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Via E-Mail to mmohrman@nyiso.com, ztsmith@nyiso.com, paul.hibbard@analysisgroup.com, matthew.lind@1898andco.com.

To: New York Independent System Operator, Inc. ("NYISO")
Analysis Group
1898 Co.

From: Richard Bratton, Director of Market Policy & Regulatory Affairs

Date: August 16, 2024

Re: **Comments on Proposed Installed Capacity Demand Curve Parameters for the 2025/2026 through 2028/2029 Capability Years – Consultants' Interim Final Report & NYISO Staff Draft Recommendations**

Independent Power Producers of New York, Inc. ("IPPNY")[1] submits the following Comments on the draft recommendations issued by New York Independent System Operator Inc. ("NYISO") Staff ("Staff Draft Recommendations")[2] for the Installed Capacity ("ICAP") Demand Curves for the 2025/2026 through 2028/2029 Capability Years and the Interim Final Report prepared by Analysis Group Inc. ("AG") and 1898 and Co. ("1898")[3] (collectively, the "Consultants") for the instant Demand Curve Reset ("DCR") process.

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[1] IPPNY is a trade association representing companies involved in the competitive power supply industry in New York State and in the development of electric generating facilities, the generation, sale, and marketing of electric power, and the development of natural gas and energy storage facilities. IPPNY Member companies produce most of New York's electricity, utilizing hydro, nuclear, wind, natural gas, solar, energy storage, biomass, oil, and waste-to-energy.

[2] *Proposed NYISO Installed Capacity Demand Curves for the 2025-2026 Capability Year and Annual Update Methodology and Inputs for the 2026-2027, 2027-2028, 2028-2029 Capability Years*, NYISO (July 29, 2024), ("Staff Draft Recommendations"), https://www.nyiso.com/documents/20142/45393991/NYISO-Staff-Draft-DCR-Recommendations.pdf/a56334cd-e774-85f4-df2d-66c0ae3b2527.

[3] *Independent Consultant Study to Establish New York ICAP Demand Curve Parameters for the 2025/2026 through 2028/2029 Capability Years*, Analysis Group, Inc. and 1898 & Co. (July 29, 2024) ("Interim Final Report"), https://www.nyiso.com/documents/20142/46168401/AG-1898-2025-2029-DCR-Interim-Final-Report.pdf/e7e6bde6-89f5-79d1-334e-173763152cef.

On June 28, IPPNY submitted extensive comments in response to the Consultants' Initial Draft Report (the "June Comments").[4] The Staff Draft Recommendations adopt several of the Consultants' recommendations that IPPNY has demonstrated are flawed. Chief among these is the choice of the proxy unit technology (2-hour 200 megawatt ("MW") Battery Energy Storage System ("BESS")). Neither the Consultants nor any party has demonstrated that this technology is capable of promoting the reliability of the system over the long term—the long-established core purpose of the capacity market in New York.

Initially, IPPNY thanks the Consultants for working in good faith to respond to, and incorporate, the feedback IPPNY has provided to date into the Interim Final Report. However, there remain several assumptions that continue to materially underestimate the net cost of new entry ("Net CONE") of the BESS technologies evaluated. Most critically, as IPPNY continues to establish herein, the capacity market prices that will be derived using a 2-hour BESS as the proxy unit in any Locality cannot support investment, and thus, will not foster the development and ongoing operation of the resources required to meet the reliability needs as those needs have been defined by the NYISO for decades—investments that must be signaled throughout the 2025-2029 DCR period.

To determine the proxy unit that meets the purpose underlying the NYISO's capacity market as reflected in its Services Tariff, the following parameters must be met:

- The capacity market is the mechanism designed to promote the long-term reliability of the system, and thus, the peaking unit chosen and the Net CONE ascribed to it in each Locality must, by definition, be the proxy unit sufficient to meet that core

[4] In addition to its June Comments, IPPNY also submitted a letter to the NYISO and Consultants prior to the June Comments establishing the adverse reliability implications that would come from the selection of a 2-hour BESS as the proxy unit. Additionally, IPPNY submitted supplemental comments on the Net E&AS Revenue model on July 18 since the model was released just one day before the June comment deadline.

system need.

- The reliability requirements the proxy unit must meet are two-fold: resource adequacy and transmission security, both of which have long been identified by the NYISO as necessary components to preserve system reliability and have been compensated via the capacity market because the capacity market is the only reliability product that pays the missing money associated with higher Loacational Capacity Requirements ("LCRs") set by Transmission Security Limits.
- To satisfy those requirements, the proxy unit must, among other things, be dispatchable and it must be capable of being cycled to provide peaking service which has been further defined as being able to cycle *and* provide the required energy and/or ancillary services.

As demonstrated in IPPNY's submissions to date in this DCR process and further established by the evidence provided herein, selecting a 2-hour BESS as the proxy unit does not meet the NYISO's tariff requirements. NYISO Staff, thus, must revise this aspect of its recommendations.

To meet the State's climate change initiatives while continuing to ensure reliability both as the system evolves and in its end state, all stakeholders, spanning the Governor's office across all NYISO sectors, universally acknowledge the system must have both renewable resources and adequate dispatchable resources with sufficient duration capability. The Demand Curve Reset is more than an administrative exercise; it alone produces the critical market signal that backstops investment. If set wrong, there will be inadequate new supply, needed resources will leave the system, and ultimately, the NYISO necessarily will default to executing long disfavored Reliability Must Run Agreements. For this reason, and those explained in more detail below,

NYISO Staff cannot select the 2-hour BESS to be the proxy unit for the peaking plant in any Locality.

I. 2-hour BESS Cannot Promote the Reliability of the System Over the Long Term Because It Will Not Address Known Reliability Needs.

As New York's capacity market evolved from its initial boom/bust structure to a market that clears based on ICAP Demand Curves, its core function to preserve system reliability was held paramount.[5] The Commission has closely adhered to this principle in subsequent DCRP orders as well as its orders addressing capacity market mitigation measures.[6] Recognizing its dual purpose of addressing resource adequacy and transmission security, the Federal Energy Regulatory Commission ("Commission" or "FERC")) adopted the NYISO's proposal to set Demand Curve pricing based on the costs of a peaking unit, a facility expected to operate at a lower load factor, "since the additional capacity would be needed to serve load and ancillary service requirements only when the amount of other market capacity was insufficient to do so."[7]

Putting a finer point on the requirements to demonstrate a technology's economic viability, the NYISO delineated the factors that the Commission has established must be met in its last DCR filing. Capturing the operational parameters established in the Commission's 2005 ICAP Demand Curve Order, the NYISO specified these factors must include the requirement

[5] *See, e.g., New York Independent System Operator, Inc.*, 103 FERC ¶ 61,201 (2003) ("2003 ICAP Demand Curve Order") at PP 4, 9, 13 (citing the potential for capacity deficiencies under the vertical demand curve structure and the enhanced reliability benefits deriving from the sloped approach and finding Demand Curves would improve reliability). As reflected in the 2003 ICAP Demand Curve Order, the NYSRC's establishment of an installed reserve margin each year offered a workable anchor to set a price point for these Curves. *Id*. at P 16.

[6] *See, e.g., New York Independent System Operator, Inc.*, 111 FERC ¶ 61,117 (2005) ("2005 ICAP Demand Curve Order") at P 25 ("The purpose of an ICAP requirement is to ensure a minimum amount of capacity in the market *to promote reliability, and thus, to elicit additional capacity that might not otherwise enter the market*") (emphasis added); *see also New York Independent System Operator, Inc.* 118 FERC ¶ 61,182 (2007) (capacity market compensation must be adequate to promote reliability over the long term).

[7] *See* 2005 ICAP Demand Curve Order at P 25 (recognizing probabilistic and deterministic components of design by establishing real-time operational needs supported by capacity markets).

that a resource must be dispatchable and provide the necessary energy and ancillary services.[8] Most recently, the NYISO captured the need for capacity markets to maintain system reliability in its tariff provisions to implement two separate, seasonal Demand Curves beginning May 1, 2025.[9]

Consistent with these principles the NYISO has established the requirement since the inception of issuing its reliability planning reports nearly 20 years ago that electric system reliability must be evaluated in terms of both resource adequacy *and* transmission security criteria.[10] A violation of either criteria triggers the designation of reliability needs.[11] Indeed, over time, resource adequacy and transmission security violations have *both* begun driving reliability needs in Localities throughout New York, a pattern that is likely to persist for the foreseeable future.[12]

Most notably, less than two weeks before NYISO Staff issued its Draft

[8] Docket No. ER21-502-000, *N.Y. Indep. Sys. Operator, Inc.*, 2021-2025 ICAP Demand Curve Reset Proposal (Nov. 30, 2020) ("NYISO 2020 DCRP Filing") at 7; *see also id.*, Attachment IV at P 11.

[9] *See* NYISO Market Services Tariff § 5.14.1.2.2 (establishing "translation of the annual net revenue requirement of each peaking plant into monthly values shall also account for seasonal reliability risks in determining the portion of the annual net revenue requirement to be recovered during each Capability Period.").

[10] *See, e.g., 2022 Reliability Needs Assessment (RNA),* NYISO (Nov. 15, 2022) ("2022 RNA"), at 13 https://www.nyiso.com/documents/20142/2248793/2022-RNA-Report.pdf/b21bcb12-d57c-be8c-0392-dd10bb7c6259; *see also Comprehensive Reliability Planning Process (CRPP) 2007 Reliability Needs Assessment*, NYISO (Mar. 16, 2007), https://www.nyiso.com/documents/20142/3657944/2007_RNA.pdf/a07f64da-da12-02b5-6ef2-c2b47c670823. As established in the 2022 RNA, Resource Adequacy is the ability of the electric system to supply the aggregate electrical demand and energy requirements of customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements, whereas Transmission Security is the ability of the electric system to withstand disturbances, such as electric short circuits or unanticipated loss of one or more system elements, without involuntarily disconnecting firm load.

[11] *See* 2022 RNA at 13–14 (establishing NYISO must declare reliability need and identify compensatory MWs to resolve it when either set of reliability criteria is violated).

[12] The Locality transmission security needs that IPPNY is referencing here are the Locality wide needs that have been identified for New York City in the preliminary 2024 Reliability Needs Assessment results addressed below as represented for all Localities in the form of Transmission Security Limits, not the more discrete transmission security needs identified for smaller subpockets within a Locality or the NYCA such as were previously identified for 138 kV subpockets in New York City or around the immediate vicinity of the now-retired Cayuga and Dunkirk coal facilities.

