New York Energy Storage Initiative

REV Demonstration Project
Implementation Plan

Aggregated Behind the Meter Energy Storage

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Executive Summary

This Implementation Plan is submitted by New York State Gas & Electric Corporation ("NYSEG" or the "Company"), a subsidiary of AVANGRID, for the Aggregated Behind the Meter Energy Storage Demonstration Project ("Aggregated BTM ES Project"). This Implementation Plan is submitted in response to the letter from Colleen Gerwitz to Mark Marini issued on May 8, 2018, informing the Company that the Aggregated BTM ES Project complies with the objectives set forth in Order Clause 4 of the Commission's *Order Adopting Regulatory Policy Framework and Implementation Plan*, issued February 27, 2015, and that an Implementation Plan be filed with the Secretary within 30 days.

This Implementation Plan describes the project design, structure and governance, work plan, budget and reporting structure. The Implementation Plan will be a living document which may be updated as needed due to findings from test hypotheses, market analysis, and other discoveries as the project evolves.

The Aggregated Behind the Meter Energy Storage System Demonstration Project ("Aggregated BTM ES Project") will demonstrate some of the value streams that can be leveraged in parallel by behind –the-meter battery storage and attempt to identify new value streams that can be added. This pilot will also evaluate potential alternative rate designs and their impact on the value proposition of aggregated BTM battery storage. This project would be considered one of the two NYSEG energy storage projects meeting the requirements under Ordering Clause 5 of the March 9, 2017 Order is Case 16-M-0411.

The Aggregated BTM ES Project execution will be accomplished in three phases: (1) Customer Acquisition, (2) System Installation, and (3) Hypothesis Validation and Reporting. The Project is anticipated to take approximately forty-three months from project development to closeout which includes customer acquisition, site selection, construction, and commissioning of the battery systems as well as the validation and testing of the hypothesis, use case functionality and final analysis.

The Aggregated BTM ES Project will test the following hypotheses throughout the three project phases:

- If battery storage is placed behind-the-meter of commercial and industrial customers it can be used to reduce customer energy costs lowering customer bills.

- If commercial and industrial customer battery storage systems are aggregated as virtual power plants, multiple value streams in the NYSEG and New York Independent System Operator ("NYISO") demand response markets can be captured that would have not otherwise been captured individually.

- If commercial and industrial customer battery storage systems are aggregated as virtual power plants, distribution circuit and system peaks can be reduced.

- If behind-the-meter battery storage is to become a cost effective solution to help reduce customer energy usage and provide multiple stakeholder benefits, then data needs to be collected to evaluate and inform the hypothetical impact of alternative rates.

Section 1: Demonstration Design

The Aggregated Behind-the-Meter Energy Storage Demonstration Project ("Project") involves partnering with [redacted], [redacted] to install a mixture of small (~53 kW), medium (~159 kW), and large (~265 kW) battery installations for a range of commercial and industrial customers within the footprint of the Energy Smart Community ("ESC") located in Ithaca, NY. The advanced grid architecture in the ESC footprint allows NYSEG and its market partner to maximize the benefits that these advanced technologies offer. NYSEG aims to enroll and aggregate up to eight (8) customers in the battery storage offering, with a total capacity of approximately 1.060 MW and 4.2 MWh. NYSEG will also work with [redacted] to provide the software to aggregate and dispatch the installed batteries. The aggregation software will allow the batteries to participate in the NYISO Special Case Resources demand response ("DR") program and be dispatched by NYSEG to manage system constraints.

a. Test Statements

This project is designed to allow NYSEG to test the capabilities of aggregated behind-the-meter battery storage systems to address a variety of system needs as well as how best to encourage battery storage deployment in New York and the overall cost-effectiveness of behind-the-meter battery storage as a tool to address system needs.

The first hypotheses will focus on determining the effectiveness of behind-the-meter battery storage at creating bill-savings for commercial and industrial customers.

The second hypotheses is aimed at testing the ability of aggregation and the resulting virtual power plants to increase customer participation in NYISO and NYSEG DR markets as well as encourage battery storage adoption

The third hypotheses deals with using virtual power plants created through battery storage aggregation to reduce system and circuit level peaks

Finally, the fourth hypothesis involves the evaluation of hypothetical alternative rate designs.

The test statements and associated hypothesis are shown in Figure 1 below.

