

September 29, 2023

VIA ELECTRONIC MAIL

Honorable Michelle L. Phillips
Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, New York 12223-1350

RE: Case 18-E-0130 – In the Matter of Energy Storage Deployment

Case 16-M-0411 – In the Matter of Distributed System Implementation Plans

**NATIONAL GRID EAST PULASKI ENERGY STORAGE SYSTEM
WHOLESALE MARKET PARTICIPATION ANNUAL REPORT**

Dear Secretary Phillips:

Pursuant to Ordering Clause No. 2 of the Public Service Commission's September 9, 2021 *Order Approving Utility-Owned Asset Participation in Wholesale Markets* in the subject proceedings (the "Order"),¹ Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid") hereby submits its first annual report for filing in the subject proceeding.

Please direct any questions regarding this filing to:

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¹ The Secretary subsequently granted to National Grid filing extensions for the initial annual report on December 14, 2022 and June 15, 2023. The second filing extension established a filing date of September 29, 2023 for the first annual report. Subsequent annual reports as required by the Order will be filed on the one-year anniversary of the first annual report filing.

Hon. Michelle L. Phillips, Secretary
Cases 18-E-0130 and 16-M-0411 – National Grid’s East Pulaski Energy Storage System
Wholesale Market Participation Annual Report
September 29, 2023
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Thank you.

Respectfully submitted,

/s/ Janet M. Audunson

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Enc.

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**East Pulaski
Energy Storage System
Wholesale Market Participation
Annual Report**

Cases 18-E-0130
and 16-M-0411

September 29, 2023

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Executive Summary

The East Pulaski Energy Storage System Project (the “East Pulaski ESS” or “ESS Project”) is owned by Niagara Mohawk Power Corporation d/b/a National Grid (“National Grid” or the “Company”) and installed at the Company’s East Pulaski Substation in the Village of Pulaski. The Company aims to have this 2-megawatt (“MW”) and 3 megawatt-hour (“MWh”) ESS Project participate in wholesale markets.

National Grid filed a petition with the New York Public Service Commission (“Commission”) and was subsequently granted Commission approval to allow the Company to dispatch and market the output from the East Pulaski ESS into the New York Independent System Operator (“NYISO”) wholesale markets. The East Pulaski ESS was originally developed to provide local reliability support but will provide increased value to the benefit of customers through earnings from market participation during those times of year when the ESS Project is not needed for local reliability support. The Company will also gain an understanding of the mechanisms of market participation ahead of the development of other energy storage projects.

The East Pulaski ESS and its supporting systems had to be modified for market participation since it had been commissioned and interconnected to the Company’s distribution system in 2018 to relieve local thermal loading constraints. This annual report focuses on the Company’s preparation for market participation.

This report covers the following focus areas in preparation for market participation:

- Power Marketer
- Coordination with NYISO
- Regulatory Requirements
- Treatment of Wholesale Revenues and Costs
- Information and Operational Technology
- Technical Challenges
- Testing

As of the date of this report the ESS Project is not yet operating in the NYISO Energy Storage Resource (“ESR”) market due to some remaining technical challenges as detailed in this report.

National Grid plans to file its next annual report in September 2024 with a focus on its experiences with bidding the East Pulaski ESS into the wholesale market. In addition, the Company will host a stakeholder information session by March 29, 2024 to address the full gamut of lessons learned on its way to successfully bidding the ESS into the NYISO markets.

Introduction

The East Pulaski ESS Project is advancing toward readiness for participation in the NYSISO wholesale markets. The ESS Project was originally developed to provide local reliability support, but National Grid has since added wholesale market participation as a use case for this ESS. This will allow the Company to use the ESS to provide increased value for the benefit of its customers while also gaining an understanding of the mechanisms of market participation ahead of other energy storage projects.

Background

The Commission's March 9, 2017 *Order on Distributed System Implementation Plan Filings*, directed that "no later than December 31, 2018, each individual utility must have energy storage projects deployed and operating at no fewer than two separate distribution substations or feeders" that "should strive to perform at least two types of grid functions with the deployed energy storage resources (e.g., increasing hosting capacity and peak load reduction)."¹ Accordingly, National Grid developed and placed in service an ESS in 2018 within the existing footprint of the Company's East Pulaski Substation to provide peak load reduction to mitigate thermal overload of the substation's 115-13.2 kV transformer during normal peak system conditions. The ESS is located in the Village of Pulaski in Oswego County. The East Pulaski ESS Project is shown Figure 1 and its technical specifications are provided in Table 1.

