UNITED STATES OF AMERICA BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.) Docket No. ER19-467-000

REQUEST FOR LEAVE TO ANSWER AND ANSWER OF NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Pursuant to Rule 213 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("Commission"), 18 C.F.R. § 385.213, the New York Independent System Operator, Inc. ("NYISO")¹ respectfully submits this request for leave to answer and answer ("Answer"). The Answer responds to certain issues raised in comments and protests² submitted in response to the NYISO's December 3, 2018 compliance filing in this proceeding ("Compliance Filing").³ For the reasons described below, the Commission should reject the protests in their entirety. The Commission should accept the Compliance Filing without modification and find that the NYISO has complied with the requirements of Order No. 841.⁴

¹ Capitalized terms not defined in this Answer shall have the meaning set forth in the NYISO Open Access Transmission Tariff ("OATT") and Market Administration and Control Area Services Tariffs ("Services Tariff").

² The following parties submitted protests or comments to the Compliance Filing: Advanced Energy Economy, EDF Renewables, Inc., Energy Storage Association, Independent Power Producers of New York, Inc., Institute for Policy Integrity at New York University School of Law, Natural Resources Defense Council, Earthjustice, Sustainable FERC Project, Acadia Center, Sierra Club, Association for Energy Affordability, Inc., the City of New York, New York State Public Service Commission, the New York State Energy Research and Development Authority, New York Transmission Owners, NextEra Energy Resources, LLC, and Tesla, Inc.

³ 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).

⁴ Electric Storage Participation in Market 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").

I. <u>REQUEST FOR LEAVE TO ANSWER</u>

The NYISO may answer pleadings that are styled as comments as a matter of right.⁵ The Commission also has discretion to accept, and routinely accepts, answers to protests where they help clarify complex issues, provide additional information, are helpful in the development of the record in a proceeding, or otherwise assist in the decision-making process.⁶ The NYISO's Answer to the protests in this proceeding satisfies those standards and should be accepted because it addresses inaccurate and misleading statements, and provides additional information that will help the Commission fully evaluate the arguments in this proceeding. The NYISO, therefore, respectfully requests that the Commission accept this Answer.⁷

II. ANSWER

A. The NYISO's Proposed Energy Storage Resource Participation Model and Related Tariff Requirements Comply with Order No. 841 and Are Just and Reasonable

Order No. 841 directed Regional Transmission Organizations ("RTOs") and Independent

System Operators ("ISOs") to develop a participation model that, recognizing the physical and

operational characteristics of electric storage resources, facilitates their participation in the

RTO/ISO markets.⁸ In particular, Order No. 841 requires that the participation model must: (1)

ensure that a resource using the participation model is eligible to provide all capacity, energy,

⁵ See 18 C.F.R. § 385.213(a)(3).

⁶ See, e.g., Southern California Edison Co., 135 FERC ¶ 61,093, at P 16 (2011) (accepting answers to protests "because those answers provided information that assisted [the Commission] in [its] decision-making process"); New York Indep. Sys. Operator, Inc., 134 FERC ¶ 61,058, at P 24 (2011) (accepting the answers to protests and answers because they provided information that aided the Commission in better understanding the matters at issue in the proceeding); New York Indep. Sys. Operator, Inc., 140 FERC ¶ 61,160, at P 13 (2012); and PJM Interconnection, LLC, 132 FERC ¶ 61,217, at P 9 (2010) (accepting answers to answers and protests because they assisted in the Commission's decision-making process).

⁷ In the interest of limiting the scope of this Answer, the NYISO does not address all issues raised in comments and protests submitted in response to the Compliance Filing. The fact that the NYISO is not responding to all issues raised by parties should not be construed as agreement therewith.

⁸ Order No. 841 at PP 3, 51 (errata version).

and ancillary services that the resource is technically capable of providing in the RTO/ISO markets; (2) ensure that a resource using the participation model can be dispatched and can set the wholesale market clearing price as both a wholesale seller and wholesale buyer consistent with existing market rules that govern when a resource can set the wholesale price; (3) account for the physical and operational characteristics of electric storage resources through bidding parameters or other means; and (4) establish a minimum size requirement for participation in the RTO/ISO markets that does not exceed 100 kW.⁹ Order No. 841 provided RTOs/ISOs with a significant amount of flexibility in satisfying these minimum requirements, permitting each RTO/ISO "to propose market rules that comply with these minimum requirements in the way that best suits its individual market design."¹⁰

In the Compliance Filing, the NYISO proposed a participation model for Energy Storage Resources¹¹ and related tariff requirements that address the directives of Order No. 841 in a manner that aligns with the NYISO's unique market design, system characteristics, and operating requirements. The NYISO's proposal establishes just and reasonable requirements that seek to remove barriers to entry and facilitate the participation of Energy Storage Resources in the NYISO-administered Energy, Ancillary Services, and Installed Capacity markets, recognizing the physical and operational characteristics of these resources.