Recommendations, NYISO planning staff found both resource adequacy and Locality-wide transmission security violations driven by a statewide resource deficiency of at least 1,000 MW beginning in 2031 in its preliminary 2024 Reliability Needs Assessment ("2024 RNA") results.[13] NYISO estimates that just to address the resource adequacy aspects of the need and return the LOLE to less than 0.1 event-days/year, roughly 900 MW of "perfect capacity" will be needed by 2034.[14]

Given the sheer size and scope of the 2024 RNA findings, longer duration resources (*e.g.*, 8-hour Energy Storage Resources ("ESRs") and/or simple cycle gas turbines ("SCGT")) will be required to resolve these identified reliability needs; attempting to meet these needs with a 2-hour BESS resource would require multiple 2-hour BESS installations and the net result would be a cost that is multiples of the $/kW-month 2-hour BESS costs that have been estimated by the Consultants as of this time.[15] Notably, this need for longer duration resources on the system has led the State to narrow eligibility for its bulk utility scale storage solicitations to ESRs with

[13] Ross Altman et al., *2024 RNA Preliminary Results*, NYISO (July 24, 2024), https://www.nyiso.com/documents/20142/46031967/2024RNA_PrelimResults_July25ESPWG-TPAS.pdf/f635a8ab-458f-35e5-ef92-0847c0ea6bca. While designated as "preliminary" at this stage in the process, the findings are only subject to revision based on updated project development information, which primarily is affected by the new designation of firm projects in Transmission Owner Local Transmission Plans ("LTP"). Given the scope and breadth of the identified need, it is unlikely that such needs can be addressed to a significant degree, much less entirely.

[14] Perfect capacity is defined as capacity that is not derated or subject to energy duration limitations (*i.e.*, it is deemed to be available at maximum levels every hour of the study year) and is not assessed to account for its transmission security or interface impacts. Given that no generation resource can be a perfect capacity provider, a higher amount of MWs must be secured to meet the identified need.

[15] Staff's Draft Recommendations note on page 56 that a "200 MW, 2-hour BESS could be operated as equivalent to a 100 MW, 4-hour BESS or even a 50 MW, 8-hour BESS." While true, what the recommendations fail to note is that the Net CONE is presented in terms of $/kW-year (or month). A 200 MW, 2-hour BESS that operates as a 50 MW, 8-hour BESS has a Gross CONE that is four times as large as the Gross CONE for a 2-hour BESS because the same total investment has been spread across just one quarter of the resource's capacity. While a 200 MW, 2-hour BESS operating as a 50 MW BESS resource with a capability of 8-hours would have the same Net E&AS Revenues on a $/kW-year basis and the same CAF as an 8-hour BESS, the combination of its much higher Gross CONE netted against the same level of Net E&AS Revenues and applied against the same CAF would result in a much higher proxy cost than a facility built as an 8-hour BESS. Its Net CONE would also be massively higher than the Net CONE the Consultants have estimated for the proxy GT in all Localities.

durations of at least four hours with preference for longer duration, dispatchable resources, a threshold requirement also espoused by the Governor's Office, New York State Energy Research and Development Authority, the New York State Public Service Commission ("NYPSC"), Load Interests, and the New York State Reliability Council ("NYSRC").

In its Draft Recommendations, the NYISO acknowledges but attempts to rebut IPPNY's concerns regarding the ability of 2-hour BESS to address nearer-term transmission security needs with the following discrete statements:[16]

i. the function of the ICAP market (including the use of ICAP Demand Curves in the monthly spot auctions) is limited to attracting and retaining capacity needed to maintain resource adequacy alone set at the installed reserve margin ("IRM") and LCRs;

ii. the ICAP market and ICAP Demand Curves are not currently designed to provide price signals to support investment needed to resolve all reliability needs on the system;

iii. the 2-hour BESS will produce prices, all else equal, that equal or exceed prices over the past five years, and therefore, its selection as the proxy unit in all Localities will not drive unit retirements; and

iv. Capacity Accreditation Factors ("CAFs") explicitly account for the marginal value of a resource in meeting resource adequacy needs, and therefore, ensure that the ICAP market commensurately compensates resources for their respective contribution to meeting such resource adequacy-based reliability needs.

IPPNY demonstrates the flaws inherent in each of these attempted rebuttals individually

[16] Staff Draft Recommendations at 10.

below.

First, the DCR process is the vehicle used to set price signals sufficient to attract and retain the capacity necessary to satisfy these resource adequacy and transmission security requirements. To that end, by netting out Energy and Ancillary Service ("E&AS") revenues, the DCRP was expressly structured to provide the revenue needed to support proxy unit development in each Locality, *i.e.*, on a NYCA and Locality-wide basis.[17] The NYISO's position that "[t]he ICAP market and the ICAP Demand Curves are not currently designed to resolve (or provide price signals that fully value) all potential reliability needs or concerns on the system"[18] begs the threshold question: if capacity market payments are not the mechanism that provides this necessary revenue stream to support ongoing system reliability on a Locality and NYCA wide basis, what does?

Second, NYISO Staff notably offers no citation for its assertion that the long-term system reliability that must be preserved through the capacity markets is somehow limited to resource adequacy. The reason is simple. There is no basis for this position in its tariff or the numerous Commission orders addressing NYISO capacity markets generally or the DCR process specifically. Nor has the NYISO attempted to explain—much less justify—its blatant departure from the longstanding core principles it applies in its own planning studies which focus on both resource adequacy and transmission security as the two cornerstones of those studies.

As established in past Commission orders, it is the NYISO's responsibility to determine what technologies are eligible for consideration as the proxy peaking technology. This

[17] While the markets may not be designed to provide a sufficient signal to meet highly targeted transmission security needs such as the NYISO has identified in the past in New York City subpockets and in the immediate areas around the Cayuga and Dunkirk facilities, it must provide sufficient revenues to meet Locality and New York Control Area ("NYCA")-wide transmission security and resource adequacy needs.

[18] Staff Draft Recommendations at 10.

determination must be based, in part, on the technology's ability to promote system reliability, which, by definition, must include both resource adequacy and transmission security needs.

As the NYISO established in its 2020 DCRP Filing, the Commission has held the proxy technology to be chosen is a matter of judgment and involves assessment of multiple factors, including whether the technology is dispatchable and capable of being cycled to provide peaking service which the NYISO has further clarified requires showing it can be cycled and provide the needed energy and/or ancillary services.[19] To date, various types of gas turbines have been the only technology under extensive consideration which, by their very nature, did not have duration limitations and therefore could address both the underlying transmission security criteria regardless of the duration required as well as resource adequacy criteria. The same is no longer true in this cycle. Despite the change in resources under consideration, NYISO Staff has not provided a thorough analysis of the ability of 2-hour BESS to meet both NYISO transmission security and resource adequacy-based reliability requirements.

Third, as addressed in more detail below, record evidence reveals that ICAP Demand Curve prices are not sufficient to support operations in certain parts of the State.[20] And, in any event, shorting the market revenue necessary for maintenance will consequently lead to more outages over time that may well be more severe and require more time to return units to service, at best. Therefore, deactivation, while certainly also significant, —is not the only consideration.

[19] *See* NYISO 2020 DCRP Filing at 7–8. The other factors include the availability of the technology and sufficient operating experience. Notably, as referenced above, the consideration of technology choice has been limited in past DCR processes to different forms of gas turbine units, all of which were dispatchable and did not face energy duration limitations. The one significant exception was demand response which, as noted *supra*, was summarily dismissed due to such limitations. Thus, to date, the proxy peaking plant determination was limited to assessing these other factors.

[20] *See 2023 State of the Market Report for the New York ISO Markets*, Potomac Economics (May 2024), at 5, A-208–A-209, ("2023 State of the Market Report") https://www.potomaceconomics.com/wp-content/uploads/2024/05/2023-State-of-the-Market-ReportFinal.pdf.

Fourth, NYISO Staff's statement concerning the CAF methodology conflates its purpose. By design, CAFs do not account for a resource's contribution to meeting transmission security-based reliability needs. Yet, as the 2024 RNA indicates, transmission security is expected to be a main driver of system reliability needs. As a result, relying on the implementation of CAFs as the basis to set Demand Curves using a 2-hour BESS proxy unit is fundamentally flawed. The CAF is based only on the value in meeting a resource adequacy need. Relying on its existence to support selecting the 2-hour BESS is inapposite.

Finally, NYISO Staff attempts to support its 2-hour BESS recommendation by citing to findings in a loss of load event analysis modeled in setting the 2018 IRM that "a significant percentage are 1-2 hours in duration, and therefore, can be met by a 2-hour BESS."[21] It must first be noted that this is the very same study the NYISO previously relied upon in its Federal Power Act ("FPA") Section 205 tariff revision submission to define capacity eligibility requirements.[22] Importantly, relying on its operational expertise, the NYISO departed from the GE study results and reduced the percentages ascribed to 2-hour ESRs to half the level ascribed to 4-hour ESRs under all circumstances—a proposal accepted by FERC.[23]

In addition, the NYSRC recently revised its resource adequacy rules to incorporate Loss of Load Hours ("LOLH") in its reliability metrics. In a more recent analysis using the 2023-2024 IRM Study Final Base Case which was submitted in comments on the NYPSC's Energy Storage Roadmap, the NYSRC found potential LOLH range from 1.2 hours to 9.3 hours in

[21] Staff Draft Recommendations at 56.

[22] *See* Docket No. ER19-2276, *New York Indep. Sys. Operator Inc.*, Transmittal Letter (June 27, 2019), at 66.

[23] *New York Indep. Sys. Operator Inc.*, 170 FERC ¶ 61,033, P 117 (finding that "it is appropriate for NYISO to base its duration adjustment factors on the results of the GE Energy Study, as modified by NYISO in order to reflect the expected load carrying capacity of each resource, especially given the grounding of the GE Energy Study in the same assumptions that underlie the currently-effective IRM in NYISO").

duration, with an average of 3.6 hours, effectively double the duration previously identified reflecting system changes over just this 5-year period.[24] Moreover, the NYISO's most recently completed reliability planning study, the 2023-2032 Comprehensive Reliability Plan, confirmed transmission security-based reliability needs for Zone J with a duration of nine hours beginning in 2025,[25] the basis for the need initially identified in a Short Term Assessment of Reliability ("STAR") study for which generation in New York City was ultimately required to be retained by the NYISO in accordance with the Peaker Rule provisions.[26] As evidenced by the Net CONE evaluations presented in the Consultants' Interim Final Report, a 2-hour BESS cannot yield sufficient price signals to attract investment in resources that actually are capable of meeting the Locality wide reliability needs for such durations.

