

**GOVERNMENT OF PUERTO RICO
PUBLIC SERVICE REGULATORY BOARD
PUERTO RICO ENERGY BUREAU**

NEPR

Received:

Jul 17, 2021

6:22 PM

IN RE: PRELIMINARY STUDIES FOR
NEW COMBINED CYCLE POWER PLANT
IN PALO SECO

CASE NO.: NEPR-MI-2021-0003

SUBJECT: Motion to Submit July 2021
Status Report

MOTION TO SUBMIT JULY 2021 STATUS REPORT

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COMES NOW, the Puerto Rico Electric Power Authority, through its counsel of record and respectfully submits:

1. On February 1, 2021, the Puerto Rico Energy Bureau of the Public Service Regulatory Board (the “Energy Bureau”) entered *Resolution and Order* opening the captioned matter and directing the Puerto Rico Electric Power Authority (the “Authority”) to, on the 15th day of each subsequent month, submit a report on the status of the development of studies for a new combined cycle gas turbine in the San Juan area (the “Order”).

2. The Authority has filed status reports for the months of February, March, April, May and June 2021 thus far.¹ On July 15, 2021, the Authority filed a Request for Extension of Time to Submit July 2021 Status Report (the “July 15 Motion”). In the July 15 Motion, the Authority informed the Energy Bureau that it did not have a contract in place with the consultant retained to coordinate and complete the report required by the Order and thus, it was not be able to comply with the Order in a timely fashion. July 15 Motion at ¶ 2. Further, the Authority reported that it

¹ See *Motion in Compliance with Order Entered on February 1, 2021; Motion to Submit April 2021 Monthly Status Report in Compliance with the February 1st, 2021 Resolution and Order; Motion to Submit April 2021 Monthly Status Report in Compliance with the February 1st, 2021 Resolution and Order; Motion to Substitute April 2021 Status Report; Motion to Submit May 2021 Status Report in Compliance with Order Entered on February 1, 2021; and Motion to Submit June 2021 Status Report in Compliance with Order Entered on February 1, 2021.*

had delegated the responsibility of completing the report on a team of its officers and said officers were already working to complete the report but, it was not going to be finalized in time to comply with the July 15 deadline. *Id.* at ¶ 3. For those reasons, the Authority requested the Energy Bureau to grant an extension of time until July 21, 2021, to complete and file the July 2021 status report. *Id.*

3. After the July 15 Motion was filed, the Authority's officers continued to work towards completing the report. The goal was to produce a final version of the status report before July 22, 2021, the date that the Authority asked the Energy Bureau to grant as deadline to submit the report.

4. Yesterday, July 16, 2021, the Authority's officers completed the July 2021 status report. The report is herein submitted for the consideration of the Energy Bureau. *See Exhibit A, New Combined Cycle Planning and Studies Monthly Progress Report* (the "July 2021 Status Report").

WHEREFORE, the Authority respectfully requests the Honorable Energy Bureau to note the filing of the July 2021 Status Report and determine that the Authority has complied with the Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 17th day of July 2021.

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Exhibit A



**Puerto Rico
Electric Power
Authority**

Puerto Rico Electric Power Authority (PREPA)

**New Combined Cycle Planning and Studies
Monthly Progress Status Report
July 15, 2021**

Introduction and Outline

Introduction:

- The Puerto Rico Energy Bureau’s Integrated Resources Plan (IRP) Final Resolution and Order, approved on August 24, 2020, establishes a limit of \$5 million in expenses for preliminary economic, siting, permitting and planning analysis of a combined cycle plant and fuel delivery infrastructure.
- PREPA is currently performing planning and studies for the construction of a new dual-fuel, combined cycle power plant in the San Juan area with a capacity between 300 and 400 MW and is not to exceed the Energy Bureau-approved \$5 million.
- This report outlines PREPA’s progress on this phase of the project and provides the following four elements requested by the Energy Bureau:
 - 1) A proper and adequate detailed description of the specific tasks and studies;
 - 2) The progress of such tasks;
 - 3) Gantt Chart of the timeline for the completion of the required preliminary work; and
 - 4) Copies of the contract originally executed for the preliminary work.

