

their location, is central to achieving the goals of Order No. 841 and critical to advancing the deployment of energy storage technologies and ensuring the customers receive all of the benefits those resources can provide.³ NYISO's proposals for metering ESRs that are behind the meter are particularly problematic in this regard.

In addition, NYISO incorrectly asserts that ensuring that ESRs do not face barriers to their ability to provide both wholesale and retail services is beyond the scope of Order No. 841. To the contrary, Order No. 841 requires NYISO (and the other RTOs/ISOs) to allow ESRs to provide both wholesale and retail services. Allowing ESRs to provide the full range of services they are capable of providing is also critical to provide consumers with all the benefits that ESR technologies can deliver, and to lowering the cost of ESR deployment.

With respect to market operations, NYISO's compliance filing falls short by treating ESRs differently from other resources with respect to the ability to reflect start-up and no-load costs, and to ultimately recover those costs, under the proposed participation model. Additionally, NYISO's proposal also does not appear to afford ESRs sufficient ability to provide information to NYISO regarding key operating parameters (including Minimum Charge Time, Maximum Charge Time, Minimum Runt Time, and Maximum Run Time), as Order No. 841 required. Further, while NYISO has appropriately made efforts to refine the calculation of opportunity costs that may be included in an ESR's reference level, it should clarify that opportunity costs related to demand charge management – a key use case for many energy storage resources – are also permitted.

Finally, AEE is concerned with the open-ended nature of NYISO's request to delay the implementation date of its compliance proposal until "no earlier than May 1, 2020" due to the need to complete software upgrades.⁴ The Commission should require NYISO to implement its

³ See, e.g., Comments of Advanced Energy Economy in Docket No. RM16-23-000 (Feb. 13, 2017) at 8-14; Comments of Advanced Energy Economy in Docket No. RM18-9-000 (June 26, 2018).

⁴ NYISO Compliance Filing at 2.

compliance proposal by a specific date that addresses any reasonable need for additional time to implement software upgrades while taking into account Order No. 841’s conclusion that ensuring that ESRs can participate in the wholesale markets is necessary to ensure that those markets produce rates that are just and reasonable.

I. ADVANCED ENERGY ECONOMY (“AEE”)

AEE is a national organization of businesses making the energy we use secure, clean, and affordable. AEE and its state and regional partner organizations, which are active in 27 states across the country, represent more than 100 companies and organizations that span the advanced energy industry and its value chains. Technologies represented include, but are not limited to, energy efficiency, demand response, natural gas, solar photovoltaics, solar thermal electric, wind, energy storage, biofuels, electric vehicles, AMI, transmission and distribution efficiency, fuel cells, hydropower (including pumped storage), nuclear power, combined heat and power, and enabling software. Used together, these technologies and services, which we refer to as “advanced energy,” are integral to the creation and maintenance of a higher-performing electricity system—one that is reliable and resilient, diverse, cost-effective, and clean—while also improving the availability and quality of customer-facing services.

AEE’s members are actively pursuing the development and use of ESRs for a number of applications, including increased reliability and resilience, improved power quality and service to end-use customers, increased utilization of other resources (such as pairing with solar or wind), and the provision of wholesale services. Members actively using or seeking to develop ESRs for these and other purposes span the broad range of AEE’s members, from stand-alone energy storage technology developers, to renewable energy project developers, and to large corporate end-users seeking to support their clean energy and sustainability goals. Accordingly, AEE has a unique perspective to offer regarding compliance with Order No. 841.

II. COMMUNICATIONS

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III. COMMENTS

A. RTOs/ISOs Must Provide a Clear Path for ESRs Located on the Distribution Grid or Behind the Meter to Participate in the Wholesale Markets.

As a general matter, each of the RTO/ISO's Order No. 841 compliance filings fail to fully describe how the participation models created by their proposed tariff revisions would provide a clear path for ESRs located on the distribution grid or behind the meter to participate in their wholesale markets. NYISO, like the other RTOs/ISOs, has not fully shown how its tariff revisions and proposed participation model will fully permit ESRs on the distribution grid or behind the meter to inject and withdraw energy and otherwise fully provide all of the wholesale services that they are technically capable of providing. As discussed below, providing a clear path for participation by these ESRs requires adequate metering and accounting practices and related measures that, among other things, ensure that they have the right to inject and withdraw from the NYISO grid at the wholesale LMP and that they are not subject to multiple charges for charging energy. NYISO's filing also includes specific metering requirements for behind the meter ESRs that will create explicit barriers to the participation of such resources in the wholesale markets.