Commenters and protestors take issue with how the NYISO has addressed certain discrete elements of the directives in Order No. 841 and request that the Commission direct the

⁹ Order No. 841 at P 4 (errata version). In addition, each RTO/ISO was required to specify 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 must be at the wholesale locational marginal price. *Id.*

¹⁰ Order No. 841 at P 53 (errata version).

¹¹ The NYISO's defined term "Energy Storage Resource" is synonymous with the term "electric storage resource" defined in Order No. 841. *See* Order No. 841 at P 29 (Errata version); Compliance Filing at pp 12-14.

NYISO to adopt alternative approaches. The Commission should reject these proffered modifications. The NYISO's proposal was not developed in a vacuum but, instead, implements the Commission's directives within the context of, and across interrelated aspects of, the NYISO's overall market design. The participation model for Energy Storage Resources and related tariff requirements were developed to be comparable to the qualification and technical requirements applicable to other types of resources participating in the NYISO-administered markets, while also accounting for those physical and operational characteristics of Energy Storage Resources that warrant distinctive treatment based on their impact on the administration of the wholesale markets in New York and the reliable operation of the electric grid. The NYISO's proposal also represents an approach that can be implemented by the NYISO's market software without adversely impacting other Market Participants and the efficient operation of the NYISO-administered markets. The NYISO is working with its software vendor to identify potential future software improvements that will further enhance the participation opportunities and options of Energy Storage Resources in the NYISO-administered markets over the long term.

Certain commenters and protestors also request that the Commission direct the NYISO to modify its proposal beyond the directives of Order No. 841 to expand opportunities for Energy Storage Resources' participation in New York, including establishing frameworks for dual participation, aggregation of distributed energy resources ("DERs"), and the co-location of resources. The NYISO is aware of and supports the initiatives in New York to encourage the development of Energy Storage Resources and the incorporation of these resources into the state's retail and wholesale markets. While outside the directives of Order No. 841, the NYISO has been working in parallel on an initiative to fully incorporate DERs, including Energy Storage

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Resources, into its markets. This initiative is tackling the complexities associated with dual participation, resource aggregation, and other related matters that will, among other things, support expanded opportunities for Energy Storage Resources in New York. The NYISO is currently reviewing these proposals with stakeholders and targeting stakeholder approval of these DER-related tariff revisions in the second quarter of 2019. Following approval, the NYISO will submit the tariff revisions for the Commission's acceptance, pursuant to Section 205 of the Federal Power Act. The NYISO intends to implement the majority of its DER-related tariff enhancements in 2021, but is exploring opportunities to expedite implementation for portions of those tariff enhancements that may provide value to Energy Storage Resources in the near-term.

For the foregoing reasons and as further described below, the Commission should reject the protests submitted in this proceeding and accept the Compliance Filing without modification.

B. NYISO Responses to Protests and Comments Concerning Particular Features of the NYISO's Proposal

1. The NYISO Management of Day-Ahead Market Energy Levels for Energy Storage Resources Participating in the Installed Capacity Market is Necessary to Ensure Efficient Market Outcomes and Maintain System Reliability

As described in the Compliance Filing, the NYISO will require Energy Storage Resources participating as an Installed Capacity Supplier ("ICAP Supplier") in the NYISOadministered Installed Capacity market to elect ISO-Managed Energy Levels in their Day-Ahead Market Bids.¹² Certain parties protested this requirement, arguing that this impairs an Energy Storage Resource's ability to self-manage its state of charge.¹³ The Commission should reject

¹² Compliance Filing at p 43.

¹³ See Protest of NextEra Energy Resources, LLC, Docket No. ER19-467-000 at pp 2-16 (February 7, 2019) ("NextEra Protest"); Protests and Comments of the Energy Storage Association, Docket No. ER19-467-000 at

these protests as the NYISO is required to administer its Installed Capacity market in conjunction with its Day-Ahead Market in this manner to ensure comparability of treatment with other ICAP Suppliers, achieve efficient market outcomes, and maintain system reliability.