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Project Overview

Management Notes:

- S&L has submitted the Environmental Due Diligence Report (T-3) and New Combined Cycle Power Plant Location Selection Report (T-4) for review and approval.
- The draft Renewable Integration Study (Task 1) has been completed. The completion date will be updated in the August 15, 2021 report, pending PREPA and LUMA review before issuing the final report.
- Due to PREPA and LUMA reorganization and staff changes several key tasks were delayed during the month of June 2021. Incomplete tasks will be re-forecasted with the August 15, 2021, monthly report.

Financials

Approved Budget Baseline	\$5,000,000
Total Expenses From Previous Periods	\$784,103
Expenses This Period	\$24,043
Total Expenses	\$808,146
Total Expenses / Approved Budget Baseline	16.16%

Scope

70%

Planning Analysis

92%

In Progress

On-Budget Delayed

Siting

73%

In Progress

On-Budget Delayed

Permitting

15%

In Progress

On-Budget On-Schedule

Preliminary Economic

10%

In Progress

On-Budget On-Schedule

Max. Monthly Headcount (based on March)



6

PREPA's Headcount



8

Contractor's Headcount

14

Max. Total Headcount

Schedule Metrics

11/16/2020

Project Start Date

23

Total Scheduled Tasks

6

Pending Tasks On-Track

7/9/2021

Project End Date

8

YTD Tasks Completed

9

Pending Tasks Delayed

83%

Time Elapsed

14

Tasks Due in June

0

Pending Tasks Overdue

Significant Upcoming Milestones

Description	Target Period
Determine if units will be decommissioned and replaced by the new combined cycle	2021 Q2
Develop a long-term gas agreement plan	2021 Q2
Prepare proposed relocation of the new combined cycle and present to stakeholders	2021 Q2
Determine the effect of the renewables' growth in the grid and its potential solutions	2021 Q3



Project Tasks By Workstream

ID	Task Description	% Complete	Scheduled Start	Scheduled / Actual Finish	Status
Planning Analysis Workstream					
1	Renewable Integration Study	95%	11/16/2020	8/15/2021	Delayed
2	Retirement of Existing Thermal Resources Report – Updated every 6 months after initial release <i>(Reference in Final IRP O&R – Pg. 270, ¶¶ 869-878)</i>	100%	2/17/2021	5/17/2021	Completed
3	Environmental (Permitting) Due Diligence Report	95%	12/18/2020	9/15/2021	Delayed
4	New Combined Cycle Power Plant Location Selection Report	80%	12/18/2020	9/15/2021	Delayed
5	Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA (Milestone)	0%	6/15/2021	9/15/2021	Delayed
Siting Workstream					
6	Geotechnical Investigation	100%	1/11/2021	4/30/2021	Completed
7	Site Survey	100%	1/11/2021	4/30/2021	Completed
8	Design Criteria Update	100%	1/11/2021	5/21/2021	Completed
9	General Arrangement	100%	1/11/2021	6/28/2021	Completed



Project Tasks By Workstream (Cont'd)

ID	Task Description	% Complete	Scheduled Start	Scheduled Finish	Status
Siting Workstream (Cont'd)					
10	Heat Balance Analysis	100%	1/11/2021	4/30/2021	Completed
11	Water Balance Analysis	100%	3/1/2021	3/5/2021	Completed
12	Flood Study	100%	3/1/2021	6/14/2021	Completed
13	Process Flow Diagrams (P&IDs)	100%	3/1/2021	5/14/2021	Completed
14	Single Line Diagram	100%	2/1/2021	5/14/2021	Completed
15	Architectural Conceptual Design	100%	3/1/2021	6/28/2021	Completed
16	Site Development Conceptual Design	100%	3/1/2021	6/28/2021	Completed
17	Site Grading and Drainage	100%	3/15/2021	6/28/2021	Completed
18	Major Foundation Conceptual Design	100%	4/1/2021	6/28/2021	Completed
19	Electrical Arrangements	100%	3/1/2021	6/28/2021	Completed



Project Tasks By Workstream (Cont'd)

ID	Task Description	% Complete	Scheduled Start	Scheduled Finish	Status
Permitting Workstream					
20	COE Environmental Application – Consultation	15%	1/11/2021	9/15/2021	Delayed
Preliminary Economic Workstream					
21	Project Cost Estimate – Full Combined Cycle Project	10%	1/11/2021	8/15/2021	Delayed
22	Project Schedule – Full Combined Cycle Project	10%	1/11/2021	8/15/2021	Delayed
Close-Out Tasks					
23	Final Report of all Deliverables Upon Completion for PREB (Milestone)	0%	6/28/2021	11/15/2021	Delayed