NYISO Staff's own graph set forth in its Draft Recommendations to cite the number of loss of load events having one to two hour durations also show these events are outpaced by loss of load events exceeding two hours.[27] NYISO Staff did not even reference, much less account for, managing those system needs. Even based on the NYISO's High Wind & Solar case, the number of loss of load occurrences longer than two hours exceeds those having one to two hour

[24] NYPSC Case 18-E-0130, *In the Matter of Energy Storage Deployment Program*, Comments Submitted on Behalf of the New York State Reliability Council (Mar. 17, 2023), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={D0622487-0000-C436-9C3A-E83353DC3913}. The NYSRC further found that even a 4-hour BESS could only cover the full duration of an outage in roughly 50% of cases. *Id.* at 4.

[25] *2023-2032 Comprehensive Reliability Plan*, NYISO (Nov. 28, 2023), at 30, https://www.nyiso.com/documents/20142/2248481/2023-2032-Comprehensive-Reliability-Plan.pdf/c62634b6-cdad-31dc-5238-ee7d5eaece04.

[26] *Short-Term Reliability Process Report: 2025 Near-Term Reliability Need*, NYISO (Nov. 20, 2023), at 4, https://www.nyiso.com/documents/20142/15930753/2023-Q2-Short-Term-Reliability-Process-Report.pdf/ccb826e3-e31d-157d-89a0-d2d11f600699. To address an identified deficit in meeting Zone J transmission security requirements as large as 446 MW in New York City for a duration of nine hours beginning in the summer of 2025, the NYISO utilized its expressly established authority under the Peaker Rule to retain the Gowanus 2 & 3 and Narrows 1 & 2 peakers in New York City to address the reliability need. *Id*. Permanent solutions must be in place in New York City before this temporary solution can be discontinued. *Id*.

[27] Staff Draft Recommendations at 57, fig.4.

durations.

Likewise, the Draft Recommendations do not propose any meaningful way that the 2-hour BESS can meet system needs that have durations longer than two hours and ignore that having to rely upon multiple 2-hour BESS for the longer duration needs correspondingly must significantly increase the Net CONE of the solution. Specifically, Staff's proposal that a 2-hour BESS can be operated for longer durations by simply reducing the output of the project ignores the scope of the needs that have been identified and the impact on the proxy unit's cost. With a 200 MW reliability need for just eight hours, four 2-hour, 200 MW BESS units must operate to meet the reliability need because each unit could only run for two hours at full output.[28] Being able to meet a 1-hour peak is not dispositive given these identified system conditions. To compare the 2-hour BESS with the SCGT on an apples-to-apples basis, multiple 2-hour units will thus be required, driving the Net CONE of 2-hour BESS to levels that exceed the cost of an 8-hour BESS, and far exceed the cost of the proxy SCGT. As a result, an adequately sized 2-hour BESS configuration would have a much higher Net CONE than the SCGT that the Consultants studied.

Put simply, when evaluated correctly, the 2-hour BESS is clearly *not* the lowest fixed cost option, and thus, does not meet the Services Tariff requirement to be the proxy unit. NYISO Staff cannot designate it to be the peaking plant in any Locality.

Nor can the 2-hour BESS meet the operational requirements underlying the Services

[28] *See New York Independent* System *Operator, Inc.,* 134 FERC ¶ 61,058 (2011) at PP 25, 37 (finding demand response ineligible due to limitations inherent in technology); Docket No. ER11-2224, *New York Independent* System *Operator, Inc.,* Tariff Revisions to Implement Revised ICAP Demand Curves for Capability Years 2011/2012, 2012/2013 and 2013/2014 (Nov. 30, 2010), at 6 (establishing Demand Side Resource technology generally did not have ability to respond to longer deployments under then present market design); *see also New York Independent* System *Operator, Inc.,* 146 FERC ¶ 61,043 (2014), at P 60 (finding to be an eligible proxy plant that is deemed economically viable, technology "must be physically able to supply capacity to the market" as the first prerequisite) ("2014 DCRP Order").

Tariff as long defined by the Commission. As the NYISO aptly established in 2020 and noted *supra,* the proxy unit must be able to provide the needed energy and ancillary services to the system to be eligible to serve as the proxy unit for the ICAP Demand Curves relied upon in the NYISO's capacity markets to promote the reliability of the system over the long term. To reasonably assess a resource's ability to do so, the NYISO must consider other operational factors. These factors include the NYISO's limited look-ahead capability, forecast uncertainty, and the inability to utilize a resource when it would be most valuable—factors that have been affirmed by the Commission under analogous circumstances.[29]

Here, too, the 2-hour BESS, as a standalone unit, fails. In fact, NYISO Staff itself recognizes this fact by highlighting the operational machinations that utilizing this resource, taken individually, would require to meet just part of the system need. Because augmenting its capability to the levels required to meet the operational requirements of the NYISO's tariff renders it cost prohibitive, NYISO Staff cannot select the 2-hour BESS on these grounds as well.

II. Should, *Arguendo*, the NYISO Staff Nevertheless Continue To Recommend the 2-hour BESS as the Proxy Unit in any Locality, the Staff Draft Recommendations Must Be Modified To Accurately Reflect Gross CONE in All Zones.

A. Financial Parameters

The Interim Final Report reverts the amortization period for all BESS technologies to 20 years, from 15 years. Initially, the Consultants had used the amortization period metric to address risks cited, *i.e.,* the limited operating experience of the technology across durations as well as the

[29] *See* Docket No. ER19-2276, *New York Independent System Operator, Inc.*, FPA Section 205 Filing (June 27, 2019), at 80 (specifying forecast uncertainty, limited look-ahead capability and the inability to effectively use 2-hour BESS when they would be most valuable all drive need to limit reliance on resource); *New York Independent System Operator, Inc.*, 170 FERC ¶ 61.033 (2020), at PP 84, 117 (finding appropriate use of GE Energy Study, as modified, to address limitations inherent in 2-hour BESS technology); *see also* 2014 DCRP Order at P 60 (reaffirming past precedent that NYISO Board determination of economically viability is a matter of judgment based on facts and circumstances specific to technology at issue).

inability of investors to quantify or diversify the risk presented by uncertain future CAF values. In its Interim Final Report and the Staff Draft Recommendations, the cost of hedging against such risk would be captured in the Weighted Average Cost of Capital ("WACC") parameters across all BESS technologies. However, the recommendation to increase the Cost of Equity and Cost of Debt each by 0.5%, while seemingly well intentioned, misses the mark.

It is true that all BESS technologies evaluated in this DCR process present greater CAF risk than the SCGT because the SCGT's design parameters, as referenced below, ensure 100% CAF value. However, the current proposal fails to capture the documented difference in risk—and associated need for different levels of risk premiums—*among* BESS of differing durations. In its August 1, 2024, ICAP Working Group presentation,[30] NYISO Staff specified the financial parameter assumptions remained under review and Analysis Group, Inc ("AG") verbally confirmed some adjustment to these parameters may be made in its Final Report as well. NYISO Staff must increase the WACC values for the 2-hour BESS to account for the risks specific to this technology and set a Net CONE for the proxy unit in all Localities that will draw investment to New York.

By definition, shorter duration BESS have more severe operational limitations. This fact, in turn, will drive significantly greater declines in CAF value than longer duration BESS. For example, in January 2024, the NYISO posted its preliminary CAFs based on the IRM Final Base Case for the 2024/2025 Capability Year ("CY") for Zone J of 72.56% and 82.52% for 2- and 4-hour BESS, respectively.[31] Less than one month later, the NYISO posted Final CAFs of 55.93%

[30] *See NYISO 2025-2029 ICAP Demand Curve Reset (DCR)*, Analysis Group, Inc. (Aug. 1, 2024) ("August 1 AG Presentation"), https://www.nyiso.com/documents/20142/46161626/2025-2029%20DCR%20-%20AG%20Presentation%2008012024%20ICAPWG.pdf/964b37aa-d564-cf1a-5d15-a13833f5f37a.

[31] *INFORMATIONAL Capacity Accreditation Factors (Set 2) for the 2024/2025 Capability Year*, NYISO (Jan. 30, 2024), https://www.nyiso.com/documents/20142/40365917/Informational%20CAFs-set2.pdf/7b045c77-2839-c874-

and 68.84%—a nearly 23% decline in capacity value for 2-hour BESS and 17% decline for 4-hour BESS.[32] Notably, the difference in results was due simply to the final step in the process where the LCRs were used to set the CAFs, and thus, reflects the sensitivity of the 2-hour BESS CAF calculation to limited change. In contrast, 6- and 8-hour BESS CAFs deviated no more than 3%.[33]

Weight should also be given to the CAF declines projected by Potomac Economics (the "MMU"). The MMU's study results demonstrate the 2-hour BESS will have a precipitously decreasing CAF as the system transitions to more intermittent and non-dispatchable resources.[34] These results are confirmed by the 2024 IRM Sensitivity analysis provided in the Staff Draft Recommendations, which indicates that, assuming a realistic level of renewable penetration over the 2025-2029 reset period, the CAF for 2-hour BESS is expected to decline while 4-hour CAF increases.[35]

Moreover, in PJM Interconnection, LLC ("PJM"), an Effective Load Carrying Capability ("ELCC") value, PJM's CAF equivalent for providing capacity accreditations to storage resources in various duration classes, is not even calculated for 2-hour BESS because there is no 2-hour Limited Duration Resource Class in PJM, only 4-, 6-, 8- and 10-hour duration classes.[36] Instead, as PJM explains in its original ELCC filing letter with FERC, "a 2-hour storage resource can join the 4-hour class by using an Effective Nameplate Capacity of *50 percent* of the maximum power

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6797-61ef1198ef99.

[32] *Final Capacity Accreditation Factors for the 2024/2025 Capability Year*, NYISO (Feb. 26, 2024), https://www.nyiso.com/documents/20142/41593818/Final-CAFs-for-the-2024-2025-capability-year.pdf/3efc1e06-c1b0-72d6-f736-22721709c157.

[33] Note that percent change represents percentage difference in CAF value, not percent change in CAF.

[34] *See* 2023 State of the Market Report at A-12–A-13.

[35] Staff Draft Recommendations at 59–60.