Test Statement	Hypothesis
We believe behind-the-meter battery storage can be used within the NYSEG service territory to provide customer savings.	If battery storage is placed behind-the-meter of commercial and industrial customers it can be used to reduce customer energy costs lowering customer bills.
We believe aggregation of behind-the-meter storage as virtual power plants allows customers to maximize their participation in NYSEG and NYISO Demand Response Markets.	If commercial and industrial customer battery storage systems are aggregated as virtual power plants multiple value streams in the NYSEG and NYISO demand response markets can be captured adding value to customers that would have not otherwise been captured individually.
We believe distribution system issues can be addressed through the dispatch of aggregated behind-the-meter battery storage assets.	If commercial and industrial customer battery storage systems are aggregated as virtual power plants distribution circuit and system peaks can be reduced.
We believe behind-the-meter battery storage will provide valuable data to test the impact of alternative rate designs.	If behind-the-meter battery storage is to become a cost effective solution to help reduce customer energy usage and provide multiple stakeholder benefits, then data needs to be collected to evaluate and inform the hypothetical impacts of alternative rates.

Figure 1: Aggregated Behind-the-Meter Energy Storage Test Statements

b. Test Population

The Project is being limited to commercial and industrial customers within the footprint of the ESC that is comprised of 15 feeders originating from four (4) substations and two (2) taps in Ithaca, NY[1]. NYSEG aims to choose up to eight (8) customers to enroll in the battery storage offering, with a total capacity of approximately 1.06 MW and 4.2 MWh. Ideally, these customers will be a mix of small, medium, and large peak loads on the system with enough variation in load profiles to enable effective aggregation. Selection will be based on an analysis of the customer's load profile, where available, to determine the customer's potential bill savings if they were to install a battery system. Selected customers must receive service on a commercial or industrial tariff with a demand charge, and have a peak load of at least 50 kW but less than 1 MW. Once potential customers have been identified and prioritized by their potential value to the project and their willingness to participate, NYSEG will reach out to the customers in order of priority using pre-existing customer relationships where possible. NYSEG will then meet with the customers to inform them of the advantages and disadvantages of the project and answer any questions they may have. From there, NYSEG and [redacted] will begin conducting site technical visits to begin assessing the technical feasibility of installing a battery at each site. NYSEG will then use this technical feasibility along with the previous assessment of the customer's value to the project and any additional pertinent information that may have been provided by the customer to determine which sites to pursue for the project. NYSEG will also work with local planning boards and other stakeholders in the community to address any concerns that may arise during the course of the project. NYSEG will work with [redacted] and the customers to ensure that the BTM batteries are as unobtrusive as possible.

c. Test Scenarios

The Project will validate four hypotheses through several individual scenarios or use cases with additional use cases (e.g., increasing Hosting Capacity and participating in NYISO wholesale markets) to be explored after sufficient experience is gained from the initial four (4) use cases. NYSEG estimates that a six (6) month learning and implementation period will likely be required before additional uses cases can be introduced.

[1] Customers in the ESC on the Cayuga Heights 602 feeder are excluded this demo project so as not to conflict with NYSEG's Distribution Circuit Deployed Battery Storage System demonstration project on that feeder.

Scenario (Use Case)	Description
Customer Energy Demand Management	This use case will demonstrate how behind-the-meter battery storage will decrease customer energy demand and smooth a customer load shape to reduce energy delivery costs.
Aggregate Demand Response Capacity and Participation	This use case will demonstrate how to aggregate customer behind-the-meter battery storage for participation in the NYISO Demand Response and NYSEG CSRP Demand Response programs to maximize value to all stakeholders.
Circuit and System Peak Reduction	This use case will demonstrate how to use individual and aggregated behind-the-meter energy storage to reduce both circuit and system level peaks to provide circuit and system wide benefits.
Inform Rate Design	This use case will evaluate and inform alternative rate design for BTM battery storage to show the hypothetical impacts from these alternative rates.

Figure 2: Aggregated Behind-the-Meter Energy Storage Test Scenarios

d. Checkpoints

NYSEG identified the following eight (8) measures of success as potential metrics to evaluate the Project results. Those proposed metrics are shown in the Figure 3 below.