Figure 1. East Pulaski ESS



Table 1. ESS Technical Specifications

Specification	Value
<u>Maximum Rated Discharge / Charge Output</u>	2 MW / 2MW
<u>Guaranteed End of Life Capacity</u>	3 MWh
<u>Commercial Operation Date</u>	December 2018
<u>Energy Storage Technology</u>	Lithium-Ion Nickel Manganese Cobalt
<u>Energy Storage Manufacturer</u>	Samsung

¹ Cases 16-M-0411 *et al.*, *In the Matter of Distributed System Implementation Plans* ("DSIP Proceeding"), Order on Distributed System Implementation Plan Filings (issued March 9, 2017) ("2017 DSIP Order"), p. 30.

National Grid also installed a second 2 MW and 3 MWh ESS at the Company's North Troy Substation also for peak load reduction to mitigate thermal overload conditions. The North Troy ESS is currently undergoing final commissioning and testing.

Since 2018, the East Pulaski ESS has successfully provided load during several normal peak system conditions. This reliability support to date has only been required during the summer peak months (i.e., June through September) leaving the ESS in standby mode for the rest of the year. To maximize the value of the ESS Project and to utilize the ESS when it would otherwise be sitting idle, National Grid filed a petition with the Commission to allow the Company to dispatch and market the output from the East Pulaski ESS into the NYISO wholesale markets.² The Commission subsequently approved National Grid's request in its September 9, 2021 *Order Approving Utility-Owned Asset Participation in Wholesale Markets*.³ In addition, the Commission required that the Company hold a stakeholder information session to share valuable experience gained as well as file annual reports regarding the dispatching of the Project.⁴ The Company plans to host a stakeholder information session to address the full gamut of lessons learned on its way to successfully bid the ESS into the NYISO markets. This report is the Company's first annual report, and its next annual report will be filed in September 2024.

To unlock this wholesale participation capability while maintaining thermal overload mitigation capability, several site modifications, processes, and contracting had to be developed, enabling the ability to leverage the ESS Project in different use cases, a first for the Company. This site will be among the first ESS projects in the state to bid into the new NYISO ESR market.

This report focuses on National Grid's experience, lessons learned, and next steps in developing this new capability. This report is intended to provide useful information to other entities in the energy storage industry to maximize the value of ESS in the state, in support of achieving New York State's clean energy goals.

² DSIP Proceeding, Petition of Niagara Mohawk Power Corporation d/b/a National Grid for Approval to Dispatch and Wholesale Market the Output from a Utility-Owned Energy Storage System Project (filed January 12, 2021).

³ DSIP Proceeding, Order Approving Utility-Owned Asset Participation in Wholesale Markets (issued September 9, 2021) ("Order").

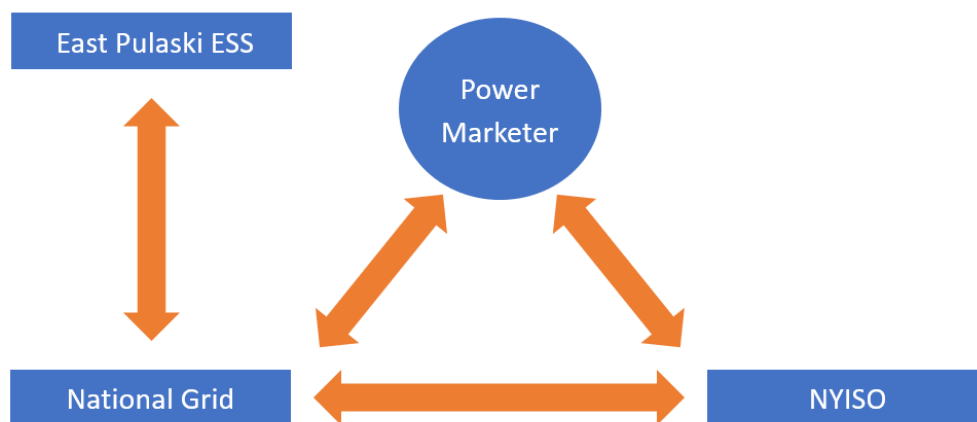
⁴ *Id.*, p. 14.