Order No. 841 requires that each RTO/ISO provide all ESRs, including those located on the distribution grid or behind the meter, with a clear path to provide all of the wholesale services they are technically capable of providing. The Commission explained there the rule is intended to

cover “[ESRs] located on the interstate transmission system, on a distribution system, or behind the meter.”⁵ It also explicitly rejected calls to limit the reach of Order No. 841 to ESRs interconnected to the transmission system, noting that barring ESRs connected to the distribution system or behind the meter would result in undue discrimination because it would treat ESRs differently from other resources (including traditional generation and demand-side resources) that currently participate in the RTO/ISO markets even though they are not connected directly to the transmission system.⁶

Further, the Commission stated in Order No. 841 that the adopted definition of “electric storage resource . . . is intended to cover [ESRs] capable of receiving electric energy from the grid and storing it for later *injection* of electric energy back to the grid.”⁷ The Commission also made clear that it intended for the RTOs/ISOs to develop participation models that would resolve existing restrictions on the ability of all ESRs “to employ their full operational range,” such as prohibitions preventing them “from injecting power onto the grid,” precluded them from providing services they are technically capable of providing, or limiting them to participating only as demand response.⁸

These provisions, taken together, require each of the RTOs/ISOs to describe how all ESRs that are technically and contractually capable of injecting energy onto the grid to provide wholesale services – including those located on the distribution grid or behind the meter – can do so. Moreover, without a clear path for these ESRs to participate in the wholesale markets, an RTO/ISO’s ESR participation model fails to meet the Commission’s overall objective in Order No. 841 to enhance competition and ensure just and reasonable rates.⁹ As the Commission found

⁵ Order No. 841 at P 29.

⁶ Order No. 841 at P 31.

⁷ Order No. 841 at P 29 (emphasis added).

⁸ See, e.g., Order No. 841 at P 11, 32-33, 150.

⁹ Order No. 841 at P 19.

there, RTO/ISO market rules that prevent ESRs – defined in the rule to include those located on the distribution grid or behind the meter – from providing services they are technically capable of providing create barriers to competition and reduce market efficiency, leading to unjust and unreasonable rates.¹⁰ Finally, as AEE has emphasized with respect to ESRs and other advanced energy technologies located on the distribution grid or behind the meter, failing to integrate these resources into the wholesale markets denies customers the significant cost benefits that can come from greater utilization of them for multiple services at wholesale and retail markets.¹¹

To fully comply with Order No. 841, then, NYISO and the other RTOs/ISOs must ensure that ESRs located on the distribution grid or behind the meter have the right to inject and withdraw from the NYISO grid at the wholesale LMP and are not subject to multiple charges for charging energy. This requires, among other things, that each RTO/ISO have in place metering and accounting practices and methodologies to ensure that all ESRs are able to provide wholesale services regardless of their location on the transmission system, distribution grid, or behind the meter.¹² Metering and accounting practices that accurately measure and account for the energy entering and exiting an ESR are critical to providing ESRs that are on the distribution grid or behind the meter a clear path to injecting energy onto the wholesale grid and providing wholesale services. Moreover, if they are not carefully designed and implemented, metering and accounting practices that fail to accurately reflect and account for the multiple services that a given ESR can provide will limit its ability to participate in both wholesale and retail markets,¹³ a result that would negatively impact competition and just and reasonable rates.¹⁴ Finally, accurate metering and

¹⁰ Order No. 841 at P 19-20.

¹¹ *See, e.g.*, Comments of Advanced Energy Economy in Docket No. RM16-23-000 (Feb. 13, 2017) at 8-14; Comments of Advanced Energy Economy in Docket No. RM18-9-000 (June 26, 2018).

¹² Order No. 841 at P 29, 31.

¹³ *See, e.g., id.* at P 53 n. 86, 322, and 324 (explaining that metering and accounting practices may need to differ to accommodate the ability of Energy Storage Resources located on different parts of the system (including on the distribution grid or behind the meter) to participate in the wholesale markets).

¹⁴ *See, e.g., id.* at P 20.

accounting practices and methodologies are necessary to implement Order No. 841's requirement that the sale of electric energy from the RTO/ISO markets to an ESR that the resource then resells back to the wholesale market is at the wholesale LMP,¹⁵ and that an ESR not be charged twice (at both wholesale and retail) for charging energy.¹⁶ Implementation of this latter requirement is critical to the ability of ESRs on the distribution grid or behind the meter to full participate in wholesale markets.

