



REV Demonstration Project:
Storage On Demand

2020 Q4 Quarterly Progress Report

Dated: February 1st, 2021

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1.0 EXECUTIVE SUMMARY

Consolidated Edison Company of New York, Inc. (“Con Edison” or the “Company”) submits this fourth quarterly report for 2020 on the progress of the Storage On Demand REV Demonstration Project (the “Project”) it is implementing as part of the Reforming the Energy Vision (“REV”) proceeding, as required by the *Order Adopting Regulatory Policy Framework and Implementation Plan*, issued by the New York State Public Service Commission (“Commission”) on February 26, 2015.¹ Budget information is being filed confidentially with the Commission.

1.1. Project Background

The Project is designed to demonstrate how mobile storage assets can increase their useful value to the distribution system under multiple use cases, such as transmission and distribution (“T&D”) deferral, low voltage support, and temporary load needs in multiple locations. The Project will also demonstrate the ability of storage to participate in and earn revenues from New York Independent System Operator (“NYISO”) wholesale markets. Con Edison is implementing the Project with NRG Energy (“NRG”).

Due to the impacts of COVID 19 and construction issues, the Project is now scheduled for system substantial completion in August 2021 and final completion in September 2021.

¹ Case 14-M-0101, *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, Order Adopting Regulatory Policy Framework and Implementation Plan (issued February 26, 2015).

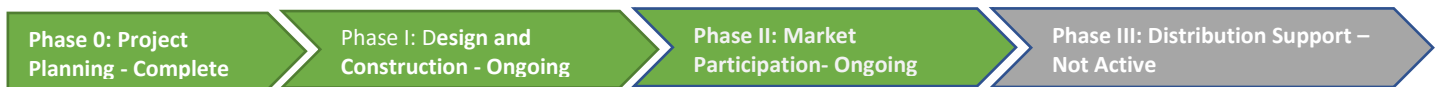
1.2. Project Overview



Storage on Demand REV Demo Project – Q3 2020

This Project partnership with NRG tests a technology solution and business model that provides the opportunity for two parties to utilize transportable batteries at a higher rate by sharing deployment of the batteries for different purposes at different times throughout the year. Hypotheses include: (i) MW-scale batteries may be valuable in generating revenues in New York Independent System Operator (“NYISO”) wholesale markets; (ii) mobile/deployable MW-scale batteries may be valuable in enabling utility transmission and distribution deferrals and in utility contingency response; and (iii) mobile units can be capable of deployment within emergency operational timeframes.

Project Start: 1/1/2017
Project End: 12/31/2021
Status: Active
Budget: \$10.4 M
Q4 2020 Spend: Filed Confidentially
Cumulative Spend: Filed confidentially (on budget)



Lessons learned:

- *Contracting for a unique business model is complex and requires significant time to develop*

Application of lessons learned: N/A

Issues Identified:

- *Fire Department New York (“FDNY”) permitting and requirements impact project timeline, system design and budget*
- *NYISO market participation rules are currently evolving and uncertain for this first-of-its-kind mobile asset*

Solutions Identified:

- *A specialized analysis is required when it comes to battery design that meets FDNY and New York City Department of Transportation (“DOT”)*
- *The Company will continue to work with the FDNY to develop standard permitting requirements to minimize ambiguity*
- *Regular engagement with the NYISO on market rule impact on customer and utility projects partially addresses the impact of evolving market rules*

Recent Milestones/Targets Met:

- *The EPC Agreement contract was finalized*
- *Received the Letter of No Objection (“LONO”) from the FDNY; LONO requirements have been clarified with FDNY and equipment designs have been updated based on the requirements*

- *The Project team submitted the system impact study and submitted with NYISO, a key milestone in achieving Energy Resource Interconnection Service (“ERIS”), a results meeting was held and requested Interconnection Agreement (“IA”)*
- *The engineering of the units advanced, including Single Line Diagram updates, design of the fire protection and the enclosure for FDNY and DOT submittals*
- *Manufacturing process and shipment of the batteries began, inverter and transformer for trailer fabrication started*
- *The docking station construction commenced after delays due to COVID 19*

Upcoming Milestones/Targets:

- *In Q4, the team expects to complete the Small Generator Interconnection Agreement (“SGIA”) process for the battery containers with the NYISO*
- *Continue the manufacturing of the units*

2.0 QUARTERLY PROGRESS

2.1 Activities Overview and Updates

Phase 1, Design and Construction: The construction start date of the docking station in the Astoria Plant was delayed due to the COVID-19 pandemic in New York state. In Q4, construction was placed on hold due to design issues of the docking station. Engineering of the battery units progressed to 80% of completion.