Market Participation Planning

As the East Pulaski ESS was commissioned and interconnected to National Grid’s distribution system in 2018, the Company needed to modify the existing ESS to prepare for wholesale market participation. This section provides an overview of the Company’s preparation approach for the power marketer, coordination with NYISO, regulatory requirements, treatment of wholesale revenues and costs, information and operational technology, technical challenges, and testing.

Figure 2 shows the parties involved and general information pathways used to date for ESS wholesale market participation between the East Pulaski ESS, National Grid Control Center Operator (“CCO”), the third-party power marketer and the NYISO.

Figure 2. Project Information Pathways



Power Marketer

National Grid is currently a Load Serving Entity (“LSE”) only, it has limited internal experience in bidding generation, especially energy storage projects, into the NYISO markets. As such, the Company contracted with Customized Energy Solutions Ltd., a third-party power marketer (“Power Marketer”), with experience in bidding other energy storage projects into wholesale markets. The Power Marketer will be responsible for conducting all the bidding of the East Pulaski ESS on behalf of the Company while ensuring the ESS warranty is maintained and the ESS remains available to meet its primary mission of providing thermal load relief. Furthermore, the Power Marketer is responsible for recommending bidding strategies and providing monthly updates to National Grid.

For the Power Marketer to be able to operate Company-owned or contracted assets in energy markets, a legal framework needed to be established with the Power Marketer (i.e., a Power Marketer Agreement). To achieve this, the Power Marketer offered their existing power marketing framework agreement for National Grid’s review.

In drafting the Power Marketer Agreement between National Grid and Customized Energy Solutions Ltd. it was important to clearly identify roles and responsibilities of the Company and the Power Marketer. This included clear communication protocols, information technology architectures, and security

requirements to protect the Company's systems and information. Beyond that, the Power Marketer Agreement also established protocols and procedures to balance the number one priority of reliability (i.e., peak load reduction to mitigate thermal overload conditions) with the bidding of the ESS into wholesale markets. The Power Marketer Agreement also incorporated penalty provisions whereby the Power Marketer would be penalized for purposeful action that would interfere with the ESS not being available to provide reliability services to National Grid customers.

During the contracting process, the Company and the Power Marketer worked in conjunction to include a requirement for a series of workshops in the contract. These workshops will be used to educate National Grid's staff on how best to bid Company-owned or contracted energy storage assets into various energy markets as the Distributed System Platform provider.

Coordination with NYISO

National Grid initiated the Limited Energy Storage Resource ("LESR") market participation registration process for its East Pulaski ESS in April 2020. During the registration process, the Company pivoted to NYISO's Energy Storage Resource ("ESR") participation model when it became effective as approved by the Federal Energy Regulatory Commission ("FERC") in August 2020. This participation model reflects changes to the NYISO's registration process and modeling to better reflect the capabilities of the ESS and expands the market products that the ESS could offer to the wholesale market such as day-ahead, real time energy, and ancillary services.

National Grid also subsequently transitioned the role of Market Participant to its Power Marketer when it confirmed that the Power Marketer would be the most suitable entity to be the responsible Market Participant and not the Company. One reason for this decision was to ensure the Power Marketer had the appropriate access to the NYISO resource data to efficiently facilitate market participation. These transitions, along with the clarifications needed on the newer ESR participation model, led to a longer lead time to finalize the NYISO registration process for the ESS.

Discussions during the registration process involved clarification of facility ownership, site control, financially responsible party, energy storage attributes, utility interconnection study, and metering requirements. There were additional metering requirements based on the ESR participation model, specifically around separation of metering for energy injections and withdrawals from other auxiliary load consumption at the facility. National Grid also needed to confirm consent with the NYISO for its Power Marketer to have access to the real-time telemetry exchanged between the Company and NYISO, limited to telemetry data related to the operation and status of the ESS Project.

Regulatory Requirements

The Company conducted an assessment of FERC regulations and orders applicable to market participation, including FERC's Standards of Conduct and its Affiliate Restrictions therein to ensure full regulatory compliance ahead of market participation. The key findings of this assessment are provided below where National Grid concluded that bidding the East Pulaski ESS in the NYISO wholesale market as planned would not violate any FERC rules.