In Order No. 841, the Commission indicated that, to provide capacity, energy, and ancillary services, a resource "using the participation model for electric storage resources will still need to meet the technical requirements for any of the services that it wants to provide."¹⁴ The Commission clarified that "technically capable" of providing a service meant "that a resource can meet all of the technical, operational, and/or performance requirements that are necessary to reliably provide that service."¹⁵ The Commission did not require RTOs/ISOs to establish new processes by which an electric storage resource could demonstrate that it was technically capable, but did encourage RTOs/ISOs to consider whether modifications or additions were required to facilitate the participation of electric storage resources in its markets.¹⁶ As detailed below, due to the unique characteristics of Energy Storage Resources, these resources cannot participate in the NYISO-administered Installed Capacity market in the same manner as conventional resources without potentially creating inefficient market outcomes or reliability issues. Accordingly, the NYISO has proposed the ISO-Managed Energy Level bidding requirement for the Day-Ahead Market as a mechanism to facilitate the participation of Energy Storage Resources in its Installed Capacity market. Energy Storage Resources participating in the Installed Capacity market may still Self-Manage their state of charge in the Real-Time Market.

pp 5-7 (February 7, 2019) ("Energy Storage Association Protest and Comments"); Protest of Public Interest Organizations, Docket No. ER19-467-000 at pp 21-25 (February 7, 2019) ("Public Interest Organizations Protest").

¹⁴ Order No. 841 at P 76 (errata version).

¹⁵ Order No. 841 at P 78 (errata version).

¹⁶ Order No. 841 at P 81 (errata version).

The NYISO tariffs require ICAP Suppliers (with limited exception) that have sold capacity to, on a daily basis, (i) schedule a Bilateral Transaction associated with this capacity; (ii) bid Energy in each hour of the Day-Ahead Market associated with this capacity; or (iii) notify the NYISO of any outages.¹⁷ These requirements help ensure that the NYISO is aware of the physical capacity that is actually available and can optimally schedule the ICAP Suppliers to meet system reliability needs. As with conventional resources, Energy Storage Resources participating as ICAP Suppliers must satisfy these requirements.

A conventional resource participating in the NYISO-administered markets that does not have duration limitations (and has not scheduled a Bilateral Transaction or notified the NYISO of an outage) is expected to be capable of supplying Energy in all hours for which it submitted a Day-Ahead Market Bid. An Energy Storage Resource, on the other hand, is duration limited. As such, it is not capable of supplying Energy for all hours in a market day for which it has sold capacity (even in the absence of a Bilateral Transaction and or full or partial outage). Given these physical operating parameters, an Energy Storage Resource participating as an ICAP Supplier cannot be assured of being awarded a feasible Day-Ahead Market schedule if treated like a conventional resource that participates in the Installed Capacity market, potentially resulting in a Day-Ahead Market solution that does not meet system reliability needs.

Accordingly, the NYISO proposes to require Energy Storage Resources participating in the NYISO-administered Installed Capacity market to elect ISO-Managed Energy Levels in their Day-Ahead Market Bids. By doing so, the NYISO's scheduling software can optimize, based

¹⁷ Services Tariff Section 5.12.7. A conventional resource that is out of, or low on fuel, is expected to notify the NYISO of its full or partial forced outage. The NYISO's Energy Storage Resource participation model and associated tariff revisions do not require Energy Storage Resources to identify a forced outage due to its Energy Level. However, if the Energy Storage Resource Self-Manages its Energy Level and is no longer able to inject Energy, its Upper Operating Limit will be reduced to zero until such time that it can again inject Energy.

upon the hourly economic offers supplied by the resource, the resource's injections and withdrawals throughout the market day being evaluated by the Day-Ahead Market software to maintain consistency among its schedule and its capability. The NYISO will do so by evaluating the Energy Storage Resource's physical parameters, such as Roundtrip Efficiency, Lower Operating Limit, Upper Operating Limit, Upper Storage Limit, and Lower Storage Limit in conjunction with its Beginning Energy Level. The NYISO's approach will: (i) allow the Day-Ahead Market software to schedule an Energy Storage Resource consistent with its Beginning Energy Level, (ii) economically optimize the Energy Storage Resource across the Day-Ahead Market intervals, and (iii) establish Day-Ahead schedules that are consistent with expected Energy Levels throughout the day and hourly offers and therefore can meet resource adequacy needs.