Metric	Description
Customer Bill Savings	Determine the average customer monthly bill savings ($/kWh of installed capacity). Target: $1/kWh/month
Customer Acquisition	Measure the total number of participating customers in the Project. Target: 8
Market Revenue	Capture the demand response revenue from NYISO. Target: $15,000/yr
Total Demand Response Participation	Measure the percent of NYISO and NYSEG events participated in each year. Target: 75%
Aggregated Demand Response Capacity Improvement	Measure the total aggregated capacity in the NYISO SCR and is greater than if the customers had participated separately. Target: Total aggregated and separate capacity participation projections to be provided after all customers and battery sizes finalized

Aggregated Demand Response Participation Improvement	Percent increase of customers participating in NYISO and NYSEG DR markets from allowing customers to participate in aggregate as opposed to separately Target: 60 %
Overall Circuit and System Peak Reduction	Reduction of individual circuit peaks coincident with system level peaks in kW Target: Detailed Circuit-level targets to be provided after customer list finalized
Inform Rate Design	Evaluate and inform alternative rate designs for BTM battery storage. Target: 4 rate trial periods[2]

Figure 3: Aggregated Behind-the-Meter Energy Storage Proposed Filing Metrics

These initial metrics are designed to show how success will be measured in the demonstration project use cases supporting the project hypotheses. The check points below in Figure 4 describe the results to be assessed at regular intervals and compared to initial expectations. Each measure will be evaluated as information from the demonstration project becomes available throughout the third phase of the project.

Check Point	Description
Customer Bill Savings	Measure: Determine the average customer monthly bill savings ($/kWh of installed capacity). When: By 4/30/2021 How: NYSEG will track how much money each customer saves each month for the purposes of ensuring that the guaranteed savings in the customer contracts is met. At the end of the demo period NYSEG will assess the total savings each customer realized and compare them to the predicted savings for that customer. Expected Target: Average of $1/kWh installed/month Strategy if Results are Below Expectations: NYSEG will monitor each customer's savings throughout the project and work with [redacted] to reevaluate their battery management software if the expected savings are not realized.

[2] Trials will be set up and conducted in a way that customer's demand charge under their current rate will be unaffected.

Customer Acquisition	Measure: The total number of participating customers in the Project When: By 8/31/2018 How: NYSEG will track the number of customers who have signed agreements to participate in the project Expected Target: 8 total customers receiving BTM batteries Strategy if Results are Below Expectations: NYSEG will look to improve the design of the project to encourage customer participation. NYSEG will also leverage its existing community outreach program within the ESC to assist in the acquisition of interested commercial and industrial customers.
Market Revenue	Measure: Total Capture of demand response revenue from NYISO. When: By 4/30/2021 How: Throughout the pilot period NYSEG will track the amount of revenue able to be generated from the NYISO ICAP market through their SCR program. NYSEG will also track the revenue generated from performance payments from NYISO events. At the end of the two year operation period NYSEG will determine the average yearly revenue Expected Target: $15,000/yr from the NYISO market Strategy if Results are Below Expectations: If after the first summer NYISO ICAP period during Phase 3 results are below expectations, NYSEG will work with [redacted] to explore ways more capacity can be made available in the NYISO market. One potential way for NYSEG to do this is to shift the battery system's performance priorities towards market participation while maintaining the guaranteed level of customer savings.
Total Demand Response Participation	Measure: The percent of NYISO and NYSEG events participated in each year. When: By 4/30/2021 How: NYSEG will track how often the aggregation is able to participate in NYISO events throughout the trial period. Expected Target: 75% of total events

	Strategy if Results are Below Expectations: NYSEG will dynamically monitor the aggregation's participation in NYISO and NYSEG events and investigate the limiting factors preventing participation in events if the event participation percentage is below 50%. NYSEG will also explore ways to improve both the battery performance for this project and the design of its own DR program in order to increase participation
Aggregated Demand Response Capacity Improvement	Measure: The total aggregated capacity in the NYISO SCR and is greater than if the customers had participated separately. When: By 4/30/2021 How: NYSEG will track the amount of capacity bid into the NYISO SCR every month and compare it to what the total participation would have been if the 8 batteries had been bid into the market separately. Expected Target: TBD kW (Unknown until battery sizes and customers are known) Strategy if Results are Below Expectations: If results are below expectations, NYSEG will work with [redacted] to improve the aggregation software's ability to forecast each customer's demand in order to more accurately set aside capacity for market participation for the aggregation.
Aggregated Demand Response Participation Improvement	Measure: Total number of customers participating in NYISO and NYSEG DR markets is greater than if required to participate separately. When: By 4/30/2021 How: NYSEG will track the number of customers with capacity contributing to the NYISO SCR bid every month and compare it to what the total participation would have been if the 8 batteries had been bid into the market separately. Expected Target: 60% increase using aggregation Strategy if Results are Below Expectations: If results are below expectations, NYSEG will work with [redacted] to improve the aggregation software's ability to forecast each customer's demand in order to more accurately set aside capacity for market participation for the aggregation.

