

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**ISO New England Inc. and New England Power Pool)
Enhanced Storage Participation Revisions) Docket No. ER19-84-000**

**MOTION TO INTERVENE AND COMMENT OF
THE ENERGY STORAGE ASSOCIATION**

Pursuant to 18 CFR §§385.211 and 385.214, as well as the Notice issued by the Federal Energy Regulatory Commission (“FERC” or the “Commission”) in the above-referenced docket, the Energy Storage Association (“ESA”) seeks to intervene and submit comments on the amendments to the Transmission, Markets and Services Tariff (the “Tariff”) that were filed jointly by ISO New England Inc. (“ISO-NE”) and the Participants Committee of the New England Power Pool (“NEPOOL”) to codify the rules to enable storage technologies to more fully participate in the New England markets.

As detailed below, ESA supports the timeline and, with one exception, the substance of the amendments by which ISO-NE has requested to implement the provisions. As ISO-NE noted, the filed Storage Revisions will greatly facilitate market participation by newer storage technologies. At their core, the Storage Revisions provide the ability for battery storage resources to register in the markets as a Continuous Storage Facility (“CSF”)¹ with their full capabilities and be dispatched to any megawatt (“MW”) level within the resource’s capabilities – from their maximum consumption level to their maximum output level – throughout the

¹ Tariff I.2.2. Definitions.

operating day. Absent these changes, battery storage would be restricted to acting as either a Generator Asset or a dispatchable-asset related demand (“DARD”) in each hour. Pre-designating whether the battery will charge or discharge for an entire hour is extremely sub-optimal for taking advantage of the benefits of battery storage.

While ESA appreciates the hard work ISO-NE has done to create this model and supports timely implementation in Spring 2019 of market rules to facilitate participation of energy storage in the ISO-NE markets, one element of the proposal will restrict the full operation of battery storage in energy markets and must be remedied to ensure that energy storage is fully capable of accessing all of the ISO-NE markets, consistent with Order 841. Specifically, ISO-NE proposes to automatically de-rate the amount of energy that a CSF can discharge into the energy market (called “automatic redeclaration” of Economic Maximum Limit and Maximum Consumption Limit by the ISO-NE during the stakeholder process).² This automatic redeclaration is an operational result of ISO-NE’s decision (1) to automatically assign reserves to CSFs, and (2) to then prioritize the provision of operating reserves over the provision of energy, combined with ISO-NE’s need to meet the Northeast Power Coordinating Council (“NPCC”) requirement that reserves be sustainable for 60 minutes. The operational impact of the proposed tariff implementation would deny CSFs the ability to sell their stored energy to the market and could thus distort the market. Moreover, this would occur even when, as is generally the case, operating reserve prices are near zero, signaling the supply of reserves available to ISO-NE far exceeds demand. This constitutes a barrier to the effective participation of energy storage in the ISO-NE wholesale energy market, as well as deprives the regional market of access to the more valuable energy product that energy storage is capable of

² See ISO-NE Transmittal Letter at 11.

providing. The operational result of ISO-NE's approach fails to account for the physical and operational characteristics of electric storage resources and imposes a market-inefficient choice on energy storage to forgo selling all of their stored energy rather than to conserve a significant fraction as operating reserves – for which they receive no compensation more often than not.

While compliance with Order 841 may be deemed to be outside the scope of this proceeding, the Commission's reasoning and determinations ought to be the basis upon which market rule proposals related to storage devices ought to be judged. Because ISO-NE has included the automatic redeclaration provision in this filing and not its Order 841 compliance filing, ESA will not be provided an opportunity to protest the implementation of this provision in the Order 841 proceeding. Thus, ESA recommends that the Commission address the issue here.

Under the circumstances, ESA respectfully requests that ISO-NE notifies FERC that it will not impose the automatic redeclaration burden on CSFs providing energy. In this comment, ESA identifies mechanisms for how ISO-NE might achieve this. Should ISO-NE do so, then ESA strongly supports immediate approval of the instant filing by FERC. Should ISO-NE not do so, FERC should remedy or otherwise remove those provisions related to automatic redeclaration in approving ISO-NE's tariff filing. Alternatively, FERC should direct ISO-NE to include in its Order 841 compliance filing a description of how ISO-NE will implement an economic co-optimization mechanism that will ensure that CSFs that forgo selling energy in order to provide operating reserves are economically indifferent to this outcome.