It is not, as certain protestors argue, sufficient for the NYISO to rely simply on some type of financial penalty. The NYISO's tariffs do not currently assess a penalty when an ICAP Supplier is "over scheduled" in the Day-Ahead Market. If an ICAP Supplier cannot meet its Day-Ahead schedule, it must only buy-out of that position at the real-time LBMP.¹⁸ In general, conventional resources are not exposed to this situation in the normal course of business. However, by virtue of their duration limitations, Energy Storage Resources may frequently be required to buy-out of infeasible Day-Ahead schedules if the duration limitation is not properly accounted for in the Day-Ahead Market economic evaluation.

Infeasible Day-Ahead schedules may create reliability issues and inefficiencies in the markets as a whole. If a resource that has a Day-Ahead schedule becomes unavailable after the

¹⁸ Depending on the relationship between the Day-Ahead price and the real-time price, an Energy Storage Resource may actually receive payment for being unavailable in real-time.

Day-Ahead Market closes, the NYISO may need to commit and/or dispatch less efficient and more costly resources in real-time or potentially resort to taking out-of-market actions to ensure resource adequacy in real-time. Depending on the particular facts and circumstances, the NYISO may be required to conduct a Supplemental Resource Evaluation ("SRE") to commit additional megawatts out-of-market to meet reliability needs. Because SRE actions are out-ofmarket, they can result in distorted prices by the shifting of costs into uplift payments to resources.

2. The NYISO's Operating Parameter Requirements for Energy Storage Resources Reasonably Require the Information Necessary for their Participation in the NYISO-Administered Markets

In the Compliance Filing, the NYISO established new registration and bidding parameters that recognize the physical and operational characteristics of Energy Storage Resources. The new parameters are comparable to the parameters described in Order No. 841, except in the limited circumstances where that information is not applicable based on the NYISO's proposed participation model for Energy Storage Resources.

As described in detail in the Compliance Filing, the NYISO's participation model for Energy Storage Resources is a dispatch-only model for the Day-Ahead Market and Real-Time Market.¹⁹ Accordingly, the NYISO's proposal does not require that Energy Storage Resources provide inapplicable commitment-related information.²⁰ That is, the Energy Storage Resource will not provide information concerning the following parameters: Minimum Run Time, Maximum Run Time, Minimum Charge Time, and Maximum Charge Time. Instead, the NYISO

¹⁹ Compliance Filing at pp 18-21.

²⁰ In Order No. 841, the Commission provided flexibility concerning the information that an Energy Storage Resource was required to provide, noting that the flexibility "may help resources using the participation model for electric storage resources from having to submit information that is not applicable given their physical, operational, or commercial circumstances." Order No. 841 at P 192 (errata version).

will use an Energy Storage Resource's Beginning Energy Level to develop feasible schedules when Day-Ahead Bids for the Energy Storage Resource have an ISO-Managed Energy Level, and for both ISO- and Self-Managed resources in real-time.²¹

Certain commenters and protestors raise concerns with the NYISO's proposed dispatchonly model and the absence of commitment parameters for Energy Storage Resources.²² As described in the Compliance Filing, the NYISO examined evaluating Energy Storage Resources for both commitment and dispatch in the NYISO's Day-Ahead and Real-Time Markets. The current technical capabilities of the NYISO's software cannot ensure the development of both Day-Ahead and Real-Time Market solutions within a reasonable time period when committing Energy Storage Resources. The NYISO, therefore, determined that it was appropriate at this time for Energy Storage Resources to participate as dispatch-only resources to avoid the potential for significant disruptions to the bidding and scheduling operations for all resources in the NYISO's Day-Ahead and Real-Time Markets.²³ Based upon discussions with its stakeholders and other developers, the NYISO understands that the dispatch-only model will accommodate the storage technologies that are currently being contemplated for deployment in New York.²⁴

²¹ The Day-Ahead Bids for Energy Storage Resources with Self-Managed Energy Levels will be scheduled based on the Energy Storage Resource's Bid.

²² See Comments of Advanced Energy Economy, Docket No. ER19-467-000 at pp 11-12 (February 7, 2019) ("Advanced Energy Economy Comments"); Protest and Intervention of the New York State Public Service Commission and New York State Energy Research and Development Authority; Docket No. ER19-467-000 at pp 41-41 (February 7, 2019) ("NY State Entities Protest"); Public Interest Organizations Protest at pp 21-22.

²³ While a majority of Bids for Generators participating in the NYISO-administered markets include both commitment and dispatch parameters, certain resources, such as Behind-the-Meter Net Generation Resources, are also currently considered dispatch-only.

²⁴ The NYISO continues to explore with its software vendor the feasibility of providing for the commitment of Energy Storage Resource through the NYISO's market software in a manner that does not adversely impact the timely development of Day-Ahead and Real-Time Market solutions.