Overall Circuit and System Peak Reduction	Measure: Reduction of individual circuit peaks coincident with system level peaks in kW When: By 4/30/2021 How: After each year of operation for the entire fleet of 8 batteries in the aggregation, NYSEG will investigate the amount of circuit peak reduction provided by the batteries at the time of the system level peak by using the metering data on the customer and the battery as well as feeder head metering installed as part of the ESC project Expected Target: TBD% (Detailed Circuit-level targets to be provided after customer list finalized.) Strategy if Results are Below Expectations: If the reduction is below expectations, NYSEG will work with [redacted] to explore ways to increase the amount of peak reduction realized from the BTM batteries. NYSEG will also explore the use of alternative rates to encourage reduction during peak times.
Inform Rate Design	Measure: Evaluate and inform alternative rate designs for BTM battery storage. When: By 4/30/2021 How: NYSEG will complete two rate trial periods a year during the trial period and track the number of periods completed Expected Target: 4 rate trial periods Strategy if Results are Below Expectations: If results are below expectations at the midpoint of Phase 3, NYSEG will work with [redacted] to implement more rate trial periods.

Figure 4: Aggregated Behind-the-Meter Energy Storage Checkpoints

Section 2: Project Structure and Governance

a. Project Team

AVANGRID/NYSEG will have ultimate responsibility for managing project spending, meeting project milestones, and ensuring compliance with regulatory reporting requirements. AVANGRID/NYSEG has partnered with [redacted] through a competitive procurement process to aggregate and dispatch the batteries in the NYISO and NYSEG DR markets. [redacted] will also provide the necessary battery management software, engineering, equipment, and construction services required to implement the battery systems at each individual customer location. [redacted] will develop work under the direction of AVANGRID/NYSEG's Project Manager to ensure the Project is implemented successfully within scope, schedule, and budget. The high level project team composition is depicted below in Figure 5.

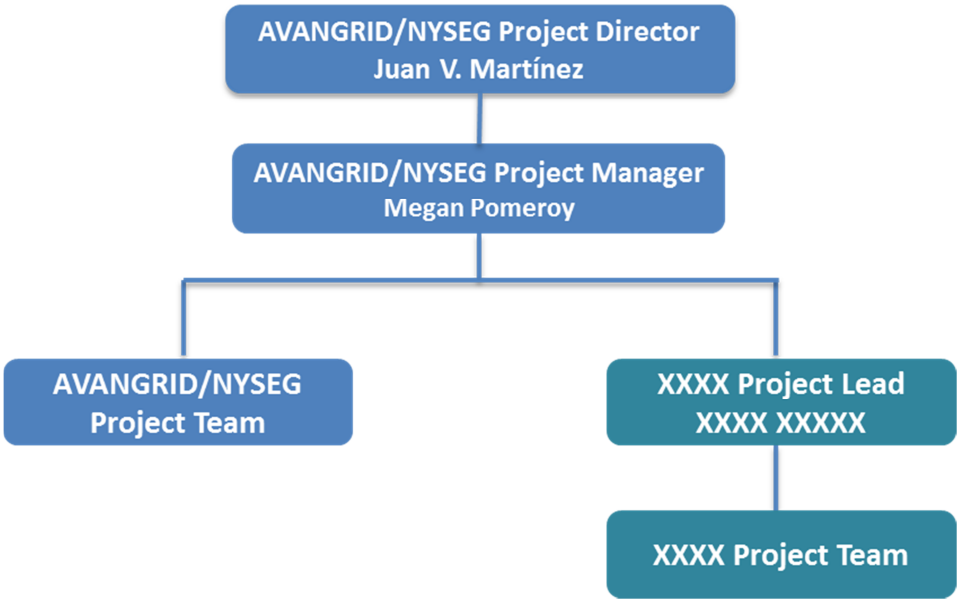


Figure 5: Team Leadership

AVANGRID/NYSEG will apply its skillsets, staff, expertise and knowledgebase to ensure the project meets the intended objectives and deliverables. [redacted] will apply specific skillsets that focus on the aggregation and dispatch as well as the installation, implementation, and construction of the customer battery systems. Figure 6 depicts the key skillsets that AVANGRID/NYSEG and [redacted] bring to the demonstration project.