NYISO's filing, like most of the other RTOs/ISOs, contains few detailed descriptions of actual metering and accounting practices or methodologies that will provide ESRs located on the distribution grid or behind the meter with a clear path to participate in its markets. NYISO states that it will require all ESRs to be directly metered, which it asserts will allow them to inject energy onto the grid and allow comparable treatment of all ESRs regardless of their location.¹⁷ But NYISO's proposal to implement this requirement on ESRs "co-located with load" (i.e., behind the meter) will effectively put barriers on the ability of those resources to participate in the wholesale markets. In essence, NYISO is prohibiting behind the meter ESR participation, and requiring all ESRs to be located in front of the meter.

Specifically, NYISO states that these ESRs must be separately metered and have all the energy they use for charging and discharging accounted for independently of the customer's retail load.¹⁸ This requirement will, in practice, prevent an ESR that is behind the meter but still capable of injecting energy onto the wholesale grid and providing wholesale services from also being used to reduce on-site retail load, since NYISO's proposal requires the Meter Authority for the load associated with the ESR to report the full load at the site *without* netting an ESR's injections and withdrawals. NYISO is in effect forcing these ESRs to completely separate themselves from the

¹⁵ Order No. 841 at P 322.

¹⁶ Order No. 841 at P 326.

¹⁷ NYISO Compliance Filing at 61.

¹⁸ *Id.*

on-site load, removing the ability of these resources to be utilized to reduce retail energy and demand charges, an important function that is a critical part of the business case for many energy storage projects. This result is a direct barrier to the participation of behind the meter ESRs in NYISO's markets, which Order No. 841 prohibits.

Further, NYISO does not clearly describe how it will ensure that ESRs located on the distribution grid or behind the meter are not charged twice for the same charging energy (once at retail and once at wholesale). NYISO simply states that it "has discussed this requirement with the New York Transmission Owners and has raised it at its stakeholder meetings, and understands that New York's utilities do not intend to invoice [ESRs] for Energy withdrawals for wholesale market participation."¹⁹ While not clear, it appears that NYISO plans to rely on distribution utilities to net out charging activity to ensure that an ESR is not charged twice. This proposal does not, however, provide a mechanism to ensure that the correct amount of charging energy for later resale into the wholesale markets is netted out of the retail bill and charged only the wholesale rate, as Order No. 841 requires.

To remedy these problems, NYISO should be directed to implement additional metering and/or accounting practices that better account for energy injections and withdrawals used for wholesale and retail purposes. As the Commission recognizes, these metering and accounting practices and methodologies are key to ensuring that ESRs can participate in the wholesale markets (and therefore to just and reasonable rates) regardless of their location. In particular, NYISO should be directed to develop more precise accounting procedures that ensure that, for directly-metered behind the meter ESRs, the distribution utility only nets out charging energy that is later injected

¹⁹ *Id.* at 62.

onto the wholesale grid (and is thus a wholesale sale), and that charging energy that is used to reduce on-site load is appropriately settled at retail.²⁰

AEE recognizes that more widespread participation of ESRs (and other distributed energy resources) located on the distribution grid or behind the meter is new and will require new tools and learning through experience, and that the accounting and metering practices and methodologies needed to implement the Commission's requirement that ESRs located on the distribution grid or behind the meter have a full opportunity to participate can be complex. But as the Commission has explained, complexity alone does not justify failing to implement practices that accurately account for wholesale and retail activities and thereby allow all ESRs to participate in the wholesale markets and provide all of the services they are technically capable of providing.²¹

B. The Ability of ESRs to Participate in Both Wholesale and Retail Markets is Not Beyond the Scope of Order No. 841 and Must be Addressed by NYISO.

NYISO states that it declined stakeholder requests to ensure that ESRs can participate in both wholesale and retail markets because doing so is “beyond the scope of . . . Order No. 841.”²² NYISO further states that it is exploring “dual participation” of ESRs in wholesale and retail markets and intends to make a subsequent section 205 filing on this issue at an unspecified later date.²³

Contrary to NYISO's assertion, Order No. 841 directly addressed the ability of ESRs to participate in wholesale and retail markets. In rejecting requests that it require ESRs to choose between providing wholesale and retail services, the Commission held that “[i]t is possible for electric storage resources that are selling retail services also to be technically capable of providing

²⁰ AEE does not believe that the remainder of NYISO's compliance filing should be delayed pending resolution of the uncertainty in the filing regarding the participation of resources located on the distribution grid or behind the meter. The Commission can provide direction to NYISO and the other RTOs/ISOs to address these issues while implementing the other parts of their proposals.