As described above, in place of commitment parameters, the NYISO will use the Beginning Energy Level parameter, which is the total amount of Energy stored at the beginning of a market interval. This parameter is comparable to Order No. 841's "State of Charge" parameter. Consistent with the Order No. 841 requirements for the State of Charge parameter, the Beginning Energy Level parameter will be provided in both Day-Ahead and real-time. Specifically, the Energy Storage Resource that has elected an ISO-Managed Energy Level will submit the parameter with its Day-Ahead Bid, and the parameter will be determined in real-time by its 6-second telemetry data. Energy Storage Association ("ESA") argues that Energy Storage Resources should be permitted to provide the real-time Beginning Energy Level manually, rather than having it determined via telemetry.²⁵ The NYISO believes, however, that real-time telemetered Energy Level data is the most accurate source of that data. Although the NYISO's proposal does not currently include opportunities for dual participation, if, in the future, an Energy Storage Resource is simultaneously providing service to another entity outside the NYISO-administered markets, the resource should reflect those other obligations in its bids, not in its real-time Energy Levels.

The New York State Entities ("NY State Entities") question whether the NYISO's 6second telemetry requirements are overbroad and reflect the actual data needed for the service provided.²⁶ The NYISO's proposed telemetry requirements mirror the existing telemetry requirements applicable to all other Generators participating in the NYISO's Energy and Ancillary Services markets and ensure data consistency across all resources. This information assists the NYISO in maintaining its situational awareness and the reliability of the grid. As

²⁵ See Energy Storage Association Protest and Comments at pp 11-13.

²⁶ See NY State Entities Protest at p 43.

described in the Compliance Filing, because Energy Storage Resources are duration limited, this real-time information is necessary to ensure that Energy Storage Resource schedules are feasible, and, for Operating Reserves awards, meet applicable reliability requirements.²⁷

Finally, Tesla requests that the NYISO allow Energy Storage Resources to submit separate round-trip efficiency parameters for summer and winter. The NYISO's proposal identified Round-Trip Efficiency as a "registration" parameter, and noted that registration parameters can only be changed by the NYISO. The NYISO's processes do not prohibit resources making seasonal changes to their registration parameters, subject to the resource providing the NYISO with advance notice of the proposed changes.

3. Dual Participation Is Not Required by the Compliance Directives in Order No. 841

Certain commenters and protesters advocate for allowing Energy Storage Resources to simultaneously provide services to the NYISO-administered wholesale markets and to the retail markets by providing services to the distribution system or a host facility.²⁸ The NYISO agrees that there are potential benefits for Energy Storage Resources and for the grid from Energy Storage Resources having the capability to meet both bulk system and local needs. Commenters and protesters argue, however, that the Commission should require the NYISO, as part of its Order No. 841 compliance obligation, to permit "dual participation" by Energy Storage Resources in wholesale and retail markets. The Commission should reject those arguments as it did not direct RTOs/ISOs to enact a dual participation framework as part of Order No. 841.

²⁷ Compliance Filing at p 28.

²⁸ See Advanced Energy Economy Comments at pp 9-11; Public Interest Organizations Protest at pp 14-21; Energy Storage Association Protest and Comments at p 2-5; NY State Entities Protest at pp 33-39; Protest of the City of New York, Docket No. ER19-467-000 at pp 16-18 (February 7, 2019) ("City of New York Protest"); Limited Protest of EDF Renewables, Inc., Docket No. ER19-467-000 at p 2 (February 7, 2019); Comments of the Institute for Policy Integrity at New York University School of Law, Docket No. ER19-467-000 at pp 2-8 (February 7, 2019); Comments of Tesla, Inc., Docket No. ER19-460-000, et al., at pp 23-24 (February 7, 2019) ("Tesla Comments").

The NYISO acknowledges that Order No. 841 refers generally to the potential for dual participation in certain instances.²⁹ However, while Order No. 841 acknowledged that "[i]t is possible for electric storage resources that are selling retail services to also be technically capable of providing wholesale services," it did not direct RTOs/ISOs to affirmatively require or permit dual participation.³⁰

As described in Part II.A above, the NYISO is currently in the process of determining

technical requirements related to dual participation as part of its broader DER initiative. The

NYISO is working to develop appropriate metering and accounting practices, Day-Ahead and

real-time coordination with New York State's utilities,³¹ Installed Capacity market rules that

²⁹ Order No. 841 at P 325 (errata version). The Commission addressed the concept of dual participation in the Notice of Proposed Rulemaking in the Order No. 841 docket, RM16-23, which at the time included concepts for Energy Storage Resources and Distributed Energy Resources. The Commission subsequently bifurcated the Energy Storage Resource and Distributed Energy Resource discussions, and created a new docket, RM18-6, to address concepts related to DER. It was in the section of the original NOPR regarding DER in which the Commission addressed dual participation. That discussion was not included in Order No. 841.