Project Tasks By Workstream – Phase 2

ID	Task Description	% Complete	Scheduled Start	Scheduled Finish	Status
Planning Analysis Workstream					
1	10-Year Thermal Generation Retirement, Addition, and Conversion Plan <i>(Draft released to PREPA December 30, 2020)</i>	80%	12/18/2020	10/29/2021	On Track
Siting Workstream					
2	3D Model	0%	5/3/2021	8/13/2021	On Track
Permitting Workstream					
3	NEPA EA Report – Consultation	15%	1/11/2021	8/31/2021	On Track
4	Air Permit Application – Consultation	15%	1/11/2021	8/31/2021	On Track
5	NPDES Permit Application – Consultation	15%	1/11/2021	8/31/2021	On Track
Close-Out Tasks					
6	New Combined Cycle Planning and Studies Phase One Results Submitted to COR3	0%	8/12/2021	8/12/2021	On Track
7	New Combined Cycle Planning and Studies Phase One Results Submitted to FEMA	0%	10/12/2021	10/12/2021	On Track

Note: These tasks and milestones are expected to be completed after the end date of the New Combined Cycle Planning and Studies project phase 1 and during later phases of the New Combined Cycle Project.



Appendix

Project Scope, Objectives and Benefits

The New Combined Cycle Planning and Studies Project Scope

- This phase of the project is designed to perform a preliminary economic, siting, permitting, and planning analysis of a new combined cycle plant and its fuel delivery infrastructure and/or energy storage, as mandated by the PREB.
- The Budget is not to exceed \$5 million for this phase and was originally scheduled from November 16, 2020 to July 9, 2021. However, due to loss of employees and transfer of responsibilities among PREPA staff during the PREPA to LUMA transition much of this work was disrupted and is now re-starting. A revised expected completion day will be provided on the August 15, 2021, report).

Project Objectives

- Assess the feasibility of a reliable and cost-effective optimal power generation solution to mitigate severe category 5 storms such as those experienced during and after hurricane Maria, as well as other natural disasters including earthquakes.
- Assess the capability of PREPA's power grid to accommodate increased levels of renewable generation and its impact in the overall electrical system stability and the need of synchronous thermal generation to maintain grid stability.
- Illustrate the cost effectiveness of performing preliminary permitting and engineering activities for a new combined cycle plant while not interfering with or delaying the procurement of solar PV (or other renewable energy) and battery energy storage resources.