²¹ Order No. 841 at P 323.

²² NYISO Compliance Filing at 12.

²³ *Id.* at 55.

wholesale services, and it would adversely affect competition in the RTO/ISO markets if these technically capable resources were excluded from participation.”²⁴ The Commission also rejected calls for it to adopt mechanisms like the “opt out” included in Order No. 719 that would allow states to decide whether ESRs located on the distribution system or behind the meter to provide wholesale services in addition to retail services.²⁵

Accordingly, Order No. 841 does not allow NYISO to prohibit the ability of ESRs to participate in both wholesale and retail markets. And, as described above, NYISO’s proposal for metering and accounting for transactions behind the meter ESRs creates just one barrier to the ability of ESRs located behind the meter to provide both wholesale and retail services. NYISO must address this barrier, and any others, to comply with Order No. 841.

AEE recognizes that New York has taken significant steps to put in place retail policies to support the adoption of ESRs and other advanced energy technologies, and that NYISO will necessarily need to ensure that its market rules are well-coordinated with those policies. In fact, under New York’s policies a significant amount of energy storage is expected to be deployed with the intention of providing both wholesale and retail services. If NYISO’s market rules do not facilitate these dual uses, consumers would be denied significant benefits that come from greater utilization of these resources—benefits that are anticipated under state policy. This makes it imperative that NYISO move expeditiously to ensure that these ESRs can provide both wholesale and retail services, as Order No. 841 requires.

For these reasons, the Commission should direct NYISO to address the ability of ESRs to provide both wholesale and retail services and demonstrate that it has removed barriers to this dual participation, by the same date its revised tariff implementing the ESR participation model becomes effective. It is unreasonable to delay dual participation and the benefits conferred to

²⁴ Order No. 841 at P 325.

²⁵ *Id.* at P 35.

ratepayers by that participation to the effective date of NYISO's new DER Roadmap market design, given that a stakeholder vote on that design is not scheduled and the earliest possible effective date for it is in 2021.

C. NYISO's Proposal Inappropriately Treats ESRs Differently From Other Resources With Respect to Recovery of Start-Up and No-Load Costs.

NYISO does not propose to make commitment decisions for ESRs that participate in its proposed participation model.²⁶ Instead, if the ESR submits an economic energy supply offer with a dispatchable range, NYISO will assume that the ESR has already started up (i.e., is online) and is available to be dispatched up or down according to its supply offer. As a result of NYISO's choice to avoid making unit commitment decisions for ESRs under the proposed participation model, participating ESRs would not be able to reflect start-up bids or Minimum Generation Bids in their energy supply offers.²⁷ Participating ESRs would thus be ineligible to recover any associated start-up and no-load costs (which can be included in a resource's Minimum Generation Bid) through an uplift payment. This aspect of the proposal inappropriately treats ESRs differently to other NYISO resources. Although it may be the case that most existing non-hydro ESRs do not incur start-up and/or no load-costs, this may not be true for *all* existing non-hydro ESRs, and there is no reason to believe this will be the case in the future, as future electric storage technologies may incur start-up and/or no-load costs. Accordingly, the Commission should direct NYISO to resolve this differing treatment of ESRs by clarifying that ESRs are eligible to recover the same start-up and no-load costs as other resources.

D. NYISO Does Not Comply With Order No. 841's Requirements With Respect to Submission of Operating Parameters.

With respect to the committed operating parameters Minimum Charge Time, Maximum Charge Time, Minimum Run Time, and Maximum Run Time, Order No. 841 afforded "flexibility

²⁶ NYISO Compliance Filing at 19.

²⁷ NYISO Compliance Filing at 20.

to each RTO/ISO to determine, *consistent with how it treats other resources*, whether it is mandatory for resources using the participation model for electric storage resources to submit information regarding these physical and operational characteristics, or whether resources using the participation model for electric storage resources should be allowed to submit this information at their discretion.”²⁸ NYISO states that because it is not making commitment decisions for ESRs, it will not require, or seemingly permit, ESRs to provide information concerning the following parameters: Minimum Run Time, Maximum Run Time, Minimum Charge Time, and Maximum Charge Time. NYSIO states that these parameters will not be taken into account because they concern unit commitment and NYISO will not commit ESRs.²⁹ Instead of using Minimum Run Time, Maximum Run Time, Minimum Charge Time, and Maximum Charge Time parameters, NYSIO proposes to use an ESR’s Beginning Energy Level, a parameter ESRs would be required to submit in their energy supply offer, to ensure that the ESR’s day-ahead and real-time schedules are feasible.³⁰