AVANGRID/NYSEG Team Skillsets	[redacted] Team Skillsets
Project Management and Reporting	Project Management
Regulatory and Legal	Engineering
Employee Outreach and Engagement	Construction
Engineering Support	Commissioning & Testing
Facilities Management	Battery Technology
Use Case and Scalability Analysis	Battery Aggregation / Dispatch
	Analysis Support
	Interconnection
	Environmental and Land Use Permits

Figure 6: AVANGRID/NYSEG and [redacted] Skillsets

b. Project Staffing

A dedicated project team comprised of resources located within the various AVANGRID operating companies (NYSEG, Rochester Gas and Electric Corporation ("RG&E"), and United Illuminating Company ("UI")) to ensure the proper skillsets are available to facilitate a successful project implementation. In addition to the core team members listed the team will also draw upon other internal resources to help support the project as needed. The AVANGRID/NYSEG core team composition and relevant skillsets are listed in Figure 7 and the [redacted] core team and relevant skillsets are listed in Figure 8 below.

AVANGRID/NYSEG Team Member	Title	Relevant Skillset
Juan V. Martinez	Integrated System Planning	Program Management
Megan Pomeroy	Project Manager	Project Management
Drury MacKenzie	Project Development Lead	Project Development
Zach Caruso	Project Development Co-lead	Project Development
Iker Urrutia	Project Development ESC	ESC PMO
Peter Strzempka	Lead Engineer - Electrical System	Engineering Support – Electrical Design
Constantino Alvarez	Construction Supervisor	Construction Management
Archie McCullough	Integration Project Engineer	Engineering Support – Project Integration
Mark Marini	Director - Regulatory	Regulatory
John Forbush	Corporate Counsel	Legal

Juanita Washington	Corporate Communications	Employee Outreach & Engagement

Figure 7: AVANGRID/NYSEG Team Members and Skillsets

[redacted] Team Member	Title	Relevant Skillset
[redacted]	Project Manager	Project Management
[redacted]	Project Engineer	Engineering
[redacted]	Controls Engineer	Engineering
[redacted]	Interconnection Specialist	Interconnection
[redacted]	Permitting Manager	Environmental and Land Use Permits
TBD[3]	TBD[3]	Construction
TBD[3]	TBD[3]	Commissioning & Testing
TBD[3]	TBD[3]	Battery Technology
TBD[3]	TBD[3]	Battery Aggregation / Dispatch
TBD[3]	TBD[3]	Analysis Support

Figure 8: [redacted] Team Members and Skillsets

c. Roles and Responsibilities

Figure 9 below shows the roles and responsibilities of AVANGRID/NYSEG and of [redacted]. In the matrix, the "C" is Consulted; "I" is Informed; "R" is Responsible for the roles each company has during the Integrated Project.

Item	Phase	Project Task Description	NYSEG	[redacted]
1.1	Phase 1: Initiate			
1.1.1		Develop Business Model for Demonstration	R	I
1.2	Phase 1: Plan			
1.2.1		Review Customer Load Profile Data	R	I

[3] [redacted] is in the process of finalizing vendor contracts as of the time of this filing. Once the contracts have been completed, additional team members will be updated in the next implementation plan update.

1.2.2		Develop Targeted Customer List	R	I
1.2.3		Create Demonstration Agreement	R	I
1.3	Phase 1: Execute			
1.3.1		Meet with targeted customers to determine interest	R	I
1.4	Phase 1: Close Out			
1.4.1		Sign Up Participating Customers	R	I
2.1	Phase 2: Initiate			
2.1.1		Vendor Selected	R	I
2.1.2		Kick-off Meeting	R	I
2.1.3		Subcontractor Selection	I	R
2.2	Phase 2: Plan			
2.2.1		Engineering (Civil, Electrical, Controls, Mechanical)	C	R
2.2.3		Procure Batteries	I	R
2.2.4		Procure Inverter/PCS/BOP	I	R
2.3	Phase 2: Execute			
2.3.1		Civil/Site Construction	C	R
2.3.2		Delivery and connection of BESS	C	R
2.3.3		Test	C	R
2.4	Phase 2: Close Out			
2.4.1		Commission, Turn-over	C	R
3.1	Phase 3: Initiate			
3.1.1		Review Metrics and Information Gathering	R	C
3.2	Phase 3: Plan			
3.2.1		Develop Test Plan and determine roles & responsibility	R	C
3.3	Phase 3: Execute			
3.3.1		Hypothesis Validation and Data Collection	R	I
3.4	Phase 3: Close Out			
3.4.1		Results and Report Creation	R	I
3.4.2		Scalability Analysis	R	I
3.4.3		Demonstration Project Completion	R	I