[36] *See PJM Manual 21B: PJM Rules and Procedures for Determination of Generating Capability*, PJM (Apr. 25, 2024), § 2.2, https://www.pjm.com/-/media/committees-groups/committees/mrc/2024/20240627/20240627-consent-agenda-c---5-er24-99-manual-21b-revisions---clean.ashx.

rating, since such a resource could run for four hours at half power."[37] The ELCC class rating for 4-hour BESS for Delivery Year 026/2027 is currently set at 56%.[38]

The evidence suggests that 2-hour BESS will have the greatest variability in CAF of all BESS technologies analyzed to date—analyses that, by virtue of having used different base case assumptions across studies, reveals the sensitivity to system change driven directly by this technology's capabilities. The driver for these results is clear. Given its short duration, the 2-hour BESS cannot respond to even a small change in the peak load.

While the declining CAF for shorter duration BESS and resulting lower UCAP values capture its lower capacity value, it does not account for the incremental risks inherent in investing in this technology. Investors will thus not ascribe the same level of risk, and, therefore, cost of capital to 2-, 4-, 6-, and 8-hour duration BESS based on these facts alone.

In addition, the derivation of the resource's revenue streams will also cause investors to ascribe significant risk to the 2-hour BESS. Operating reserves revenues account for the vast majority of the total Net E&AS revenues, when averaged across locations. The reserves market is much smaller than the energy market, and therefore, far more subject to diminution due to subsequent new entry. The assumed flexibility of BESS resources offering reserves in most hours of the year despite limited energy stores will exacerbate those concerns because it means additional BESS will further swamp the relatively small reserve market.

But the probability that reserves revenue opportunities will diminish is not reflected in the backward-looking Net E&AS calculation and that fact is well known by investors. Real-

[37] Docket No. ER21-278-000, *PJM Interconnection L.L.C.*, Transmittal Letter (Oct 30, 2020), at 14 (emphasis added).

[38] *ELCC Class Ratings for the 2025/2026 Base Residual Auction*, PJM (last visited Aug. 16, 2024) https://www.pjm.com/-/media/planning/res-adeq/elcc/preliminary-elcc-class-ratings-for-period-2026-2027-through-2034-2035.ashx.

world operating experience of BESS owners in the California market will further inform investors of the risk that BESS ancillary revenue opportunities can be expected to decline over the life of the reference unit. For example, last year, the California Independent System Operator ("CAISO") released a special report on 5,000 MW of BESS operating in its market, finding, *inter alia*, that BESS operators highly favored providing ancillary services to avoid cycling to provide energy and ultimately offered much more regulation than the market required. This, in turn, caused the percentage of BESS scheduled for ancillary services to decline by more than 50% in a two-year period, as seen in Figures 2.8.1 and 2.8.2 below.[39]

[39] *2023 Special Report on Battery Storage*, CAISO (July 7, 2023) at 22, https://www.caiso.com/documents/2023-special-report-on-battery-storage-jul-16-2024.pdf.

Figure 2.8.1 Day-ahead regulation requirements met by battery storage

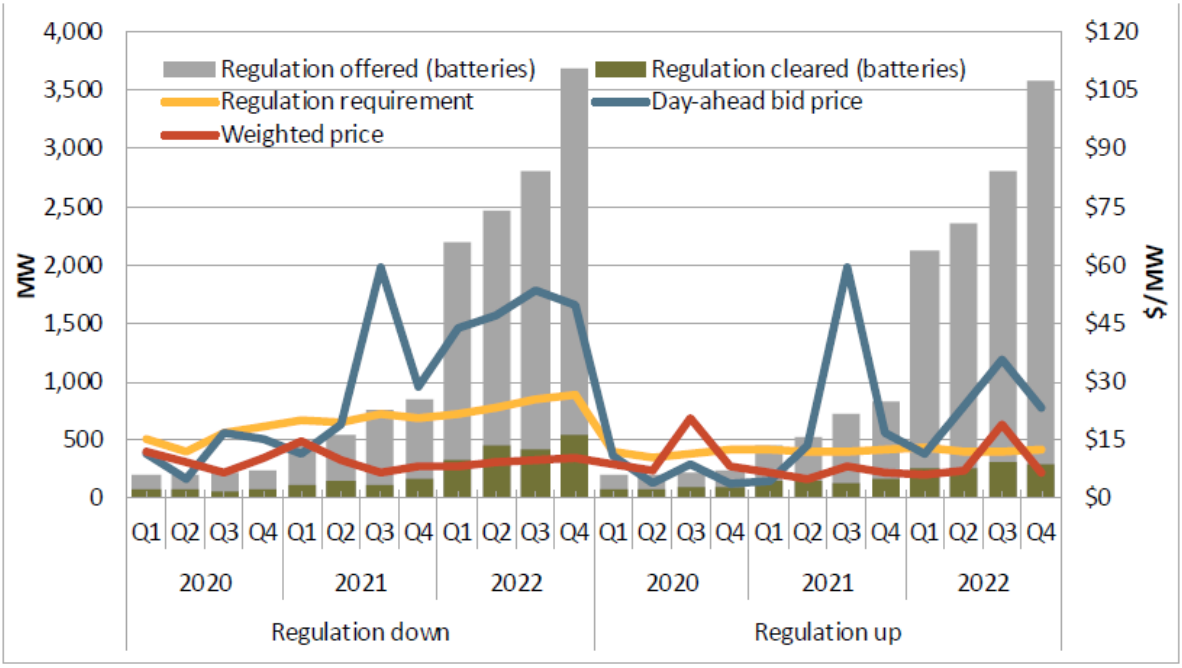
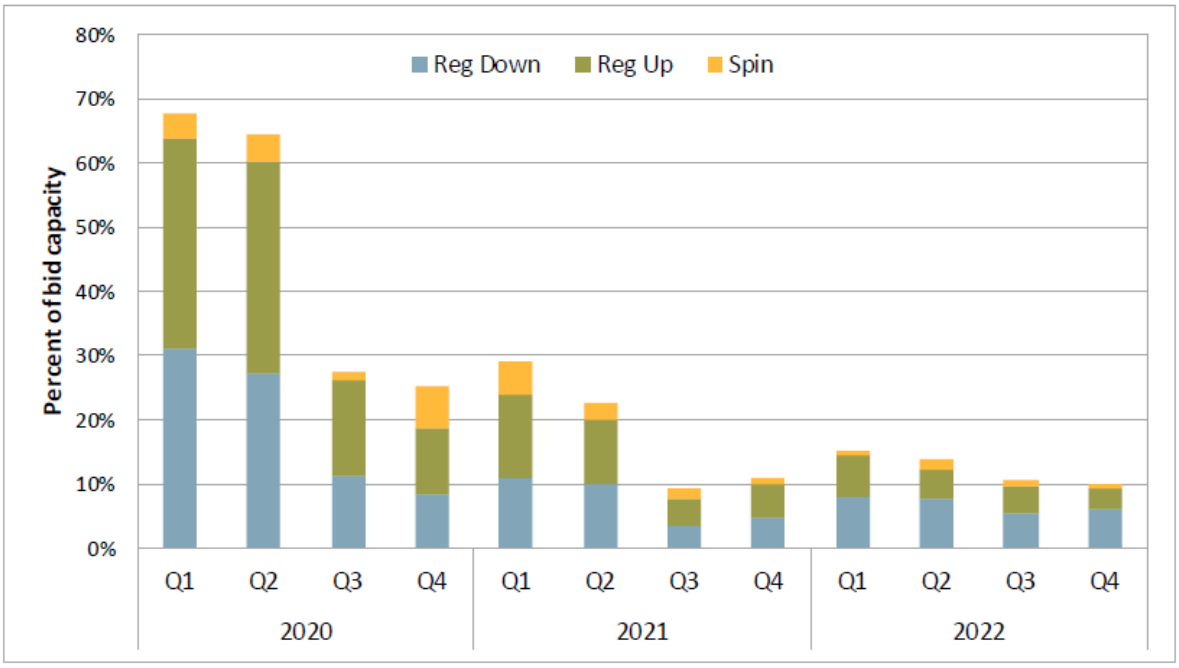


Figure 2.8.2 Percent of battery capacity scheduled for ancillary services



In New York, investors will expect to see the same overcrowding of the reserves market as State policy requirements and procurements drive BESS market development over the lifetime

of the reference unit. The likelihood that reserve revenue opportunities will decline, combined with the high CAF volatility risk, will lead investors to require a higher risk premium for 2-hour BESS investment over all other durations because of its reliance on EAS revenue over capacity revenue.[40]

Another factor that must be considered in setting the financial parameters for the 2-hour BESS is that for it to recover its costs over the amortization period it must remain the proxy unit for the entire 20-year amortization period. Separate and apart from the risk it may not remain the proxy unit due to CAF diminution and plummeting ancillary service revenues addressed above, the resource also faces the risk that there are, as expected, improvements in efficiency and installation costs for 2-hour BESS over time. The NYISO attempts to dismiss this concern by stating that potential future changes are inherent in the periodic review. However, here, the NYISO is recommending an amortization period that matches the expected physical life of the 2-hour BESS. In contrast, some residual physical life remained for the SCGTs that were selected in the reset processes prior to the last one. Thus, while a SCGT previously chosen in one reset period has subsequently been replaced by a cheaper and more efficient SCGT in a later demand curve reset, it could potentially recoup some capacity revenues to ameliorate the risk of future technology improvements. This does not apply to the BESS because the expected life equals the proposed amortization period.[41]

Finally, there are many large resources throughout the State that provide critical

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[40] *See N.Y. Indep. Sys. Operator, Inc.*, 183 FERC ¶ 61,130 (2023); *New York State Public Service Commission v. FERC*, No. 23-1192, 2024 WL 2983918 (D.C. Cir. 2024). In its order denying the NYPSC's petition for review of FERC's order accepting a 17-year amortization for the proxy peaking unit used to set the 2021-2025 demand curves, the court found rational investors capable of evaluating all legal and technological uncertainties when predicting commercial viability of a resource. *Id*. at 10, 13.

[41] *See*, *NYISO 2025-2029 ICAP Demand Curve Reset (DCR)*, Analysis Group Inc. (Aug. 1, 2024), https://www.nyiso.com/documents/20142/46161626/2025-2029%20DCR%20-%20AG%20Presentation%2008012024%20ICAPWG.pdf/964b37aa-d564-cf1a-5d15-a13833f5f37a.

reliability services and rely almost exclusively on the ICAP market for most of their revenues.[42]

In light of the findings set forth in the draft Biennial Clean Energy Standard Review, the need to make the necessary investments in these facilities to maintain their efficient operations must be taken into account if system reliability is to be ensured in the transition to the Climate Leadership and Community Protection Act ("CLCPA") end state.[43] Yet price signals based on a 2-hour BESS with the current financial parameter assumptions (and without correcting for the deficiencies noted below) may well force dispatchable resources to, where possible from a safety standpoint, delay or forego maintenance work or to prematurely submit retirement notices.