³⁰ Order No. 841at P 325 (errata version). The Commission further stated that prohibiting retail market participants from participating in the wholesale markets when those resources are "technically capable" would adversely affect competition in the RTO/ISO markets. *Id.* As described in this Answer, the NYISO is currently working to address dual participation as part of its DER initiative.

³¹ The City of New York, NY State Entities, and Public Interest Organizations argue that the NYISO already permits "dual participation" of certain Demand Side Resources, and that participation should be extended to Energy Storage Resources. While the NYISO permits Special Case Resources ("SCR") and Emergency Demand Response Program ("EDRP") participants to also provide services to the applicable utilities, those programs are fundamentally different than the Energy Storage Resource participation model proposed by the NYISO. The EDRP and SCR Program are reliability-based demand response programs where the resources do not directly participate in the Energy and Ancillary Services markets (i.e., they do not offer Energy and Ancillary Services, though they are eligible to receive Energy payments for real-time demand reductions in response to NYISO-called program activations). Moreover, these two programs are deployed on an extremely limited number of days per year, and historically there has been minimal overlap of NYISO activation and utility activation of retail-level demand response programs. Given that these Demand Side Resources do not participate in the Energy and Ancillary Services markets, the infrequent activations, and the limited overlap of bulk system and distribution system activations, there is only limited operational coordination between the NYISO and distribution system operators for these Demand Side Resources, and a limited set of wholesale market rules to recognize Demand Side Resource retail market program participation. The framework under which Demand Side Resources are permitted to participate in the EDRP and SCR Program is markedly different from the NYISO's Energy Storage Resource proposal under which Energy Storage Resources may directly participate in the Energy and Ancillary Services markets, and, therefore, require enhanced coordination with the distribution system operators. As part of its broader DER integration effort, the NYISO has worked with the distribution system operators over the last year to develop those necessary operating protocols, and they will be incorporated into the NYISO's final dual participation rules.

appropriately value the capacity dual participating resources provide, and certain planning requirements to ensure that the NYISO can meet applicable reliability requirements. The NYISO expects that the market design and proposed rules to facilitate dual participation will be presented to stakeholders in the near future, and that it may be able to implement those rules in a timeframe that aligns with the implementation of its Energy Storage Resource participation model.³²

4. The NYISO's Rules Permit Accounting of a Wide Array of Lost Opportunity Costs

Advanced Energy Economy ("AEE") protests the NYISO's evaluation of lost opportunity costs, suggesting that it may not fully address all of the opportunity costs that Energy Storage Resources may face.³³ In particular, AEE argues that if an Energy Storage Resource that has elected to participate in the NYISO's markets is, for retail purposes, co-metered with retail load, then the Energy Storage Resource should be permitted to minimize the demand charge that applies to co-located and co-metered retail load, and to reflect the cost of not operating to reduce the retail demand charge as a wholesale opportunity cost.³⁴

As explained above, the NYISO is working to develop rules addressing dual participation by DERs, including Energy Storage Resources. If the dual participation rules that the NYISO develops and proposes for the Commission's consideration allow Energy Storage Resources to be operated in the manner that AEE proposes, then the rules for developing opportunity costs that were filed in this proceeding are already sufficient to permit the Energy Storage Resource to demonstrate, and for the NYISO to consider and accept (where appropriate) as a valid

³² As described above, the NYISO is addressing dual participation in the context of its forthcoming FPA Section 205 filing to integrate DERs. The NYISO is exploring the possibility of seeking an effective date for the tariff revisions addressing dual participation that is in advance of the main components of that filing.

³³ Advanced Energy Economy Comments at 13.

³⁴ Advanced Energy Economy Comments at 13-14.

opportunity cost, the incremental cost increase that the co-located and co-metered retail load will

incur if its retail demand charge increases as a result of wholesale market dispatch.³⁵

The language that the NYISO proposed to add to (new) Section 23.3.1.4.1.3 of the

Services Tariff to define "opportunity cost" permits the NYISO to consider a wide variety of

costs:

Opportunity cost is the cost, in dollars, representing (a) the total net revenue in the future time periods that is expected to be foregone by being dispatched by the ISO in the current time period, or (b) the total net cost in future time periods that is expected to be avoided by being dispatched by the ISO in the current time period. Opportunity costs are limited to costs that the ISO reasonably determines to be appropriate based on such data as may be furnished by the Market Party or otherwise available to the ISO.