Figure 9: Project Roles and Responsibilities by Company

d. Governance

The Project Team includes individuals from NYSEG, RG&E, and UI. AVANGRID is a holding company with executive responsibilities overseeing the direction and effective management of the business of its group of companies, which includes under its Networks subsidiary, the three utility entities identified above. The business affairs of AVANGRID are managed under the direction of its Board of Directors. In carrying out its responsibilities and exercising its decision-making authority, AVANGRID abides by the principles set forth in its by-laws, corporate policies, internal corporate governance rules and other internal codes and procedures that make up its corporate governance, and the standard rules for development of or supplementing those items.

For the Aggregated BTM ES Project, in support of NYSEG, AVANGRID maintains overall responsibility of project execution and will have ultimate responsibility for managing project spending, meeting project milestones, and ensuring that regulatory reporting requirements are met.

The Aggregated BTM ES Project will be governed through an Executive Steering Committee. The project team will be responsible for the day-to-day project implementation decisions. On a monthly basis, the Project Director will review project status with an Executive Steering Committee in order to ensure continued alignment with overall strategic direction, alignment with other REV initiatives, and mitigate barriers to help achieve project success. The Executive Steering Committee members are listed in Figure 10 below.

Steering Committee Member	Title	Responsibility
Christian Bilcheck	Vice President, Asset Management & Planning	Chair
Jeff Ballard	Vice President, Smart Grids	Smart Grids Strategic Planning
Frank Reynolds	Vice President, Gas Integration	Investment Planning
Ellen Miller	Vice President, Projects	Electric Capital Delivery
Rosana Martin	Head of Global Programs and Projects	Global Smart Grids Integration
Charles Eves	Vice President, Electric Operations	Operations
Vicky Kelsall	Vice President, Customer Service	Customer Service

Figure 10: AVANGRID Executive Steering Committee

Section 3: Work Plan and Budget

a. Project Plan

The demonstration project will cover a forty-three month period that includes project development, customer participation, site selection, construction, and commissioning of the battery systems. The installation of the eight battery systems is envisioned to take one year. Two (2) of the battery systems will be installed by the end of 2018 and the remaining systems will be installed by the middle of 2019. Once the systems have been initially installed, a twenty-seven month timeframe will be used for hypothesis validation, additional use case development, and reporting of results. The execution of the Project is divided into three phases with any additional follow-on analysis and reporting added as required.

Phase 1 – Customer Acquisition
This phase will include business model finalization, targeting and marketing to customers for participation. Site visits and financial modelling will be conducted for interested customers in order to determine the feasibility of the battery installation. Contracts will be executed for committed customers wanting to participate in the program.

Phase 2 - System Installation
This phase will include the engineering, construction, and installation of the battery and charging equipment at the participating customer sites. Installation of two customer sites will be completed by the end of December 2018 and the remaining systems will be installed by the end of June 2019.

Phase 3 - Hypothesis Validation and Reporting
This phase will include validation and testing of the hypothesis, use case functionality, development of any additional use cases, and provide analysis and reporting to determine scalability.

The deliverables and work effort associated with each phase of the project are broken out into the four main project lifecycle stages of Initiate, Plan, Execute, and Closeout. A project schedule is included in Appendix A. Milestones and projected completion dates are shown in Figure 11 below.

Milestone	Description	Date
Phase 1 - Initiate	Develop Business Model for Demonstration	October 2017 - March 2018
Phase 1 - Plan	Review Customer Load Profile Data, Develop targeted customer list, and Create Demonstration Agreement	December 2017-April 2018
Phase 1 - Execute	Meet with Targeted Customers to Determine Interest and Constructability	April - July 2018
Phase 1 - Closeout	Sign up Participating Customers	June - September 2018
Phase 2 - Initiate	Vendors Selected and Kick Off Meeting	June 2018
Phase 2 - Plan	Engineering and Procuring Equipment	July 2018-April 2019
Phase 2 - Execute	Construction and Testing	October 2018 - May 2019
Phase 2 -Closeout	Commissioning and Turnover	December 2018, June 2019
Phase 3 - Initiate	Review Metrics and Information Gathering	September 2018
Phase 3 - Plan	Develop Test Plan and Determine Roles & Responsibility	October - December 2018
Phase 3 - Execute	Hypothesis Validation and Data Collection	January 2019 – April 2021
Phase 3 -Closeout	Results and Report Creation, Scalability Analysis, Demonstration Project Completion	January 2021 - April 2021