Phase 3, Market Participation: In Q4, Con Edison Distribution and the NYISO discussed including specific technical capabilities in the IA.

2.2 Key Metrics

Con Edison will begin reporting metrics of key outcomes after Q4 2021.

2.3 Lessons Learned and Recommendations

Compliance with DOT and FDNY requirements continued to be a substantial component of the engineering design process.

3.0 NEXT QUARTER FORECAST

3.1 Planned Activities

In Q1 2021, the Project team will resume construction of the docking station and NRG will continue to manufacture the mobile units. The Project team will submit the final fire suppression drawings to FDNY based on the conditions included in the LONO, as well as the emergency response plan for the assets when deployed. The Project team will also continue conversations with NYISO to obtain the final IA for initial synchronization before the estimated Commercial Operations Date (“COD”).

4.0 APPENDICES

The following appendices are included at the end of this Quarterly Progress Report:

Appendix A: Description of Phases

Appendix B: Work Plan

Appendix C: Checkpoints and Milestone Progress

Appendix D: Procedures and Policies

Appendix A: Storage On Demand Description of Phases

Phase	0. Demonstration Planning (Complete)	1. Design and Construction (In progress)	2. Market Participation	3. Distribution support
Milestone (Stage Gate to Next Phase)	<i>Negotiations to be Completed</i> <ul style="list-style-type: none"> • DPS approval • Partner contracts signed • OTCR approval 	<i>Construct and Commission 1.5 MW/ 4 MWh mobile storage</i> <ul style="list-style-type: none"> • Commissioning 	<i>Participation in Wholesale Market</i> <ul style="list-style-type: none"> • Earn wholesale market revenues 	<i>Dispatch for load relief</i> <ul style="list-style-type: none"> • Support summer peak distribution needs • Respond to emergency need
Key Elements	<ul style="list-style-type: none"> • Letter of No Objection • Subcontractors identified and engaged to begin Phase 1 	<ul style="list-style-type: none"> • Detailed engineering • Equipment procurement • Trailer fabrication • Docking Station construction • Cyber-secure communication architecture 	<ul style="list-style-type: none"> • Complete interconnection application and all relevant NYISO participation studies • Enroll assets in all available market products • Earn revenues from wholesale markets 	<ul style="list-style-type: none"> • Assets are deployed to address known distribution peak need • Assets respond to emergency distribution need • Wholesale market participation while deployed
DER Categories	N/A	<ul style="list-style-type: none"> • Mobile battery storage 	<ul style="list-style-type: none"> • Mobile battery storage • DER aggregation 	<ul style="list-style-type: none"> • Mobile battery storage • DER aggregation

Appendix B: Work Plan

Act no	Activity Description	Lead	2017				2018				2019				2020				2021			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Phase 0: Demonstration Planning	ConEdison																				
1.1	Obtain Commission Approval	ConEdison																				
1.2	Limited Notice to Proceed	ConEdison																				
1.2.1	Design Basis and Permitting Engineering	NRG																				
1.2.2	Permitting	NRG																				
1.2.2.1	FDNY Letter of No Objection Process	NRG																				
1.2.2.2	DOB Permit Process	NRG																				
1.3	Negotiate NRG Contract	ConEdison																				
1.4	Negotiate O&M Agreement	ConEdison																				
2	Phase 1: Project Execution	NRG																				
2.1	Detailed Engineering	NRG																				
2.2	Equipment Procurement	NRG																				
2.3	Trailer Fabrication	NRG																				
2.4	Docking Station Construction	NRG																				
2.5	Commissioning	NRG																				
3	Phase 2: Wholesale Market Participation	NRG																				
3.1	Enroll Batteries in NYISO Markets																					
3.2	Frequency Response Participation	NRG																				
3.3	Energy Market Participation	NRG																				
4	Phase 3: ConEdison Deployment	ConEdison																				
4.1	Deploy Mobile Solution	ConEdison																				
4.2	Distribution Deferral Deployment	ConEdison																				
4.3	Wholesale Market Participation	ConEdison																				

Appendix C: Checkpoints and Milestone Progress

Checkpoint/Milestone	Timing*	Status
Storage On Demand Design	Phase 0 End/ Phase 1 Midpoint	
Commercial Operation Date	Phase 1 End	
Market Participation	Phase 1 End/ Phase 2 Midpoint	
Distribution Support	Phase 3 Start	
Emergency Response	Phase 3 Completion	

*Detailed descriptions of the Phases can be found in the Appendices.