I. COMMUNICATIONS

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II. ABOUT THE ENERGY STORAGE ASSOCIATION

ESA is the national trade association dedicated to energy storage, working toward a more resilient, efficient, sustainable and affordable electricity grid – as is uniquely enabled by energy storage. With more than 160 members, ESA represents a diverse group of companies, including independent power producers, electric utilities, energy service companies, financiers, insurers, law firms, installers, manufacturers, component suppliers and integrators involved in deploying energy storage systems around the globe.

III. MOTION TO INTERVENE

Many of ESA's members actively participate or are planning to participate in ISO-NE's markets and are looking to offer a full array of energy, capacity and ancillary services in the region. Given that ISO-NE has designed the Tariff amendment to include the rules by which energy storage resources will be allowed to participate in its markets, ESA and its members will be affected materially and directly by any action taken by the Commission in this proceeding. Accordingly, ESA respectfully moves to intervene in this proceeding.

IV. COMMENTS

A. Auto-redeclaration of storage MW, stemming from the automatic assignment and prioritization of reserves obligations to storage resources providing energy, is unjust and unreasonable.

In ISO-NE's energy market, most generator participants also provide reserves. As a general matter, ISO-NE designates as reserve providers generators that have dispatchable 'headroom' above their current dispatch point and their maximum output level, as well as off-line generators that are capable of starting up within thirty minutes.³ For most generators, the NPCC requirement that operating reserves be sustainable for at least 60 minutes when called upon for energy is not a limiting constraint. For example, generators, including pumped storage hydro resources typically have enough fuel on hand to support operations for the following 60-minute period. For energy storage resources such as batteries that register as CSFs, however, this constraint will be binding when the resource has less than one hour of stored energy remaining.

ISO-NE's transmittal letter states: "The reserve counting rules for continuous storage Generator Assets and DARDs are the same as for other Generator Assets and DARDs."⁴ The ISO-NE continues, "the ISO will automatically reduce the Economic Maximum Limit of a Continuous Storage Facility's Generator Asset when the facility has less than one hour of available energy remaining. In other words, if the battery, generating at its Economic Maximum Limit, would run out of energy in under an hour (calculated based on the one-hour available energy value the Continuous Storage Facility telemeters to the ISO), the software will

³ See Tariff Section III.1.7.19 for information concerning reserve designations.

⁴ Transmittal Letter at 11.

automatically adjust the unit's Economic Maximum Limit to an output level that the battery can sustain for an hour.”⁵