The Company additionally analyzed relevant FERC regulations and orders applicable to market participation and identified the need to comply with FERC's market-based rate authority. National Grid's analysis revealed the need to make a filing with FERC to ensure the Company possessed the requisite authority under its market-based rate tariff to engage in wholesale ancillary markets. It was also determined that once the East Pulaski ESS commenced market operations, the Company would need to include the asset in its relational database required by FERC Order No. 860, and in its market-based rate authority compliance program, ensuring its inclusion in National Grid's next triennial market power update or a notice of change in status, as appropriate.

The Company also determined that market participation by the East Pulaski ESS did not run afoul of FERC's Standards of Conduct or its Affiliate Restrictions. FERC's Standards of Conduct rules govern the relationship between transmission function employees of FERC regulated transmission providers and employees engaged in marketing activities, and mandate that such employees function independently. Additionally, non-public transmission function information must not be disclosed to marketing personnel. National Grid determined that no transmission function information would be disclosed in connection with market participation of the East Pulaski ESS. Other than its participation in the NYISO markets, the East Pulaski ESS will only be used to address reliability issues on the Company's local distribution system and would not be used to address reliability situations involving FERC-jurisdictional transmission facilities. As such, while those responsible for market bidding activity might be privy to information regarding the local distribution system, those personnel will not receive any non-public information relating to FERC-jurisdictional transmission facilities.

Regarding FERC's Affiliate Restrictions, as a condition of granting market-based rate authority, FERC imposes certain restrictions with respect to interactions between franchised public utilities with captive customers and market-regulated power sales affiliates, including those relating to separation of functions and information sharing. Under these regulations, market-regulated power sales affiliates are affiliates that make sales at market-based rates but are not franchised public utilities. It was determined that these Affiliate Restrictions would not prevent National Grid from engaging in market activities for the East Pulaski ESS. The underlying rationale for FERC adopting the Affiliate Restrictions is to prevent utilities from inappropriately subsidizing market-regulated affiliates at the expense of captive customers of franchised public utilities. This concern would not apply because the East Pulaski ESS is Company-owned and does not meet the definition of a market-regulated power sales affiliate. Additionally, having the East Pulaski ESS engage in market activities would not result in any combining of functions or sharing of information with any market-regulated power sales affiliate of the Company, and no such affiliate would stand to benefit at the expense of customers of the franchised public utility.

Treatment of Wholesale Revenues & Costs

As a part of its petition to the Commission, National Grid stated its plans to return any revenues that exceed costs, or net revenues, associated with wholesale dispatch and marketing of the facility to customers through the Company's Legacy Transition Charge ("LTC") mechanism. The Commission adopted the Company's proposal to use the LTC mechanism to return net revenues to all delivery customers. In compliance with the Order, the Company filed revisions to Rule 46.2, entitled LTC, reflecting this cost recovery on October 22, 2021, effective November 1, 2021.

The Power Marketer will provide a monthly file detailing the payment and revenues. The Company's Accounting teams will then create an invoice and provide it to the Power Marketer for the remittance of payment. The Company will allocate 100 percent of the net revenues from the dispatch and wholesale marketing of the East Pulaski ESS Project to National Grid's customers through the LTC. The LTC is included in the Company's monthly Electric Supply Statement filed with the Commission.