5. The NYISO's Proposed Make-Whole Payments are Consistent with the Directives of Order No. 841

ESA protests the NYISO's proposed tariff revisions to provide make-whole payments -

in the form of Day-Ahead Margin Assurance Payments ("DAMAP") and Bid-Production Cost

Guarantees ("BPCG") – claiming the proposal removes protection from uneconomic dispatch.³⁶

NextEra Energy Resources, LLC ("NextEra") similarly argues that the exclusion of DAMAP

will result in Energy Storage Resources being subject to uneconomic dispatch without the

protection of make-whole payments.

Order No. 841 required each RTO/ISO to revise its tariffs to "ensure that resources

available for manual dispatch as a wholesale buyer and wholesale seller under the participation

model for electric storage resources are held harmless for manual dispatch by being eligible for

³⁵ In order to prevent economic withholding by Energy Storage Resources, the NYISO will expect the Energy Storage Resource to demonstrate that it is reasonably expected to incur the demand charge as a prerequisite to allowing the demand charge to be reflected as an opportunity cost on a particular Day-Ahead Market day, or for a particular Real-Time Market hour. Market Participants continue to have the option to consult with the NYISO, on a case-by-case basis, to demonstrate valid opportunity costs to be included in reference levels.

³⁶ Energy Storage Association Protests and Comments at p 7.

make-whole payments."³⁷ As described in the Compliance Filing, Suppliers bidding Energy Storage Resources will be eligible to receive make-whole payments when they are manually dispatched via an SRE commitment or are manually dispatched by the NYISO Out-of-Merit to ensure New York Control Area ("NYCA") or local reliability.³⁸ In the NYISO-administered markets, these payments consist of real-time BPCG payments and DAMAP.³⁹

The Compliance Filing also proposed revisions to the Services Tariff to provide that Energy Storage Resources will be eligible for Day-Ahead BPCG payments whether offered as ISO-Managed or Self-Managed, as long as all other existing Day-Ahead BPCG eligibility requirements are met.⁴⁰ Consistent with the treatment of other resources, the NYISO will make an Energy Storage Resource whole to its Bids, via Day-Ahead BPCG payments, if the Resource accrued a net loss over the 24-hour Day-Ahead Market day. The NYISO's Day-Ahead Market evaluation selects the least cost mix of Ancillary Services and Energy from Suppliers, Demand Side Resources, and Customers submitting Virtual Transaction Bids over the same 24-hour period protected by Day-Ahead BPCG payments.

In addition, Energy Storage Resources that are Bid with a Self-Managed Energy Level in the Real-Time Market will be eligible for real-time BPCG payments under the NYISO's proposal if they also satisfy the existing eligibility requirements applicable to other resources. Energy Storage Resources will not be eligible to receive real-time BPCG payments when they

³⁷ Order No. 841 at P 174 (errata version).

³⁸ Compliance Filing at pp 38 and 41.

³⁹ See id. (paying DAMAP to an Energy Storage Resource in other circumstances when it may not be physically capable of following its Day-Ahead schedule in real-time due to its Energy Level, or when it relies on the NYISO to manage its Energy Level over the substantially shorter real-time optimization periods, would create perverse incentives and could result in Energy Storage Resources being paid to do nothing in real-time, and/or not respond to changing real-time conditions).

⁴⁰ Compliance Filing at pp 37-41.

elect to rely on the NYISO to optimize their Energy Level over the Real-Time Commitment and Real-Time Dispatch optimization horizons. An ISO-Managed Energy Storage Resource can receive Real-Time Market schedules that optimize the resource's Energy Level in each optimization window but would otherwise result in a daily real-time BPCG payment to the resource. Over the course of an entire day, an Energy Storage Resource may receive economic dispatch schedules that make it infeasible for the resource to maintain the Energy Level necessary to meet its Day-Ahead schedule in a later part of the day. Given the shorter optimization windows (2.5 hours and 1 hour, respectively) compared to the daily timeframe for real-time BPCG payments, it is not reasonable to expect NYCA Loads to assume the risks associated with an ISO-Managed Energy Storage Resource being dispatched above or below its Day-Ahead schedule.