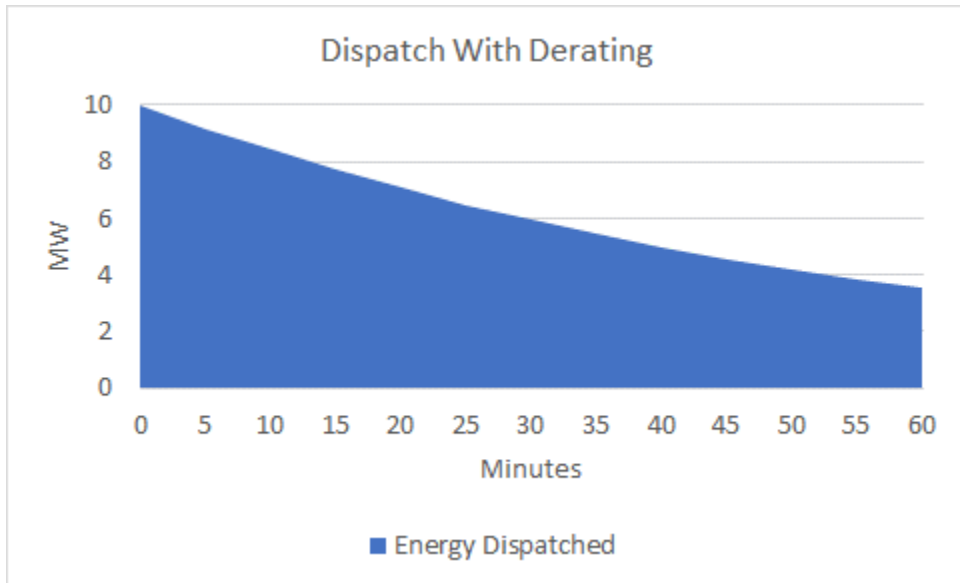
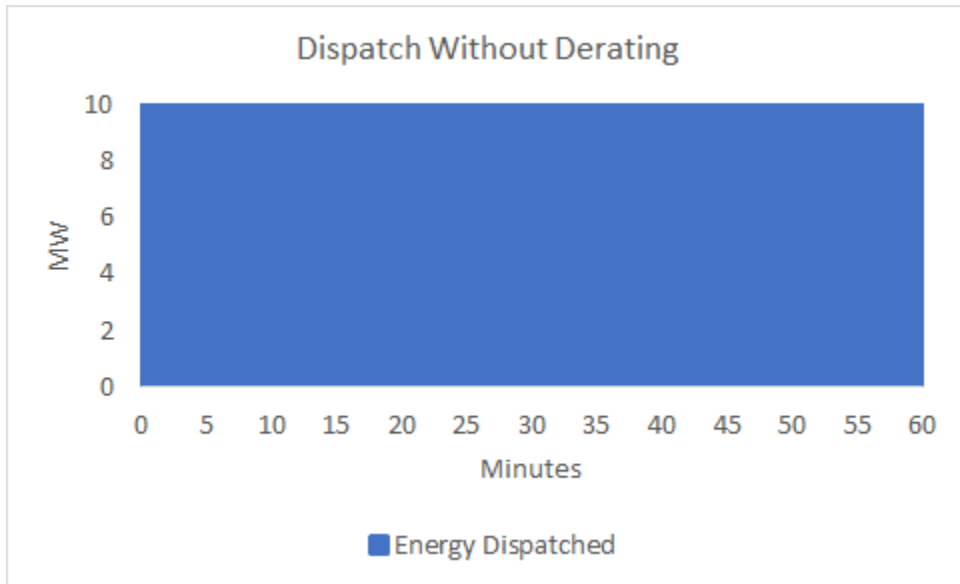
ESA understands that the 60-minute duration requirement for Reserves is a NPCC requirement and does not challenge this requirement. However, as proposed in the instant filing, ISO-NE would determine, by fiat, that all energy storage resources *must* provide operating reserves at all times, to the exclusion of the storage resource's ability to sell its stored energy, even when operating reserves are in abundance. ISO-NE proposes to automatically de-rate the MW output of electric storage assets to ensure enough energy for reserves (“automatic redeclaration”).⁶ The automatic assignment of reserves and the associated automatic redeclaration is unjust and unreasonable for a limited energy resource such as CSF. This results in certain storage providers being unable to provide all of the energy service they are technically capable of to the detriment of the energy market.

For example, as shown in the graphs and table below, a 10 MW / 10 MWh battery that is economical to provide 10 MW of energy into the market should be allowed to provide its full 10 MW for a full hour, yielding 10 MWh of energy dispatch. However, under the ISO's proposed design, the battery dispatch would be de-rated every five minutes from 10 MW down to 3.5 MW, as the state of charge declines, and would only allowed to produce and be paid for 6.5 MWh over the operating hour. This prevents 35% of the battery's energy from being sold.

⁵ *Id.*

⁶ Transmittal Letter at 11.

Figure 1 Illustrative Examples of Automatic Re-declaration of Energy Dispatch for 10 MW / 10 MWh Storage Asset



Time (min)	Desired			Actual		
	MW	start SOC (MWh)	Energy sold (MWh)	MW	start SOC (MWh)	Energy sold (MWh)
0	10	10.0	0.0	10.0	10.0	0.0
5	10	9.2	0.8	9.2	9.2	0.8
10	10	8.3	1.7	8.4	8.4	1.6
15	10	7.5	2.5	7.7	7.7	2.3
20	10	6.7	3.3	7.1	7.1	2.9
25	10	5.8	4.2	6.5	6.5	3.5
30	10	5.0	5.0	5.9	5.9	4.1
35	10	4.2	5.8	5.4	5.4	4.6
40	10	3.3	6.7	5.0	5.0	5.0
45	10	2.5	7.5	4.6	4.6	5.4
50	10	1.7	8.3	4.2	4.2	5.8
55	10	0.8	9.2	3.8	3.8	6.2
60	10	0.0	10.0	3.5	3.5	6.5

B. Automatic redeclaration of storage MWs fail to comply with FERC’s directives in Order 841.

Energy storage resources are not generators, a point that FERC has made clear in the rationale underpinning Order 841. Pursuant to Order 841, ISO-NE must implement tariff provisions that ensure that Electric Storage Resources⁷ are eligible to provide all capacity, energy and ancillary services that the resource is technically capable of providing.⁸ In pertinent part, Order 841 mandates that the RTOs/ISOs create a Participation Model for Electric Storage Resources that (1) recognizes the physical and operational characteristics of the resources and (2) facilitates their participation in the capacity, energy and ancillary services markets. This includes allowing resources to manage their own state of charge. Automatic redeclaration requirements stemming from ISO-NE’s tariff amendment and approach to meeting NPCC requirements fails to comply with FERC’s directives in Order 841.