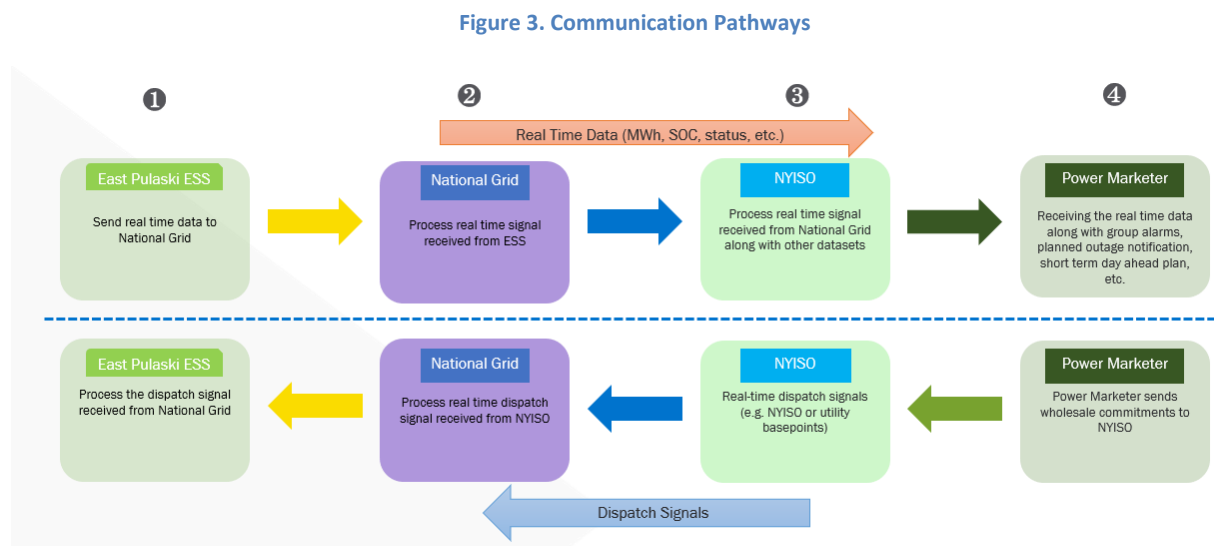
The Company plans to incorporate the NYISO revenue into its benefit-cost analysis ("BCA") models and tools. This calculation will be developed using actuals from the ESS Project to inform the approach to project revenue opportunities for other energy storage projects.

Information and Operational Technology

The ESS Project included the development of a streamlined communication architecture between the East Pulaski ESS, National Grid, the Power Marketer and NYISO. The Company developed a high-level protocol for communication, coordination, and data needs requirements between National Grid and the Power Marketer to manage planning and the real-time operation of the ESS Project.

The Company will leverage existing communication pathways between the Power Marketer and NYISO to capture monitored ESS values, and between the Company and NYISO for the transmission of the NYISO base points for automated ESS dispatch. For all communication needs between National Grid and the Power Marketer, email and phone calls have been deemed sufficient. This will include an automated email notification triggered by the Company's forecasting software of a potential day-ahead reliability need to ensure that the Power Marketer can prepare the ESS State of Charge ("SOC") accordingly.

The communication pathways for the ESS Project are shown below in Figure 3.



Additionally, Appendix A details specific information and data with their planned communication pathway between the East Pulaski ESS, National Grid, NYISO, and the Power Marketer needed for NYISO market participation.

Technical Implementation Challenges

The ESS Project faced technical challenges both unrelated and related to the preparations to bid the ESS in the NYISO wholesale markets that have resulted in unforeseen delays.

National Grid encountered unavailability challenges caused by inverter equipment failure, heating ventilation and air conditioning (“HVAC”) malfunctions, needed cybersecurity changes resulting in battery portal access for both the Company and the ESS Operations and Maintenance (“O&M”) provider, and loss of communications due to a communication port failure. An issue with the Battery Management System (“BMS”) that manages the battery SOC was identified, whereby it would let the SOC drop below a minimum operational threshold resulting in a battery shut down. The Company, working closely with the ESS O&M provider, identified and sourced replacement parts needed to replace faulty equipment to resolve the HVAC and inverter issues. Cybersecurity changes were remedied through the Company’s IT team. An SOC management algorithm was implemented.

The site upgrades needed for market participation in some cases contributed to unforeseen technical troubleshooting. Site upgrades included:

- Additional metering to meet the NYISO ESR market metering requirements to separate the station auxiliary load from the charging and discharging of the ESS;
- Changes to the Company’s Energy Management System (“EMS”) to facilitate the two different modes of operation (thermal load mitigation and NYISO market operation) and connect the ESS to the NYISO basepoint;
- Data conversion to resolve basepoints unit discrepancy as National Grid’s EMS reads in Kilo values, yet the NYISO transmits in Mega values. The change had to be made at the East Pulaski ESS to not skew the values seen by National Grid; and
- Changes/additions to the Company’s billing and settlement systems.

Testing

Prior to bidding in the wholesale market, an ESR participant must complete a NYISO End to End (“E2E”) test as a part of the onboarding process to validate that the ESS responds to tested basepoint dispatch signals within the specified time and with a specified accuracy. Upon completion of this test the NYISO evaluates the results and determines if any changes are required, or if the facility is ready to begin bidding in the market.