6. The Commission Should Permit RTOs/ISOs to Address the Co-Location of Energy Storage Resources and Other Asset Types through Their Stakeholder Processes

Order No. 841 did not require RTOs/ISOs to develop rules concerning the participation in their markets of multiple asset types (*e.g.*, Load reduction, storage, and generation) that are at the same physical location. Moreover, the Commission explicitly determined not to take action in this proceeding concerning aggregations of distributed energy resources and opened a separate docket to explore separately reforms concerning such aggregations.⁴¹ Nonetheless, certain commenters have requested that the Commission open a separate docket to address the participation of Energy Storage Resources co-located with other assets in the NYISO's and in other RTO/ISOs' markets.⁴²

⁴¹ Order No. 841 at P 5 (errata version).

⁴² See Energy Storage Association Protest and Comments at p 16; Public Interest Organizations Protest at pp 28-29.

The NYISO believes that the co-location of multiple asset types is a natural progression in the further integration of DERs into the wholesale markets. The NYISO has participated in the Commission's technical conference, and provided comments, concerning aggregations of distributed energy resources.⁴³ The NYISO, however, does not view the opening of a further docket to address this matter as necessary at this time. Rather, the NYISO requests that the Commission permit RTOs/ISOs to address this matter through their stakeholder processes to accommodate each region's unique market framework, system characteristics, and operational requirements.

As described in Part II.A above, the NYISO is currently in the midst of an initiative to more fully integrate the participation of DERs into its wholesale Energy, Ancillary Services, and Installed Capacity markets. As part of this initiative, the NYISO is developing through its stakeholder process revisions to its tariffs and procedures to address the aggregation of different asset types at the same location, including developing rules associated with interconnection, measurement and verification, bidding, scheduling, pricing, and other requirements necessary to permit the participation of those aggregated assets in the NYISO markets.⁴⁴

⁴³ See Post-Technical Conference Comments of the New York Independent System Operator, Inc., Docket No. RM18-9-000 (June 26, 2018).

⁴⁴ See DER Energy Market Design: Part 1, Michael Lavillotti, Market Design Specialist, Market Issues Working Group, New York Independent System Operator, Inc. (February 4, 2019) (*updated February 22, 2019*), *available at:*

https://www.nyiso.com/documents/20142/4815989/DER%20Overall%20Energy%20Market%20Design%20Review %20-%20Part%20I.pdf/67ec9d6d-f15c-1e35-de35-5163a890b13d and DER Energy Market Design: Part 2, Michael Lavillotti, Market Design Specialist, Market Issues Working Group, New York Independent System Operator, Inc. (February 6, 2019) (*updated February 22, 2019*) *available at:*

https://www.nyiso.com/documents/20142/4841804/DER%20Overall%20Energy%20Market%20Design%20Review%20Part%20II.pdf/bbf9508c-d3ac-c7da-447e-c2a0a54419d5.

7. Clarification that the NYISO's Proposed Buyer-Side Mitigation Revisions Do Not Revise the Class Year Process

Certain comments appear to be based on a misunderstanding of the proposed rules as they relate to the NYISO's Class Year Study process.⁴⁵ The NYISO is not proposing any change to the current rule under which resources 2 MW or less are not subject to the Class Year deliverability requirements. Such resources may request and obtain Capacity Resource Interconnection Service without ever going through the Class Year Study. The NYISO's proposal would result in these resources being subject to a Buyer Side Mitigation evaluation in tandem with a Class Year Study, but would not subject such resources to the deliverability analysis within the Class Year Study itself.

⁴⁵ See City of New York Protest at 10-11; NY State Entities Protest at 24.

III. CONCLUSION

WHEREFORE, the New York Independent System Operator, Inc. respectfully requests

that the Commission accept this Answer and accept the Compliance Filing in the above-

referenced docket without requiring any modifications.

Respectfully Submitted,

<u>/s/ Gregory J. Campbell</u> Gregory J. Campbell Attorney New York Independent System Operator, Inc. 10 Krey Boulevard Rensselaer, NY 12144 gcampbell@nyiso.com

February 22, 2019

cc: Nicole Buell Anna Cochrane James Danly Jignasa Gadani Jette Gebhart Kurt Longo David Morenoff Daniel Nowak Larry Parkinson Douglas Roe Kathleen Schnorf Gary Will

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding in accordance with the requirements of Rule 2010 of the Rules of Practice and Procedure, 18 C.F.R. §385.2010.

Dated at Rensselaer, NY this 22nd day of February 2019.

/s/ Joy A. Zimberlin

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