *New York Indep. Sys. Operator, Inc.*, Order on Compliance Filing, 169 FERC ¶ 61,225 (2019).

[37] *See New York Indep. Sys. Operator, Inc.*, Motion to Extend Effective Date of Compliance Tariff Revisions (Feb. 14, 2020).

[38] The NYISO is not seeking an expedited decision by the Commission in this filing.

the compliance filing will provide adequate notice to the Commission and Market Participants of the implementation date for the proposed revisions.[39]

V. Stakeholder Approval

The proposed amendments were presented to the NYISO Management Committee on March 25 and April 15, 2020. In each case, the proposed amendments were approved by the Management Committee unanimously with an abstention. The NYISO's Board of Directors approved the proposed revisions for filing with the Commission on April 20, 2020.

VI. Communications

All 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
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VII. Service

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

[39] *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, *New York Indep. Sys. Operator, Inc.*, Letter Order at 2 (January 15, 2015); *New York Indep. Sys. Operator, Inc.*, 151 FERC ¶ 61,057 at P 20 (2015).

VIII. Conclusion

For the foregoing reasons, the NYISO respectfully requests that the Commission accept for filing the proposed revisions to the Services Tariff that are attached hereto within sixty days of the date of this filing with a flexible effective date that will be specified in accordance with Section IV of this filing letter.

Respectfully submitted,

/s/ Gregory J. Campbell

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