In an attempt to deflect the reliability consequences of its 2-hour BESS recommendation, NYISO Staff states the price points, all else equal, will be equal to or higher than the Demand Curve levels produced in the current reset period and summarily concludes, "[t]hus, it is not expected that demand curves based on a 2-hour BESS would be the driving force behind any retirement decisions."[44] Staff's statement ignores record evidence demonstrating ICAP revenues have, in fact, already been falling short of covering some generators' operating costs. As established in the MMU's most recent State of the Market Report, steam generators in the Lower Hudson Valley and Long Island did not earn sufficient revenues in 2023 to cover their Going Forward Costs.[45] Moreover, resources that may have remained in the market because of

[42] As reflected in the Potomac Economics 2023 State of the Market Report, the Going Forward Costs for generation on Long Island and the Lower Hudson Valley are estimated to be higher than revenues for the period from 2021 through 2023. Absent adequate price signals, existing units forced to retire could only economically be replaced by 2-hour BESS. *See* 2023 State of the Market Report at 5, A-208–A-209.

[43] NYPSC Case 15-E-0302, *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, Draft Clean Energy Standard Biennial Review (July 8, 2024), at 56–58 (finding that the global pressures from high inflation, high interest rates, supply chain cost increases and the resulting recent attrition of contracted Tier 1 and offshore wind resources, and the significant increases in expected electric load growth over the next several years result in an inability to achieve the 70% by 2030 goal until 2033).

[44] *See* Staff Draft Recommendations at 57–58.

[45] 2023 State of the Market Report at 5, fig.2.

expectations of increased capacity market revenues will recalibrate their expectations based upon the Demand Curve decisions made in this reset both in terms of maintenance that can be made to the facilities as well as their ongoing operation more generally.

Again, Staff's conclusion begs the same fundamental question: if the needed revenues are not secured from the capacity market, then where? At best, being forced to delay maintenance work, particularly on older facilities, will erode operating capability over time. At worse, resources will have increased risk of catastrophic failure and file retirement notices. These exiting resources generally do not have duration limitations and the reliability services they provide cannot be replicated by a similar quantity of short duration BESS or the intermittent resources supported by the State's public policy initiatives. However, they could be provided by the entry of dispatchable emissions free resources, depending on how the NYPSC defines them.

When the NYISO is presented with the exit of these now uneconomic and possibly in need of significant maintenance, dispatchable resources the NYISO will face limited choices, especially given the projected load growth from the electrification and other requirements that the CLCPA places on consumers. One particularly unpalatable choice long disfavored by the Commission will be the need for reliability must-run agreements.[46] Thus, the 2-hour BESS is not an eligible peaking plant and should not be considered.

B. Derating Factor

The Final Interim Report incorrectly assumes a 2% Derating Factor for each BESS in perpetuity. This assumption underrepresents the Derating Factor for each Proxy BESS in two key respects.

[46] *New York Independent System Operator, Inc.*, 150 FERC ¶ 61,116 (2015), at P 2 (emphasizing "that RMR agreements should be of a limited duration so as to not perpetuate out-of-market solutions that have the potential, if not undertaken in an open and transparent manner, to undermine price formation").

First, the NYISO's ICAP Manual specifies that until there are at least three ESRs with operational data for all months used in the Unavailability Factor calculation, the initial Unforced Capacity value for an ESR upon entry into the market will be based on the NERC class average Equivalent Forced Outage Rate Demand (EFORd) of Pumped Hydro Stations.[47] Given the lack of wholesale level ESRs on the NYISO system this higher EFORd will apply for at least the first two years of the proxy unit's life and possibly much longer. As currently modeled by AG, the BESS will not recover its costs over the amortization period because the analysis does not recognize that the amount of capacity it will be eligible to sell will not be calculated using an EFORd of 2% in the early years of its operation.

Second, the Final Interim Report must be corrected because it fails to incorporate the Derating Factor caused by the expected operation of the BESS unit. The NYISO's calculation for an ESR's Derating Factor comprises three main components during the Peak Load Window: Upper Operating Limit Availability, Storage Availability, and Energy Level Availability.[48] The third component, Energy Level Availability, considers whether there is sufficient energy in the battery during real-time operation to meet its Day-Ahead Market Commitment at the start of each hour. Energy level availability impacts from the modeled Net E&AS operation should be accurately calculated and incorporated into the conversion of the ICAP Demand Curve to a UCAP Demand Curve.

The Final Interim Report must thus be corrected to accurately account for both of these

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[47] *See Manual 4 Installed Capacity Manual*, NYISO (May 31, 2024), § 4.5(b), https://www.nyiso.com/documents/20142/2923301/icap_mnl.pdf/234db95c-9a91-66fe-7306-2900ef905338.

[48] *See Installed Capacity Manual Attachments*, NYISO (May 31, 2024), § 6.7.2, https://www.nyiso.com/documents/20142/32280612/Appendix-Attachments-for-ICAP-Manual.pdf/d3501b19-51c4-e511-59df-824dfe0e45b6.

deficiencies.

C. Tax Assumptions

1. Investment Tax Credits

Since IPPNY's comments on the Draft Report were submitted on June 28, the Consultants have made significant progress towards more accurately accounting for the net Investment Tax Credit ("ITC") benefit assumptions. IPPNY supports these corrections except for the assumed eligible basis, which continues to overestimate the eligible basis and thus the net ITC benefit.

a. Transmission Line

During the July 23 ICAP WG meeting, the Consultants suggested that their decision to include the transmission line in the ITC eligible basis was based on second-hand information on how other projects treated "generator leads" in determining their ITC eligibility. This approach is flawed, as it ignores the specific criteria the Internal Revenue Service ("IRS") would use to make a determination in this specific circumstance and lacks evidence that the IRS provided ITCs pursuant to a similar fact pattern. Instead, the Consultants should base their assumptions on U.S. Code Title 26 (the "Code") and IRS guidance rather than unverifiable practices of an unspecified project.

"Generator lead" is a term used by the Commission, not found in the Code or IRS guidance. Under the Federal Power Act, a generator lead line, such as a 1-mile or 3-mile generator lead, is a transmission facility.[49] The transmission facility owner is subject to the requirement under FERC Order Nos. 888 and 890 to file an Open Access Transmission Tariff ("OATT") or seek (or qualify for) a waiver of the requirement to file an OATT, unless and until it receives a request for transmission service.[50] In this case, FERC may grant the transmission facility owner's

[49] See 16 U.S.C. §§ 796(23), 824(a)-(b) (2006).

[50] *See Open Access and Priority Rights on Interconnection Customer's Interconnection Facilities, Order No. 807*, 150 FERC ¶ 61,211, *order on reh'g*, 153 FERC ¶ 61,047 (2015); *see also Milford Wind Corridor, LLC*, 129 FERC ¶

request for waiver of the requirement to have an OATT on file for its transmission facilities. The potential for FERC to grant a waiver does not influence the IRS's determination of whether the transmission line qualifies as energy property or part of a qualified facility.

The IRS does not define the term "transmission line." However, it is clear that the BESS's transmission line, i.e., generator lead, is the same as those mentioned in prior IRS guidance, and according to this guidance, the IRS excludes transmission lines from ITC eligible basis.

In general, under Section 48(a) the Code, "the [ITC] for any taxable year is the energy percentage of the basis of each energy property placed in service during such taxable year." In other words, the ITC amount equals a percentage of the cost basis of any "energy property", as the term is defined under the Code. The term "energy property" means any property which: (i) meets the requirements of Section 48(a)(3)(A) of the Code (in this case, energy storage technology under Section 48(a)(3)(A)(ix)); (ii) which is either constructed or acquired by the taxpayer; (iii) with respect to which depreciation (or amortization in lieu of depreciation) is allowable; and (iv) meets applicable performance as quality standards. In this case, the "energy property" would be the BESS system and any property that is "functionally interdependent" to or an "integral part" of the BESS.

In 2018 the IRS published Notice 2018-59 ("Notice") on what constitutes beginning construction on energy property for tax purposes. Taxpayers may use the date on which physical work of a significant nature was completed or the taxpayer can show they spent 5% of the total

61,149, at P 24 (2009) (noting that designation as a "generator lead line" does not render a line exempt from the Commission's regulation of transmission facilities); *Evergreen Wind Power III, LLC*, 135 FERC ¶ 61,030 (2011). FERC's regulations provide blanket waiver from the requirements of Order Nos. 888 and 890 for any public utility that is subject to such requirements solely because it owns, controls, or operates Interconnection Customer's Interconnection Facilities, as defined in the standard generator interconnection procedures and agreements, where such public utility either sells electric energy or commits to comply with section 210 of the Federal Power Act. 18 C.F.R. § 35.28(d)(2).

cost of the energy property.[51] This analysis is not relevant in this case; however, the Notice provides guidance on what the IRS considers to be the proper scope of energy property. The Notice provides that:

> Only physical work of a significant nature on tangible personal property and other tangible property used as an integral part of the activity performed by an energy property will be considered for purposes of determining whether a taxpayer has begun construction of the energy property. This includes property integral to the production of electricity but does not include property used for the transmission of electricity . For the purposes of the Five Percent Safe Harbor, the cost of any property not integral to an energy property is not included in the total cost of the energy property under section 5.02 of this notice.
>
> Thus, physical work on, or costs paid or incurred for, a transmission tower located at the site where the energy property is located will not be considered for purposes of determining whether a taxpayer has begun construction because transmission is not an integral part of the activity performed by the energy property. However, physical work on, or costs paid or incurred for, a custom-designed transformer that steps up the voltage of electricity produced at an energy property to the voltage needed for transmission (69 kilovolts or greater) will be considered for purposes of determining whether a taxpayer has begun construction of the energy property because power conditioning equipment is an integral part of the activity performed by the energy property.[52]

The Notice clearly shows that work on the transmission line would not be considered physical work of a significant nature because it is not integral to the function of the energy property.

The IRS adopts the "integral part" analysis in the Proposed Regulations for Section 48. The preamble to the Proposed Regulations provides a historic overview of the scope of energy property, citing that:

> On November 9, 1978, the Energy Tax Act of 1978, amended section 48 by

[51] *See IRS Notice 2018-59: Beginning of Construction for the Investment Tax Credit under Section 48*, IRS (June 22, 2018), https://www.irs.gov/pub/irs-drop/n-18-59.pdf.

[52] *Id*. at § 4.02(1).