National Grid has completed one NYISO E2E test for the East Pulaski ESS and identified issues in preparation for the testing. As such, at the time of this report the ESS is not yet bidding in the NYISO ESR market.

A summary of the challenges identified in preparation for and through the NYISO E2E test are included in Table 2 below.

Table 2. Technical Challenges Overview

Date Identified	Challenge	Status	Conclusion/Next Steps
May 2023	Real Time Automation Controller (“RTAC”) formatting not compatible with market requirements	Resolved	National Grid made needed change but indirectly impacted data translation, requiring new software patch
August 2023	Delayed delivery of the basepoint and dispatch from National Grid’s control room to the storage facility	In Progress	Modifying interval to be within 6 second requirement
August 2023	Misalignment between point of interconnection and dispatch	In Progress	National Grid is working with NYISO to inform potential solutions and next steps

Operations Plan

The ESS Project will be operated as any other resource that is participating in the NYISO wholesale market. The operating plan will be bid by the Power Marketer into the day-ahead wholesale market. The results of the awarded bids will be available to National Grid via the Day Ahead Market Generator (“DAMGEN”) which is provided by the NYISO. During normal operations, the ESS will follow the basepoints provided by the NYISO through the Company’s EMS to both discharge and charge. Except for the involvement of the Power Marketer, this is the same process and systems in use today to dispatch generation on the Company’s system.

The Power Marketer will be notified of any off-normal operations that make the ESS unavailable or at a reduced capacity. The Power Marketer will then ensure the wholesale market bids reflect the capabilities of the ESS if sufficient time permits or National Grid will follow the NYISO processes for taking the unit Out of Merit (“OOM”) as necessary.

For local reliability needs that can be anticipated prior to the day-ahead market bid cutoff, the Company will work with the Power Marketer to bid the required charge or discharge as needed to secure the ESS. For emergent local reliability issues, the Company will follow the OOM, Day-Ahead Reliability Units (“DARU”), or Supplemental Resource Evaluation (“SRE”) as necessary based on the timing.

Modifications were also made to an existing Standard Operation Procedure (“SOP”) document used to operate the ESS. Changes were made to capture this new capability and the associated possible scenarios and actions to be taken by National Grid’s CCO staff.

The processes and coordination between the Company and the NYISO are already in use by National Grid to address local reliability issues on the transmission system. The Company will continue to work within these processes and with its Power Marketer.

Lessons Learned

In preparing its East Pulaski ESS for market participation National Grid has documented lessons learned to date. Table 3 below consolidates key lessons learned and best practices identified to date. In subsequent annual reports, the Company will expand upon this table based on continued experience of market participation.

Table 3. Market Participation Lessons Learned

#	Category	Situation	Lesson Learned
1	NYISO Coordination	The Company had no experience in market participation or the applicability of NYISO rules to a utility.	Early engagement with the NYISO should be a priority to ensure project success and work through problems with the help of NYISO.
2	NYISO Coordination	Direct communication pathway from ESS to Power Marketer was needed.	Confirmed with NYISO and with the Company's approval, NYISO to share monitored values with Power Marketer. This eliminated the need to create a direct communication pathway from the ESS to the Power Marketer by utilizing a pathway that already existed.
3	NYISO Coordination	The Company's NYISO account is designated as LSE, but ESS Project requires Seller designation account for Market Participant.	Registered East Pulaski ESS with Power Marketer account as Market Participant and set up account transfer.
4	NYISO Coordination	A new meter was required to be installed at East Pulaski ESS to comply with NYISO requirements.	Encountered issue of not being able to install a third meter due to battery structure; reached agreement with NYISO to use two meters and deduct one meter from the other meter.
5	Power Marketer Procurement	Need for a Power Marketer to support multiple ESS projects within the Company	Generalize Power Marketer contract across more than one ESS opportunity to find efficiencies in costs and learnings.
6	Revenue Allocation / Cost Recovery	Key requirement for Commission approval to bid the ESS project in the wholesale market was requirement that 100% of net revenues go back to all delivery customers.	Worked with National Grid's Electric Pricing team to create a tariff change to provide a pathway to meet requirement for allocating net revenues back to customers through the LTC surcharge.
7	Technical Challenges	Retrofitting an existing ESS was complex and required attention to detail and modification.	Built to suit applications should consider all NYISO requirements during development to avoid retrofitting at a later date.
8	NYISO E2E Testing	Several tests were conducted with NYISO that identified issues that could have perhaps been identified without NYISO participation.	Test all communications pathways and ESS dispatching for all pathways that do not require NYISO to send basepoint signal ahead of the NYISO E2E tests.
9	Market Participation	Originally planned to use LESR model but pivoted to ESR	Shift from LESR to ESR participation model requires some changes to NYISO EMS modeling and registration forms.