Legend

On Schedule	Delayed w/out Major Impact	Delayed or Stopped – Project Goals Impacted
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1.1.1 Planned Activities

Storage On Demand Design

Status: Yellow

Expected Target by Phase 1 Midpoint: Obtain New York City Office of Technical Certification and Research (“OTCR”) approval; system design complete six months after approval.

Actual by Phase 1 Midpoint: OTCR is not required for the mobile units, FDNY will be the only approving entity for this project.

Solutions/strategies in case of results below expectations: The Project team will continually evaluate progress and engage the FDNY to incorporate any design changes required by these agencies necessary to achieve permitting.

Commercial Operations Date

Status: Yellow

Expected Target by Phase 1 End: 1.5 MW/4 MWh dispatchable energy storage.

Actual by Phase 1 Midpoint: Delays due to contracting and COVID-19 have pushed the in-service date to the end of Q2 2021.

Solutions/strategies in case of results below expectations: The Project team will continually evaluate the construction progress and develop a construction schedule mitigation plan, if necessary.

Market Participation

Status: Green

Expected Target by Phase 1 End: Enrollment in Applicable NYISO markets.

Actual by Phase 1 End: N/A

Solutions/strategies in case of results below expectations: Engage in discussions with NRG's commercial operations team. If market participation is denied, the Project team will apply for a NYISO Pilot Program for DER integration. If this participation is also rejected, NRG will dispatch assets to shadow the market and determine the potential realizable revenues.

Distribution Support

Status: Green

Expected Target by Phase 3 Start: Con Edison will finalize deployment locations and notify impacted communities.

Actual by Phase 3 Start: N/A

Solutions/strategies in case of results below expectations: Additional deployment of Storage On Demand units to create additional measurement points.

Emergency Response

Status: Green

Expected Target by Phase 3 End: The assets will be deployed to address a system contingency in an acceptable operational emergency timeframe.

Actual by Phase 3 End: N/A

Solutions/strategies in case of results below expectations: Continually evaluate deployment times and identify key drivers and root causes of lags in deployment.

CHANGES TO THE PROJECT DESIGN

There were no changes to the project design in Q3 2020.

WORK PLAN & BUDGET REVIEW

1.1.2 Phase Review

Phase Progress

The Project team has made progress on Phase 0 (Demonstration Planning), Phase 1 (Project Execution) and Phase 2 (Market Participation). The Project team finalized Phase 0 with contract execution in Q1 2020. The Project team continued Phase 1 activities in Q3 2020.

Appendix D: Procedures and Policies

CYBERSECURITY AND PERSONALLY-IDENTIFIABLE INFORMATION PROTECTION

Consistent with Commission policy related to cybersecurity and the protection of personally-identifiable information (“PII”), each partner agreement executed for the implementation of the Project includes specific protections related to cybersecurity and PII. This protection is critical in encouraging customers to sign up with new and innovative services offered by utilities.

ACCOUNTING PROCEDURE ESTABLISHED

On February 16, 2016, in Case 15-E-0229, Con Edison filed an accounting procedure for the accounting and recovery of all REV demonstration project costs.² This accounting procedure establishes a standardized framework that will govern how the Company categorizes and allocates the costs of the REV demonstration projects, and will facilitate analyzing each project to determine the overall financial benefits of the program to customers.

COSTS, BENEFITS, AND OPERATIONAL SAVINGS

Budget information for all of the Company’s REV demonstration projects is being filed confidentially with the Commission, concurrently with the filing of this document. All costs filed are incremental costs needed to implement the projects. To date, no tax credits or grants have been available to reduce the net costs of the projects, but Con Edison will take advantage of such offsetting benefits when, they are available. Due to the early stage of implementation for the Project, there are no operational savings to report at this time.

² Case 15-E-0299, *Petition of Consolidated Edison Company of New York, Inc. for Implementation of Projects and Programs that Support Reforming the Energy Vision*, General Accounting Procedure (issued February 16, 2016).