> adding a new subsection (then section 48(l)) to define ‘‘energy property.’’ Public Law 95–816, 92 Stat. 2174. On January 23, 1981, the Treasury Department and the IRS promulgated T.D. 7765 to provide additional guidance regarding the definition of energy property. 46 FR 7287–01. The preamble to T.D. 7765 states that "[i]n response to comments, the definition of solar energy property was expanded to make it clear that it includes storage devices, power conditioning equipment, transfer equipment, and property solely related to the functioning of those items. However, such equipment does not include transmission equipment.
>
> The preamble to T.D. 7765 also provides that ‘‘[a] number of comments cited specific legislative history to the effect that wind energy property includes "transfer equipment." The preamble to T.D. 7765 defines "transfer equipment" as including equipment that permits the aggregation of electricity generated by several windmills and equipment that alters voltage in order to permit transfer to a transmission line. The preamble to T.D. 7765 concludes that transfer equipment is specifically added to the definition of wind energy property, however, transfer equipment does not include transmission lines.[53]

This again makes it clear that the IRS does not consider a transmission line to be ITC-eligible property. Section 48(c)(6) defines the scope of energy property. Under Proposed Regulation Section 1.48-9(f), property included in energy property includes property encompassing the technology identified in the Code (*i.e.*, energy storage technology) as well as, "[p]roperty owned by the taxpayer that is an integral part of an energy property . . . Energy property does not include any electrical transmission equipment, such as transmission lines and towers, or any equipment beyond the electrical transmission stage.)[54] "For purposes of the section 48 credit, property owned by a taxpayer is an integral part of an energy property owned by the same taxpayer if it is used directly in the intended function of the energy property . . . and is essential to the completeness of the intended function. Property that is an integral part of an energy property is energy property."[55] Property that is integral to the energy property includes, "power

[53] Definition of Energy Property and Rules Applicable to the Energy Credit, 88 Fed. Reg. 82188, 82198.

[54] *Id.* at 82214.

[55] *Id.*

conditioning equipment and transfer equipment used to perform the intended function of the energy property."[56] As described above, the legislative history of Section 48 and now the Proposed Regulations for Section 48 clearly excludes transmission lines from the definitions of power conditioning equipment and transfer equipment. This is because the transmission line is not essential to the completeness of the intended function of the BESS, nor does it facilitate aggregation of generated electricity.[57] The function of the BESS according to Section 48 is

[56] *Id*. at 82215. "Power conditioning equipment includes, but is not limited to, transformers, inverters, and converters, which modify the characteristics of electricity or thermal energy into a form suitable for use or transmission or distribution. Parts related to the functioning or protection of power conditioning equipment are also treated as power conditioning equipment and include, but are not limited to, switches, circuit breakers, arrestors, and hardware and software used to monitor, operate, and protect power conditioning equipment. Transfer equipment includes equipment that permits the aggregation of energy generated by components of energy properties and equipment that alters voltage in order to permit transfer to a transmission or distribution line**. Transfer equipment does not include transmission or distribution lines. Examples of transfer equipment include, but are not limited to, wires, cables, and combiner boxes that conduct electricity. Parts related to the functioning or protection of transfer equipment are also treated as transfer equipment and may include items such as current transformers used for metering, electrical interrupters (such as circuit breakers, fuses, and other switches), and hardware and software used to monitor, operate, and protect transfer equipment.** Power conditioning equipment and transfer equipment that are integral to an energy property may be integral to another energy property or used by a qualified facility (as defined in section 45(d) of the Code), so long as the total cost basis of the integral property is properly allocated across the energy property and qualified facility that share such property." *Id*. (emphasis added).

[57] Section 48 provides two illustrative examples of its intention: "*Example 1*, X constructs a solar energy property (Property) comprised of 500 separate solar panels. The solar panels are connected by wires, cables, and combiner boxes. Generated electricity is conditioned for subsequent use through an inverter and eventually carried to a substation that houses a transformer where the electricity is stepped up to electrical grid voltage before being transmitted to the electrical grid through an intertie. All components of the Property, ***up to and including the transformer*** are either functionally interdependent components of the Property or are integral parts of the Property. Therefore, the Property is an energy property for purposes of the section 48 credit. When X places the Property in service, the cost of the components ***up to and including the transformer*** is included in the basis of the Property for purposes of computing the section 48 credit"; and *Example 3*, "Z constructs a qualified offshore wind facility (Offshore Wind Facility) comprised of 150 turbines for which Z makes a valid election under section 48(a)(5) of the Code to claim the section 48 credit in lieu of the section 45 credit. The alternating current electricity generated by the individual wind turbines will be carried by inter-array cables to an offshore substation where a transformer will step up the voltage of the electricity and a converter will convert it to direct current so it may be transported by subsea export cables to an onshore substation adjacent to the point of interconnection with the electrical grid. When the electricity reaches the onshore substation, it will flow into another converter where it will be converted back to alternating current, and then through a transformer and associated switchgear where it will be converted to electrical grid voltage and where the Offshore Wind Facility can be electrically isolated from the grid. ***The electricity will then pass through an intertie that will take the electricity from the substation to the point of interconnection with the electrical grid. All components of the Offshore Wind Facility, up to and including the transformer and switchgear housed in the onshore substation,*** are either functionally interdependent components of an energy property or integral parts of an energy property. Therefore, the Offshore Wind Facility is an energy property, and when Z places the Offshore Wind Facility in service, the cost of the components ***up to and including the transformer and switchgear housed in the onshore substation*** are included in the basis of the Offshore Wind

property that "receives, stores, and delivers energy for conversion to electricity."[58] With a BESS, the energy is ready for delivery after the step-up transformer increases the voltage to that of the electrical grid.

Section 48E provides a technology-neutral tax credit for investment in facilities that generate clean electricity and replaces the credit under Section 48 for 2025 on. Section 48E provides an ITC for a "qualified facility." Proposed § 1.48E–1(b)(1) would provide that the credit is an amount equal to the applicable percentage of the qualified investment for such taxable year with respect to any qualified facility (as defined in proposed § 1.48E– 2(a)) and any energy storage technology (as defined in proposed § 1.48E–2(g)).[59]

The proposed regulations for Section 48E would adopt a similar standard, however, the statute uses the term "qualified facility" rather than "energy property" to describe ITC eligible property. Proposed § 1.48E–2(a) would define a ''qualified facility'' to mean a facility that is used for the generation of electricity; is placed in service by the taxpayer after December 31, 2024; and has a GHG emissions rate of not greater than zero (as determined under rules provided in § 1.45Y–5).[60] The Proposed Regulations for Section 48E would provide that a qualified facility includes a unit of qualified facility (as defined in proposed § 1.48E–2(b)(2)(i)) and property owned by the same taxpayer that is integral to the unit of qualified facility (as described in proposed § 1.48E–2(b)(3)).[61] Proposed § 1.48E–2(b)(1) would provide that any component of property that meets the requirements of proposed § 1.48E–2(b) is part of a qualified facility regardless of where such

Facility for purposes of computing the section 48 credit." *Id*. (emphasis added).

[58] *Id*. at 82195.

[59] *See* Section 45Y Clean Electricity Production Credit and Section 48E Clean Electricity Investment Credit, 89 Fed. Reg. 47792, 47813.

[60] *Id*.

[61] *Id*.

component of property is located.[62] Proposed § 1.48E–2(b)(1) would provide that a qualified facility does not include any electrical transmission equipment, such as transmission lines and towers, or any equipment beyond the electrical transmission stage.[63]

The analysis is essentially the same under section 48 and 48E, making it clear that transmission lines are not included in the eligible basis for ITC-eligible property.

b. Allocation of Cost to Eligible Components

Additionally, the Consultants have incorrectly allocated certain Owner's Costs as part of the eligible basis. The table below provides the best estimation of Owner's Costs which should be capitalized and apportioned to the BESS proxy's property. Generally, the cost of each item marked "Capitalized" should be included in the basis of both eligible and ineligible property using a reasonable accounting method to allocate and apportion the costs between the two categories. If a cost pertains only to one property, it should be fully capitalized to that property. Any costs that should be capitalized must be allocated between ITC-eligible property and non-ITC-eligible property based on a methodology prescribed in the United States Treasury Department Regulations for Section 263A. The Regulations provide several methods for allocation: a facts and circumstances method, two simplified methodologies, and a methodology for allocating mixed service costs.[64]

Expense	**Capitalization Status**	**Treasury Regulation**
Owner's Project Development	Capitalized	Treas. Reg. 1.263A-1(e)(4), or

[62] *Id.*

[63] *Id.*

[64] *See* 26 C.F.R. § 1.263A-1(f).

		Treas. Reg. 1.263A-1(e)(4)(iii)
Owner's Operational Personnel Prior to	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(A)
Owner's Engineer	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(P)
Owner's Project Management	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(A)
Owner's Legal Costs	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(H)
Owner's Start-up Engineering and	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(A)
Construction Power and Water	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(N)
Permitting Support	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(P)
Public Outreach and Area	Not Capitalized	Treas. Reg. 1.263A(e)(4)(iv)(L)
Startup/Testing (Fuel & Consumables)	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(N)
Site Security	Capitalized	Treas. Reg. 1.263A-1(e)(4)(ii)(G)
Operating Spare Parts	Not Capitalized	Treas. Reg. 1.263A-1(e)(2)(i)(A)
Land Lease During Construction	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(K)
Builders Risk Insurance	Capitalized	Treas. Reg. 1.263A-
Sales Tax	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(L)
AFUDC	Capitalized	Treas. Reg. 1.263A-1(e)(3)(ii)(V)

c. Eligible Basis Calculations

Given the importance of accurately determining the ITC-eligible basis, the Consultants must provide a detailed, auditable analysis supporting their assumptions. A rough estimation

rounded to the nearest 5% is inadequate and fails to meet the standard required for conducting this DCR process. Such a level of accuracy can result in a variance of ±2.5%, potentially leading to a significant overestimation or underestimation of the Demand Curve Reference Point Price. Instead, a structured approach ensures a precise and compliant allocation of costs, meeting the required standards for determining the ITC-eligible basis and this DCR process. A recommended process is as follows:

1. Identify the ITC-eligible and non-ITC-eligible components, ensuring to separate items within the EPC scope as appropriate.
2. Allocate the Allowance for Funds Used During Construction proportionally across all costs.
3. Apportion the sales tax based on each item's contribution to the total sales tax.
4. Allocate the non-capitalized costs to the non-ITC-eligible basis.
5. Fully allocate costs that pertain only to one property to that specific property.
6. Allocate the remaining costs to the basis of both ITC-eligible and non-ITC-eligible property using a reasonable accounting method to apportion the costs between the two categories.