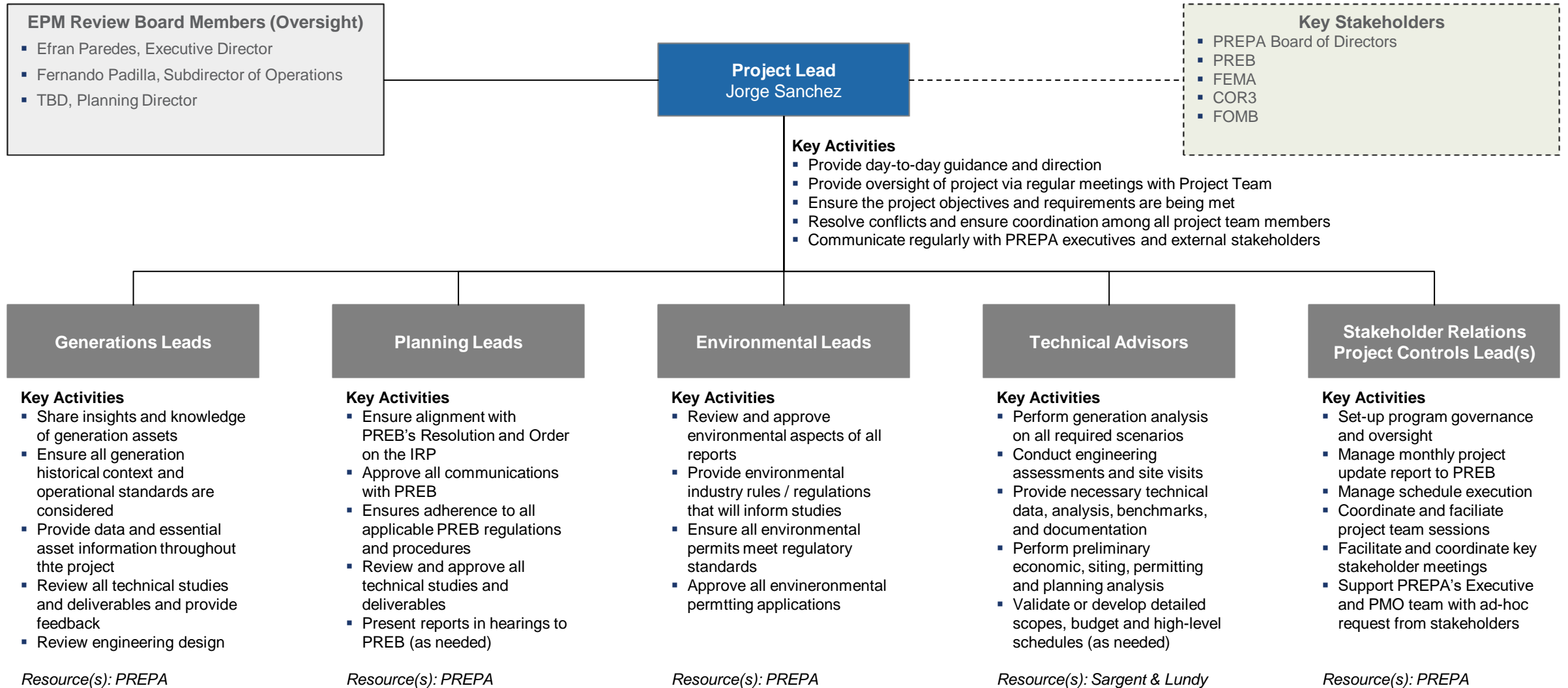
Project Benefits

- Protect against the uncertainty of near-future solar PV and battery energy storage price outcomes, or other potential reliability concerns by continuing with these planning and studies in parallel with the renewable procurements.
- Determine the most reliable and cost-effective generation solution for the northern part of the island¹.
- Determine the most optimal generation solution that mitigates the hazards from major catastrophic events (e.g., hurricanes and earthquakes)¹.

[1] Note: In collaboration with and seeking the approval of the Energy Bureau.



Project Organization Structure



New Requirements and Project Re-Baseline Summary

The New Combined Cycle Planning and Studies Project has been re-baselined to reflect PREB's most recent requirement and other external dependencies. This re-baseline will have an impact on the completion date of several deliverables.

- **PREB Requirement**

- The PREB's Resolution and Order on the 10-Year Plan on March 26, 2021, clarified that this feasibility study is aligned with the Approved IRP and the Modified Action Plan.
- Additionally, the PREB has ordered PREPA to ensure that this study considers/includes the integration of new renewable energy near San Juan.
- To best reflect this requirement and align the results of this feasibility study with the order, the Renewable Energy Integration Study (Task 1) should be completed, evaluated, and considered within the next phase of this project.
- Prior to seeking any subsequent funding approvals for new generation from FEMA, PREPA will seek the approval from the PREB. Any timeline for the submissions to FEMA and the next phase of this project will be dependent on this PREB approval.

- **External Dependencies**

- PREPA is working on the final modeling analysis and emissions inventory work related state implementation plan (SIP) to submit to the EPA (expected completion was end of May 2021 but has now been delayed due to PREPA and LUMA reorganization and staff changes. A revised expected day will be provided on August 15, 2021, report). While this work is separate from the feasibility study project, it has led to delays to multiple tasks in this project.

- **Path Forward**

- As noted, this project has been re-baselined with a new schedule and task completion dates that incorporate the PREB requirement and SIP dependency described above which will inform deliverables such as the New Combined Cycle Power Plant Location Selection Report and 10-Year Thermal Generation Retirement, Addition, and Conversion Plan.
- Phase 1 results will lead to recommendations on how to best support the integration of new renewables and any new generation required to ensure the reliability of the grid. Anticipated completion date was July 9, 2021, but has now been delayed due to PREPA and LUMA reorganization and staff changes. A revised expected day will be provided on August 15, 2021, report
- During Phase 2, this project will make recommendations on the type of generation (if required) that is most feasible, technically and operationally reliable, and cost effective to support the integration of new renewables. Approximate completion date is late October 2021.