Figure 11: Aggregated Behind-the-Meter Energy Storage Milestones

b. Project Budget

NYSEG will own the individual battery assets. The estimated cost of installation of the anticipated eight (8) battery systems and overall execution of the project over the initial three year demonstration period is estimated at $ 8.06 million. This includes the [redacted] million cost for [redacted] to design, procure, install and maintain all eight of the batteries. It also contains all necessary overheads and internal labor required to manage the batteries during the pilot period. A breakdown of the costs by category can be found in Figure 12 below.

Cost Category	Cost
Project Development	[redacted]
BSS Design, Procurement, and Installation	[redacted]
Internal & Overheads	[redacted]
Total Cost	***$8,059***

Figure 12: Cost Categorization ($000)

The yearly cash flow for the duration of the demo project is depicted below in Figure 13.

	2017	2018	2019	2020	2021
Estimated Costs	$79	$2,500	$5,442	$32	$6

Figure 13: Estimate project cost ($000)

Section 4: Reporting Structure

a. Reporting Expectations

Quarterly reports will be provided to Staff throughout the Aggregated BTM ES Project. The reports will provide an update on implementation progress according to the project plan and budget variances, and noting task and activity progress. The quarterly report outline and format that will be utilized is shown in Figure 14 below.

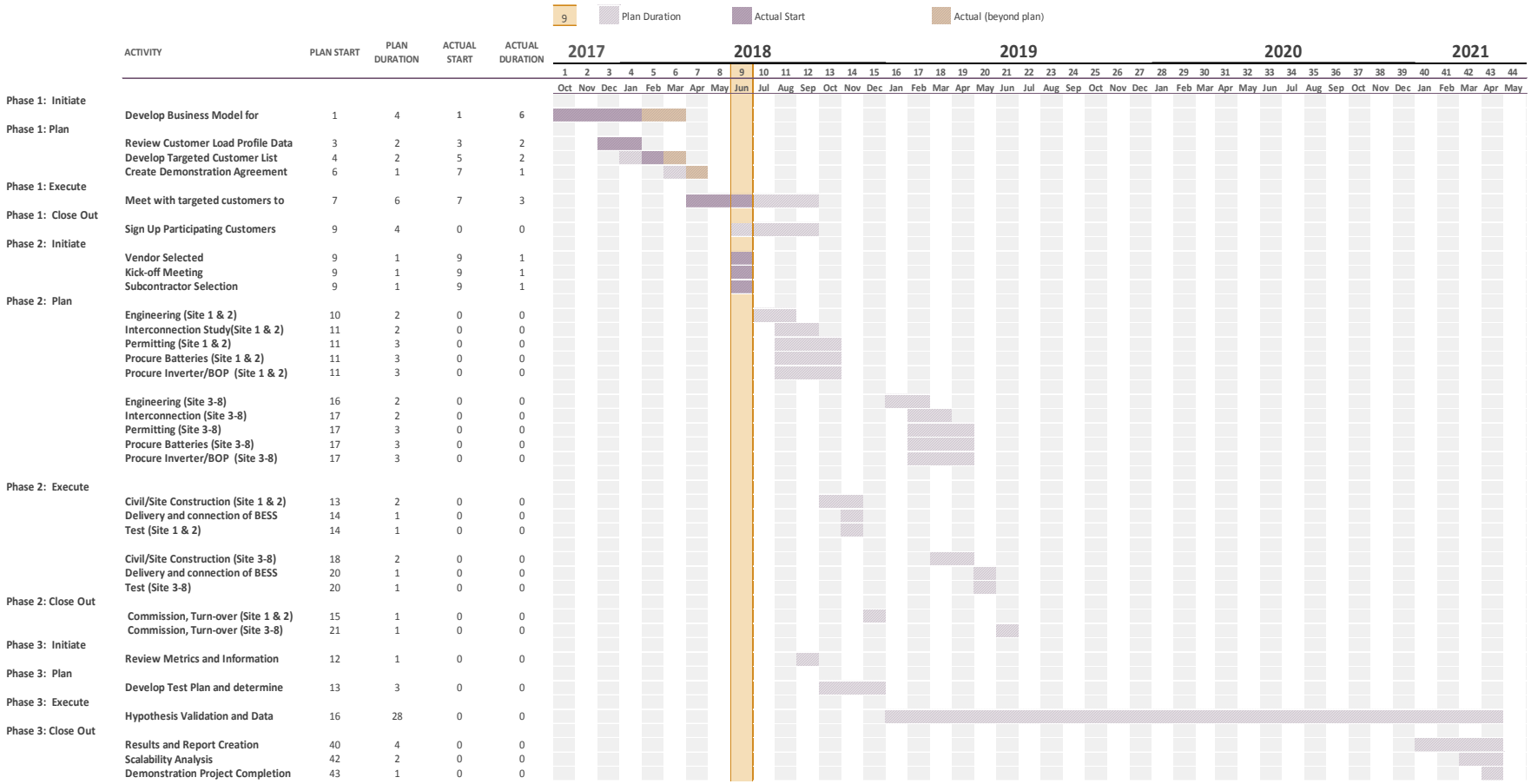
1.0 Executive Summary
2.0 Demonstration Highlights
2.1 Since Previous Quarter
2.1.1 Tasks Completed
2.1.2 Task Activities Overview
2.1.3 Sub-Task Activities Overview
2.2 Next Quarter Forecast
2.2.1 Checkpoints/Milestone Progress
2.2.2 Planned Activities
2.2.3 Expected Changes
2.3 Issues
3.0 Work Plan & Budget Review
3.1 Task Review
3.1.1 Task 1.0
- Progress Assessment
- Issues