2. BESS Sales Tax

The Final Interim Report significantly underrepresents the cost of sales tax in the capital budget and omits sales tax during the O&M period for the BESS proxy. Both New York State and New York City impose sales tax on receipts from the sale of tangible personal property.[65] Additionally, New York tax law imposes a sales tax on the receipt from every sale of certain specifically enumerated services as related to tangible personal property, including installing,

[65] *See* N.Y. Tax Law § 1105(a); NYC Admin. Code § 11-2001.

maintaining, servicing, or repairing such property, except for property that constitutes a capital improvement to real property.[66]

There is no exemption from sales tax on the purchase of materials used in a capital improvement project for the proxy BESS. In a 2009 advisory opinion, the New York State Department of Taxation and Finance determined that stand-alone "flywheel" energy storage systems used predominantly for storing and returning electricity to the grid, did not qualify for the sales tax exemption under Section 1115(a)(12) of the Tax Law because it was not directly and predominantly used in the production of electricity for sale by generating. Consequently, the purchase or use of such systems is subject to sales or use tax under Sections 1105(a) and 1110 of the Tax Law.[67] Bills to amend Section 1115 of the Tax Law to include commercial energy storage systems have failed to pass both houses of the New York Legislature as recent as this past legislative session.

Whether or not a contractor collects sales tax from a customer depends on if the work being performed is considered a capital improvement to real property, and is installation, repair, or maintenance work.[68] Capital improvements are defined as additions or alterations to real property that (A) substantially add to the value of the real property, or appreciably prolong its useful life, (B) become part of the real property or are permanently affixed to the real property so that removal would cause material damage to the property or article itself, and (C) are intended to become a permanent installation.[69] As a general rule, additions or alterations to real property for or by a

[66] *See* N.Y. Tax Law § 1105(c)3.

[67] Petition No. S081208B Advisory Opinion, New York State Department of Taxation and Finance (Aug. 21, 2009) ("2009 Advisory Opinion") https://www.tax.ny.gov/pdf/advisory_opinions/sales/a09_36s.pdf.

[68] *Tax Bulletin: Capital Improvements*, New York State Department of Taxation and Finance (July 27, 2012) https://www.tax.ny.gov/pdf/tg_bulletins/sales/b15_104s.pdf.

[69] *See* N.Y. Tax Law § 1101(b)(9)(i).

tenant with respect to a leased premises are presumed to be temporary in nature and consequently, they do not qualify as capital improvements.[70] Therefore, the installation of all equipment and material for the proxy BESS is likely subject to New York sales tax, particularly since it is installed on leased property, which fails the permanence test required for capital improvements. This was reaffirmed by the New York State Department of Taxation and Finance in the 2009 advisory opinion, which stated that tangible personal property might qualify for exemption from tax under Tax Law Section 1105(c)(3)(iii), to the extent it is installed into real property owned by the petitioner (*i.e.*, not leased property).[71]

In addition, as stated above, Section 1105(c)(3) of the New York Tax Law specifically imposes a sales tax on the services of maintaining, servicing or repairing tangible personal property not held for sale in the regular course of the taxpayer's business, leading to the conclusion that any routine maintenance, repair or servicing of the equipment associated with the battery storage facility will be subject to a sales tax. Furthermore, because service contracts, maintenance contracts and extended warranties are generally considered sales of services to be provided in the future, the taxability of these contracts typically follows the taxability of general repair and maintenance services. As such, because New York taxes the repairs of tangible property, it is reasonable to assume that maintenance contracts and extended warranties will also be taxed (although the labor or parts used in the performance of the service may be exempt). This is particularly true when such contracts or warranties are bundled with the underlying tangible personal property.

Similarly, the services of maintaining, servicing, or repairing real property on which the

[70] *See Publication 862: Sales and Use Tax Classifications of Capital Improvements and Repairs to Real Property*, New York State Dep't of Taxation and Finance (last visited Aug. 16, 2024), https://www.tax.ny.gov/pdf/publications/sales/pub862.pdf.

[71] 2009 Advisory Opinion at 4.

battery storage facility is installed will be subject to sales tax. Section 1105 (c)(5) of the Tax Law specifically provides for sales tax on the following services: "Maintaining, servicing or repairing real property, property or land, as such terms are defined in the real property tax law, whether the services are performed "in or outside of a building, as distinguished from adding to or improving such real property, property or land, by a capital improvement." Therefore, most repairs and maintenance to real property are subject to sales tax.[72]

Based on the amount of sales tax included in the Owner's Costs, the Consultants have only allocated enough sales tax for $104-110 million in purchases, depending on the locality. This amount is insufficient to cover even the material purchases alone. To provide an accurate representation in the Demand Curve, the Consultants must account for all sales tax which the developer would incur, including the applicable sales tax on equipment and services during both the construction and O&M periods.

3. BESS Mortgage Recording Tax

The Final Interim Report has not accounted for mortgage recording tax on any proxy unit in any Locality, and the Consultants have not provided evidence to justify this omission. Article 11 of New York State's Tax Law authorizes the state to impose a recording tax of up to $1.05 per $100 of principal debt or obligation secured by a mortgage recording, and it also empowers certain counties and cities to levy additional local mortgage recording taxes.[73] These local rates can vary; for example, in New York City, a combined state and city recording tax of $2.80 per $100 is imposed on mortgages securing $500,000 or more on commercial property.[74]

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[72] Tax Bulletin, *Contractors - Repair, Maintenance, and Installation Services to Real Property*, New York State Dep't of Taxation and Finance (March 17, 2016), https://www.tax.ny.gov/pdf/tg_bulletins/sales/b16_129s.pdf.

[73] *See* N.Y. Tax Law §§ 253 – 253-Y*3.; NYC Admin. Code § 11-2601.

[74] *See* Form MT-15: Mortgage Recording Tax Return at 4, https://www.tax.ny.gov/pdf/current_forms/mortgage/mt15.pdf.

The Consultants have assumed that all proxy units will be financed with 55% debt. However, for any proxy unit to be financed, lenders would require that the mortgage be recorded to ensure it is legally enforceable and holds priority over other claims, as unrecorded mortgages with unpaid taxes cannot be foreclosed, modified, or enforced. Recording the mortgage and paying the necessary taxes safeguard the lender's interests, preventing significant risks such as invalidity of the mortgage or loss of priority to later liens.

Independent power producers in applicable New York localities incur this tax before obtaining any financing.[75] For instance, in a case similar to the proxy unit where a 345 kV generator lead crossed city-owned land via a revocable consent and utility land via an easement, the mortgage recording tax was incurred to secure construction financing.[76] To accurately reflect this tax in the Demand Curve, the Consultants must calculate the mortgage recording tax at the rate specific to each proxy unit's Locality, which would be incurred upon issuance of construction financing while maintaining the prescribed debt-to-equity ratio, and recalculate the Allowance for Funds Used During Construction for all proxy units.

D. Site Leasing During Operation and Construction

1. During Operation

The Final Interim Report recommends a site leasing cost of $717,000 per acre-year for NYC, which continues to underestimate the actual In City site leasing costs. For Localities other

[75] *See* NYC Department of Finance Office of the City Register, Document ID: 2017061400101001, https://a836-acris.nyc.gov/DS/DocumentSearch/DocumentImageView?doc_id=2017061400101001.

[76] *See* NYC Department of Finance Office of the City Register, Document IDs: 2010200100720001 https://a836-acris.nyc.gov/DS/DocumentSearch/DocumentImageView?doc_id=2010100100720001.

than NYC, the Consultants developed site leasing costs by escalating the assumed values from the 2021-2025 DCR study to 2024 dollars using the cumulative change in the Gross Domestic Product (GDP) implicit price deflator (Q1 2019-Q1 2024). In contrast, for NYC, the Consultants based the site leasing costs on comparable property transactions from 2019-2023, as identified in the JLL report commissioned by TigerGenCo.[77]

While the Final Interim Report accepts the JLL study's methodology for identifying appropriately zoned and sized parcels, the Consultants chose to derive the site leasing costs by applying an arbitrary Cap Rate of 5.9% to the average purchase price of the comparable property transactions. This methodology is flawed for several reasons detailed in the JLL comments. Moreover, the Consultants did not escalate the comparable property transactions to reflect costs in 2024 dollars, unlike for other Localities. If the Consultants continue to use their current methodology, they must escalate each sale by the ratio of the current GDP implicit price deflator to the GDP implicit price deflator of the respective sales quarter, consistent with the approach in other Localities. This adjustment would result in an annual site leasing cost of $817,588 per acre-year before accounting for property tax and expenses.

Additionally, the Final Interim Report's cap rate methodology for determining NYC's site leasing costs fails to adequately capture existing property taxes assessed on the land, which do not qualify for exemption and do not account for landowner expenses that will be incurred annually over the life of the lease, such as insurance. The cap rate methodology utilizes the landowner's net operating income. Net operating income plus taxes and expenses, in turn, yield the site leasing costs. For NYC, the Consultants have determined a net operating income of

[77] *See New York City's M Zoned Land Value Analysis*, JLL (May 2024), https://www.nyiso.com/documents/20142/44660396/TigerGenCo-New-York-City%20M-Zoned-Land-Value-Analysis.pdf/5198854f-c0ce-db6c-8a17-d1f9eef79dbb ("JLL Report").

approximately $713,000 per acre-year but site leasing costs of $717,000 per acre-year, just $4,000 per acre-year more to capture property taxes and other landowner expenses.

A review of the NYC tax rolls for vacant, M-zoned land, greater than or equal to six acres and within one mile of a 345 kV substation, identified one privately owned parcel. This property has an annual property tax cost of $75,342 per acre-year as of July 2024 and provides a reasonable proxy for property taxes to be assigned to the New York City peaking plant.[78]

The Final Interim Report must thus be updated to account for the site leasing costs in 2024 dollars and include existing property taxes. Doing so produces a total of $892,930 per acre-year, plus a reasonable estimate for other landowner expenses.

2. During Construction

The Final Interim Report fails to account for entire periods when a proxy unit will incur site leasing costs. For instance, the 2-hour BESS has a stated construction period of 30 months, yet only 15 months of rent is reflected in the construction budget. During the August Meeting, the Consultants indicated that they only budgeted site leasing costs for the 15-month period for onsite construction. By definition, their approach excludes the 15-month pre-construction period during which interconnection, permitting, engineering, and construction financing activities will all require site control. Rent-free site control will not be provided during these periods.