This proposal does not comply with the requirements of Order No. 841 with respect to Minimum Charge Time, Maximum Charge Time, Minimum Run Time, and Maximum Run Time. While Order No. 841 afforded the RTOs/ISOs flexibility as to how it would allow ESRs to represent these operating parameters, it clearly intended for the RTOs/ISOs to ensure that ESRs have some method to provide information regarding each of these parameters. Moreover, without a reasonable mechanism to provide this information, ESRs may not have sufficient tools to manage their state of charge, as Order No. 841 requires.³¹ Accordingly, NYISO should be directed to clarify (through tariff changes if necessary) how ESRs can provide information on these operating parameters to NYISO.

²⁸ Order No. 841 at P 212 (emphasis added).

²⁹ NYISO Order No. 841 Compliance at 16, 20.

³⁰ NYISO Order No. 841 Compliance at 20-21.

³¹ Order No. 841 at 178.

E. NYISO's Proposal Does Not Fully Address All The Opportunity Costs That ESRs May Face.

With respect to market power mitigation provisions, reference levels are critically important because they serve as a benchmark of a competitive offer from a given resource. Opportunity costs are a key component of an ESR's reference level, and failing to properly account for the opportunity costs an ESR faces could result in NYISO inappropriately mitigating the ESR to a reference level offer below its true short-run marginal cost. NYISO states that the expected costs of energy across the market day will factor heavily in an ESR's opportunity cost and that NYISO proposes to enhance its ability to incorporate opportunity costs in resource reference levels on a more dynamic basis.³²

While AEE appreciates NYISO's efforts to refine the calculation of the opportunity costs that may be included in an ESR's reference level, we caution that the expected changes in the price of energy across the day are not the only type of opportunity cost that ESRs face. While, as noted above, AEE opposes those aspects of NYISO's filing that effectively prohibit participation of behind the meter ESRs (i.e., those co-located with load), to the extent ESRs are co-located with load behind the meter, they may face opportunity costs associated with demand charge management. In fact, as noted above, demand charge management is an important and valuable use case for ESRs. Specifically, as noted above, certain ESRs are used to ensure that a given customer's demand does not exceed a certain threshold level, which enables the customer to avoid certain demand charges. This can be a critical component of the business case for a customer to install an ESR. If an ESR's state of charge falls below the level that is required to manage that demand charge, then the customer could face significant costs in the form of higher demand charges. Thus, the opportunity cost, which is defined as the profit associated with the

³² PJM Order No. 841 Compliance at 57-58.

next best foregone alternative, of such an ESR should be based on the expected increase in demand charges. Accordingly, the Commission should direct NYISO to clarify (through tariff revisions if necessary) that ESR reference levels may include opportunity costs related to demand charge management.

F. The Commission Should Require NYISO to State a Date Certain by Which it Expects to Implement its Order No. 841-Compliant Tariff Provisions.

NYISO requests an open-ended delay in its compliance with Order No. 841. Specifically, NYISO asks for the Commission to grant its request for an extension of the compliance date specified in Order No. 841 (365 days from the date of its compliance filing, or December 3, 2019) to “no earlier than May 1, 2020.”³³ NYISO says that it cannot propose a specific effective date due to software limitations and the need for software upgrades to be completed.³⁴

While AEE recognizes that software upgrades may be needed to fully implement Order No. 841, the Commission cannot accept an open-ended effective date. In Order No. 841, the Commission found that the existing RTO/ISO market rules are unjust and unreasonable because they include barriers to the full participation of ESRs. Given the need to remedy these market rules, the Commission should direct NYISO to establish a reasonable date certain by which it will fully implement tariff revisions in compliance with Order No. 841. That date should be as soon as possible, taking into account any reasonable additional time required to accommodate needed software changes and the imperative that unjust and unreasonable barriers to the ability of ESRs to provide all the wholesale services they are technically-capable of providing.

³³ NYISO Compliance Filing at 64.

³⁴ *Id.*

IV. CONCLUSION

For the foregoing reasons, AEE respectfully requests that the Commission approve NYISO's compliance proposal with the modifications, directives, and clarifications set forth in these comments.

Respectfully submitted,

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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.

Dated at Washington, D.C. this 7th day of February, 2019.

/s/ Jeffery Scott Dennis
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