Appendix A – Data Requirements and Communication Pathways

Table 4 provides a comprehensive summary of the data requirements and communication pathways the Company has planned for in preparation for market participation. The direction of the communication pathway indicates whether it is one way (“>”) or bi-directional (“<>”). National Grid plans to review and revise this table should there be any additions or revisions once participating the ESS.

Table 4. Data Requirements and Communication Pathways

Information / Data	Frequency	Auto / Manual	Communication Pathway						
			Originator	Direction	Stakeholder	Direction	Stakeholder	Direction	Stakeholder
Status and measurements of East Pulaski ESS i.e., MW, SOC, etc.	Real time	Auto	National Grid	>	NYISO	>	Power Marketer		
NYISO dispatch signals (e.g., basepoints) for normal operation	Real time	Auto	NYISO	>	National Grid				
			NYISO	>	Power Marketer				
Battery Alarms (including individual and grouped alarms)	Real time	Auto & Manual	East Pulaski ESS	>	National Grid	>	Power Marketer		
Operating limits of East Pulaski ESS affecting warranty and/or operations	Annual	Manual	East Pulaski ESS	>	National Grid	>	Power Marketer		
Day Ahead Operating Plan	Daily	Auto	National Grid	>	Power Marketer				
Short-term Day Ahead Operating Planning for operational consideration	2 days ahead of dispatch day	Auto	National Grid	>	Power Marketer				
Bidding and Clearing Data	Daily, hourly, etc.	Manual & Auto	Power Marketer	<>	NYISO				
Unplanned outage notification (i.e., full or partial de-rate) of East Pulaski ESS	As required	Manual	East Pulaski ESS	>	National Grid	>	NYISO	>	Power Marketer
Communication failure between East Pulaski ESS and National Grid	Real time	Manual	East Pulaski ESS	<>	National Grid	<>	NYISO		
			National Grid	>	Power Marketer				
Unplanned outage notification for a National Grid asset that causes battery to disconnect	As soon as practically possible	Manual	National Grid	>	NYISO				
			National Grid	>	East Pulaski ESS				
			National Grid	>	Power Marketer				

Information / Data	Frequency	Auto / Manual	Communication Pathway						
			Originator	Direction	Stakeholder	Direction	Stakeholder	Direction	Stakeholder
ESS Emergency Event	Within 1 hour of the event	Manual	East Pulaski ESS	>	National Grid	>	NYISO		
			National Grid	>	Power Marketer				
Local Grid Constraint Event Notification (i.e., ESS to support reliability need)	Day of reliability event	Manual	National Grid	>	NYISO				
			National Grid	>	Power Marketer				
Intra Day Operating Plan (i.e., prepare ESS to potentially support reliability need)	Day ahead 5 AM through to real time	Manual	National Grid	<>	Power Marketer				
Battery Return to Service	Two days ahead prior to return to service for planned outage and 2 hours for unplanned	Manual	East Pulaski ESS	>	National Grid	>	Power Marketer	>	NYISO
Planned East Pulaski ESS Outage Notification	At least 5 business days prior to outage	Manual	East Pulaski ESS	>	National Grid	>	Power Marketer		
Planned outage notification for an National Grid asset that causes battery to disconnect	At least 5 business days prior to outage	Manual	National Grid	>	Power Marketer				
			National Grid	>	East Pulaski ESS				
NYISO Operational Questions	As required	Manual	NYISO	<>	National Grid	<>	Power Marketer		
NYISO Market Questions	As required	Manual	NYISO	<>	Power Marketer				
			NYISO	<>	National Grid				
			National Grid	<>	Power Marketer				
Annual Planning for reliability and maintenance	Yearly & Seasonally	Manual	National Grid	>	East Pulaski ESS				
Long-term Planning data for operational consideration	At least 2 months prior to start of annual operation	Manual	National Grid	>	Power Marketer				