Moreover, this assumption is inconsistent with the Consultant's cap rate valuation methodology, which identifies the rate of return the landowner expects to receive over the term of the lease. Cutting out rent for the first 15 months of the lease will simply shift the same total site leasing costs needed to achieve the assumed cap rate to higher rent payments in all remaining

[78] *See* NYC Department of Finance Property Information for Borough: Queens (4), Block: 850, Lot: 350 https://a836-pts-access.nyc.gov/care/datalets/datalet.aspx?mode=acc_hist_summ&UseSearch=no&pin=4008500350&jur=65&taxyr=2025&LMparent=20.

months.

The Final Interim Report must be corrected to incorporate all site leasing costs during the entire construction period for each proxy technology in each Locality.

E. Transmission and Electrical Interconnection Costs

The revised capital costs do not adequately address the inadequacy of assuming $29 million for transmission and electrical interconnection of the facility. Consolidated Edison Company of New York Inc. estimates the cost of 345 kV land cables at $47 million per mile, without considering interferences or obstructions that may be encountered.[79] Further, the failure to provide appropriate financial assumptions for locating within a Disadvantaged Community given the one-mile distance to a substation must be corrected.

F. Net Operating Losses

The Final Interim Report BESS DCRP results are based on the flawed assumption that net operating losses ("NOLs"), which arise when allowable deductions exceed taxable income within a tax period, can be monetized in the same tax period they occur. This incorrect assumption implies that BESS owners can use these NOLs to offset Federal, NYS, and New York City ("NYC") tax obligations for other businesses, leading to a significant underestimation of the levelized carrying charge rate.

Most independent power producers lack the necessary structure and sufficient net operating income to benefit from this assumption. For a developer to be able to fully utilize the NOLs, it would have to already possess other NYS assets, and in the case of Zone J, NYC assets with adequate net operating income to realize this benefit. Even if some developers could utilize

[79] Case 20-E-0197, *Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act,* Petition of Consolidated Edison Company of New York, Inc. for Approval to Recover Costs of Brooklyn Clean Energy Hub (Apr. 15, 2022), at 30.

this benefit, the assumption remains improper as it contradicts NYISO's precedent that demand curve parameters should enable any developer to enter the NYISO market. Consequently, developers without existing NYS or NYC assets would be unable to fully recoup their investments, effectively barring them from developing in the NYISO market.

The Final Interim Report should instead assume that deferred tax assets are created from NOL carryforwards, limiting their utilization to 80% of taxable income in any future tax period.

G. **BESS Full Time Employees and Fire Safety**

The Final Interim Report assumes that the 2- and 4-hour duration BESS have zero full-time equivalent employees, arguing that the project can be remotely monitored by existing owner staff. However, when questioned about 24/7 operational control of the battery, the Consultants admitted that such coverage was not assumed.

Article 8 of NYISO's Standard Large Generator Interconnection Agreement mandates that developers maintain satisfactory operating communications with the Connecting Transmission Owner and NYISO. This includes providing standard voice line, dedicated voice line, and facsimile communications at its Large Generating Facility control room or central dispatch facility. Additionally, during an emergency Max Gen Pickup, generators, at NYISO's discretion, will be instructed via voice communication to increase output to their upper operating limits as quickly as possible until otherwise directed.

The Final Interim Report fails to address how a properly trained operator could receive a verbal dispatch instruction via a dedicated voice line and take immediate action during normal and emergency conditions in accordance with North American Electric Reliability Corporation, Northeast Power Coordinating Council, Inc., NYSRC, NYISO, and Connecting Transmission Owner requirements. Furthermore, the report lacks explanations for how other operational and

maintenance requirements will be adequately managed remotely, such as site security, access control, outage planning, work authorization, balance of plant maintenance, environmental compliance, and emergency response.

The Final Interim Report also overlooks the NYC Fire Code and NYC Fire Department Rules. Industry feedback indicates that the City of New York has implemented numerous requirements exceeding NYS standards, including the necessity for a site of this size to have four FDNY B-28 Certificate of Fitness ("CoF") holders for the supervision of Stationary Energy Storage Systems.[80] A CoF holder is responsible for supervising commissioning, operations and maintenance, recordkeeping, annual inspections, decommissioning, and emergency management situations. They must be trained and knowledgeable in BESS operation, reachable by phone immediately, onsite within two hours, and capable of electrically isolating the BESS.

It is also unclear whether the Final Interim Report accounts for the recently released Interagency Fire Safety Working Group recommendations, particularly as those recommendations will apply to the Rest of State BESS unit.[81] Among the recommendations that are not explicitly accounted for in the Final Interim Report are: (i) a recommendation that industry-funded independent peer reviews be required of all BESS projects, (ii) expanded requirements for explosion controls to include cabinet BESS, (iii) that fire mitigation personal be mandatory for every project, available for dispatch within 15 minutes, and able to arrive on site within 4 hours to provide support to local emergency responders, (iv) a Battery Management

[80] *See B-28 Supervision of Stationary Energy Storage Systems*, New York City (last accessed Aug. 16, 2024), https://www.nyc.gov/site/fdny/business/all-certifications/cof-b28.page.

[81] Note that the IFSWG was convened by Governor Hochul to develop recommendations for New York State Fire Prevention and Building Code Council adoption. The Code Council, as it is so called, consists of 17 members, all of whom are appointed by the Governor. *See Fire Code Recommendations*, New York State Interagency Fire Safety Working Group (July 2024), https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Energy-Storage/Fire-Code-Recommendations-Report.pdf.

System incorporating high resolution data and measurements, monitored by a 24/7 *staffed* Network Operation Center, (v) video surveillance systems, (vii) central station alarm and monitoring systems, (viii) incorporating fire stops, barriers or breaks, (ix) and annual first responder training. Many of the recommendations support the need for greater than the zero full-time equivalent employees proposed by the Consultants and Staff.

Moreover, the Final Interim Report does not account for asset management and energy management costs, instead relying on existing owner staff. This leads to the erroneous conclusion that no new hires are needed to operate any BESS, regardless of the plant's capacity or the number of plants in a fleet. Such assumptions incorrectly presume project-level expenses are corporate expenses, thereby artificially inflating project-level returns.

The Final Interim Report's staffing assumptions must be corrected to ensure 24/7 operational control, capable of responding to verbal dispatch instructions, complying with FDNY requirements, and addressing other critical operational, maintenance, and compliance tasks. The Final Report must also include allocations for asset management and energy management costs, rather than improperly removing these costs from the project level and artificially inflating project-level returns.

III. The Approach Utilized To Annually Update Gross CONE Must More Accurately Track Year to Year Changes Within a Reset Period.

To date, the various escalation factors formulas that have been deployed for this process have produced significant shortfalls over the reset period. As reflected in the August Presentations, both the Consultants and NYISO Staff continue to review the weighting factors and indices to be used to adjust the Gross CONE of the proxy unit in each Locality annually. Some adjustment must be made to account for these shortfalls.

Since the inception of the ICAP Demand Curve mechanism, focus has been placed on

adjusting the price points in the years within a reset period. The purpose has been two-fold, particularly as the reset period was extended to four years: i) provide adequate and accurate price signals to support investment in all years; and ii) limit the volatility between the last year of one reset period and the first year of the next reset period.

There have been numerous iterations of annual update methodologies used in the past, before coming to the current one. However, the current methodology has, once again, grossly underestimated cost increases since the first reference prices were set in the current DCRP, as shown in the price difference between the current reference prices based on the SCGT, and the estimated costs for an SCGT in the Interim Final Report.

Reference Prices for SCGT	Central	Zone G	Zone J	Zone K
Current Year (2024-2025	$7.41	$9.96	$19.84	$11.29
Proposed (2025-2026) Summer	$24.14	$27.31	$37.01	$70.04

This shortfall raises major concerns. First, by its nature, the shortfall is additive. Insufficient escalation factors will cause the Year 2 prices to be too low. The insufficient escalation factors applied to the prices in Year 2 will then cause Year 3 to start at a point that is too low. The gap will grow farther when the insufficient escalation factors are then applied to that artificially low figure to set the Demand Curve prices for Year 3. The same pattern will repeat in Year 4.

Second, some continued volatility in electric infrastructure pricing is expected. For

example, the cost of lithium as materials must be weighted correctly given the volatility of the market due to regulatory uncertainty involving the adoption of lithium dependent end use electrification products such as electric vehicles.

Relatedly, at the July 23rd ICAP meeting, 1898 reported that they had updated their BESS equipment cost assumptions to capture an expected reduction in lithium carbonate prices to account for a dynamic they identified where BESS equipment pricing trends lag raw material trends by approximately 3-6 months.[82] At the August 8th ICAP meeting, AG proposed using the BLS Producer Price Index for Commodities, Not Seasonally Adjusted, Machinery and Equipment (11), Storage Batteries (7901) for the equipment component of the annual inflation updates for Storage Battery Costs.[83] However, this proposed index does not reflect the price declines that 1898 & Co. already has incorporated. The effects of this trend must not be double counted. If 1898 & CO. is correct about the lagged impact, the NYISO must not start with 1898 & Co.'s reduced BESS cost (which already incorporated the projected decline) and update it a year from now using an inflation adjustment value that again includes the effect of the same lagged price decline. Thus, at a minimum, NYISO Staff must include a variable in its formula to account for this effect should 1898 & Co.'s recommended lag treatment and this PPI Index remain part of its Final Recommendations.

IPPNY remains committed to providing input on the reform of this process to decrease volatility between reset periods and produce adequate price signals to support investment in all years. In the absence of defining an approach for annual updates to the Gross CONE of the proxy

[82] *NYISO 2025-2029 ICAP Demand Curve Reset (DCR)*, 1898 & Co. (July 23, 2024), at 3, https://www.nyiso.com/documents/20142/45958275/2025-2029%20DCR%20-%20BMcD%20Presentation%2007232024%20ICAPWG.pdf/0bc0c3b6-077f-8df4-8dec-2b473cdcdf10.

[83] August 1 AG Presentation at 15.

unit in each Locality that will yield more accurate results with some certainty, NYISO Staff must incorporate the risk of ongoing shortfalls year after year by increasing the financial parameters.

IV. Conclusion

NYISO Staff must drop the 2-hour BESS from consideration as a proxy unit in the 2025-2029 DCR because it does not meet the Services Tariff requirements. Should the NYISO nevertheless proceed with the selection of the 2-hour BESS as the proxy unit in all localities, its Net CONE must be set accurately in each Locality. To do so, NYISO Staff must modify its recommendations as established herein. As the NYISO continues to consider the matters raised herein to develop the final report, IPPNY remains available to provide further information or clarification, and is committed to engaging its members to support such efforts. Thank you for your ongoing consideration of these issues.

Respectfully submitted,

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