3.1.1.1 Sub-Task 1.0.1
3.1.1.2 Sub-Task 1.0.2
3.2 Work Plan
3.2.1 Updated Work Plan
3.2.2 Updated Budget
4.0 Conclusion
4.1 Lessons Learned
4.2 Recommendations

Figure 14: Quarterly Report Template

Appendix A: Project Schedule

PROJECT SCHEDULE: NYSEG and XXXXXXXXXXXXXX



	ACTIVITY	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION
Phase 1: Initiate					
	Develop Business Model for	1	4	1	6
Phase 1: Plan					
	Review Customer Load Profile Data	3	2	3	2
	Develop Targeted Customer List	4	2	5	2
	Create Demonstration Agreement	6	1	7	1
Phase 1: Execute					
	Meet with targeted customers to	7	6	7	3
Phase 1: Close Out					
	Sign Up Participating Customers	9	4	0	0
Phase 2: Initiate					
	Vendor Selected	9	1	9	1
	Kick-off Meeting	9	1	9	1
	Subcontractor Selection	9	1	9	1
Phase 2: Plan					
	Engineering (Site 1 & 2)	10	2	0	0
	Interconnection Study(Site 1 & 2)	11	2	0	0
	Permitting (Site 1 & 2)	11	3	0	0
	Procure Batteries (Site 1 & 2)	11	3	0	0
	Procure Inverter/BOP (Site 1 & 2)	11	3	0	0
	Engineering (Site 3-8)	16	2	0	0
	Interconnection (Site 3-8)	17	2	0	0
	Permitting (Site 3-8)	17	3	0	0
	Procure Batteries (Site 3-8)	17	3	0	0
	Procure Inverter/BOP (Site 3-8)	17	3	0	0
Phase 2: Execute					
	Civil/Site Construction (Site 1 & 2)	13	2	0	0
	Delivery and connection of BESS	14	1	0	0
	Test (Site 1 & 2)	14	1	0	0
	Civil/Site Construction (Site 3-8)	18	2	0	0
	Delivery and connection of BESS	20	1	0	0
	Test (Site 3-8)	20	1	0	0
Phase 2: Close Out					
	Commission, Turn-over (Site 1 & 2)	15	1	0	0
	Commission, Turn-over (Site 3-8)	21	1	0	0
Phase 3: Initiate					
	Review Metrics and Information	12	1	0	0
Phase 3: Plan					
	Develop Test Plan and determine	13	3	0	0
Phase 3: Execute					
	Hypothesis Validation and Data	16	28	0	0
Phase 3: Close Out					
	Results and Report Creation	40	4	0	0
	Scalability Analysis	42	2	0	0
	Demonstration Project Completion	43	1	0	0