⁷ Order 841 defines an Electric Storage Resource as “a resource capable of receiving electric energy from the grid and storing it for later injection of electricity back to the grid regardless of where the resource is located on the electrical system.” *Id.* at P 22.

⁸ Order 841 P 4 (errata version).

Automatic redeclaration restricts the amount of energy that could be dispatched using a CSF. Thus, ISO-NE is limiting the MW output and thus sales of Energy by CSFs, even though the CSF would have enough stored energy to be technically capable of fully selling “Energy” in a given hour. In Order 841, FERC makes clear that de-rating storage capacity to meet the minimum run time requirements of a particular market is voluntary and thus is at the storage resource’s discretion.⁹ In contrast, ISO-NE’s prophylactic remedy to de-rate all energy resources is the opposite remedy than the one adopted in 841. By restricting CSFs from gaining full access to the energy market, ISO-NE violates Order 841.

ESA notes that, while ISO-NE is compelled to comply with NPCC requirements, its current proposal for automatic redeclaration of storage MW is not the only possible approach. Indeed, alternative approaches to meeting NPCC requirements that resources be capable of 60 minutes of Reserves would avoid a violation of Order 841. For example, ISO-NE could prioritize Energy over Reserves and so de-rate the Reserves assignment instead of the Energy dispatch.¹⁰ Another option could include economic co-optimization of the assignment of CSFs between Energy and Reserves, thereby making CSFs indifferent to forgone energy sales for providing operating reserves. ISO-NE could also simply let CSF resources opt into or out of providing Reserves.

ESA notes that one “solution” offered by ISO-NE during its stakeholder process, “self-dispatch,” is not a practical solution. As noted in the ISO’s transmittal letter, self-dispatch is not an efficient means of operation, as it involves a telephone call to the ISO control room, is subject

⁹ Order 841 at P 94-100.

¹⁰ ESA notes that NYISO, which must also meet NPCC requirements, is presently planning to de-rate reserves assignment instead of energy dispatch as part of its Order 841 compliance.

to approval, takes time to be implemented, and may need to be repeated every hour or multiple times within an hour.¹¹ Having self-dispatch as an option may appear to be a potential solution but in practice would present an overly cumbersome method to overriding an automatic redeclaration.

Ultimately, ESA respectfully requests that ISO-NE notifies FERC it will not impose the automatic redeclaration burden on CSFs providing energy. ISO-NE should describe a means by which it will enable energy storage resources to fully discharge their energy when being dispatched economically by ISO-NE, such as by prioritizing energy over reserves and de-rating CSF reserves assignments or by making assignment of reserve obligations to CSFs in the energy market optional for the storage operator. Should ISO-NE not do so, FERC should remedy or otherwise remove those provisions related to automatic redeclaration in approving ISO-NE's tariff filing. Alternatively, FERC should direct ISO-NE to include in its Order 841 compliance filing a description of how ISO-NE will implement an economic co-optimization mechanism that will ensure that CSFs that forgo selling energy in order to provide reserves are economically indifferent to this outcome.

V. CONCLUSION

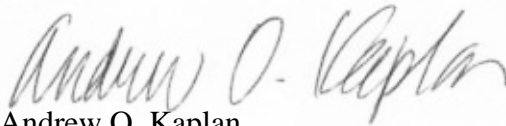
Automatic redeclaration of the energy output of CSFs to meet ISO-NE's assigned reserve requirement is unjust and unreasonable, as it does not allow those market participants to earn the full energy revenues for the amount of energy they are capable of providing. Moreover, automatic redeclaration of energy storage resources' output is a violation of Order 841 — and one that ESA believes can be remedied without compromising ISO-NE's ability to comply with NPCC requirements. ISO-NE can remedy this issue by either modifying its operational approach

¹¹ Transmittal Letter at 12.

as suggested in this filing. ESA thus asks that ISO-NE notify FERC how it will to include a remedy, or else FERC should remedy or otherwise remove those provisions related to automatic redeclaration in approving ISO-NE's tariff filing.

Moreover, for the forgoing reasons, the Commission should grant the relief sought by ESA and grant ESA's Motion to Intervene.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document on each person listed on the electronic service list maintained by the Secretary in this proceeding.

Dated at Washington, DC this 31st day of October, 2018.