New Combined Cycle Planning and Studies Monthly Progress Status Report July 15, 2021

ID	Task Name	Duration	Start	Finish	% Complete	Baseline Finish	Qtr 4, 2020			Qtr 1, 2021			Qtr 2, 2021			Qtr 3, 2021			Qtr 4, 2021		
							Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	New Combined Cycle Planning and Studies Phase 1	272 days	11/16/2020	11/30/2021	86%	6/30/2021															
2	Planning Analysis Workstream	170 days	11/16/2020	7/9/2021	92%	6/15/2021															
3	Renewable Integration Study	170 days	11/16/2020	7/9/2021	95%	5/28/2021															
4	Retirement of Existing Thermal Resources Report	64 days	2/17/2021	5/17/2021	100%	5/17/2021															
5	Environmental (Permitting) Due Diligence Report	118 days	12/18/2020	6/1/2021	95%	6/1/2021															
6	New Combined Cycle Power Plant Location Selection Report	122 days	12/18/2020	6/7/2021	80%	6/7/2021															
7	Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA	0 days	6/15/2021	6/15/2021	0%	6/15/2021															
8	Siting Workstream	178 days	1/11/2021	9/15/2021	93%	5/31/2021															
9	Geotechnical Investigation	85 days	1/11/2021	5/7/2021	100%	5/7/2021															
10	Site Survey	85 days	1/11/2021	5/7/2021	100%	5/7/2021															
11	Design Criteria Update	95 days	1/11/2021	5/21/2021	100%	5/21/2021															
12	General Arrangement	121 days	1/11/2021	6/28/2021	100%	5/21/2021															
13	Heat Balance Analysis	45 days	3/1/2021	4/30/2021	100%	4/30/2021															
14	Water Balance Analysis	5 days	3/1/2021	3/5/2021	100%	3/5/2021															
15	Flood Study	76 days	3/1/2021	6/14/2021	100%	5/28/2021															
16	Process Flow Diagrams (P&IDs)	55 days	3/1/2021	5/14/2021	100%	5/14/2021															
17	Single Line Diagram	75 days	2/1/2021	5/14/2021	100%	5/14/2021															
18	Architectural Conceptual Design	86 days	3/1/2021	6/28/2021	100%	5/14/2021															
19	Site Development Conceptual Design	86 days	3/1/2021	6/28/2021	100%	5/28/2021															
20	Site Grading and Drainage	76 days	3/15/2021	6/28/2021	100%	5/28/2021															
21	Major Foundation Conceptual Design	63 days	4/1/2021	6/28/2021	100%	5/28/2021															
22	Electrical Arrangements	86 days	3/1/2021	6/28/2021	100%	5/28/2021															
23	Permitting Workstream	178 days	1/11/2021	9/15/2021	50%	5/31/2021															
24	COE Environmental Application – Consultation	178 days	1/11/2021	9/15/2021	50%	5/31/2021															
25	Preliminary Economic	155 days	1/11/2021	8/15/2021	80%	6/28/2021															
26	Project Cost Estimate	156 days	1/11/2021	8/15/2021	65%	8/28/2021															
27	Project Schedule	121 days	1/11/2021	6/28/2021	100%	5/30/2021															
28	Close-out Workstream	112 days	6/28/2021	11/30/2021	0%	6/30/2021															
29	Final Report of all Deliverables Upon Completion for PREB	112 days	6/28/2021	11/30/2021	0%	6/28/2021															
30	New Combined Cycle Planning and Studies Phase 2	226 days	12/18/2020	10/31/2021	36%	10/29/2021															
31	Planning Analysis Workstream Phase 2	226 days	12/18/2020	10/29/2021	100%	10/29/2021															
32	Thermal Generation Retirement, Addition, and Conversion Plan	226 days	12/18/2020	10/29/2021	100%	10/29/2021															
33	Siting Workstream Phase 2	75 days	5/3/2021	8/13/2021	15%	8/13/2021															
34	3D Model	75 days	5/3/2021	8/13/2021	15%	8/13/2021															
35	Permitting Workstream Phase 2	210 days	1/11/2021	10/31/2021	15%	8/31/2021															
36	NEPA EA Report – Consultation	211 days	1/11/2021	10/31/2021	15%	8/31/2021															
37	Air Permit Application – Consultation	211 days	1/11/2021	10/31/2021	15%	8/31/2021															
38	NPDES Permit Application – Consultation	211 days	1/11/2021	10/31/2021	15%	8/31/2021															
39	Close-out Workstream Phase 2	44 days	8/12/2021	10/12/2021	0%	10/12/2021															
40	New Combined Cycle Planning and Studies Phase One Results Submitted to COR3	1 day	8/12/2021	8/12/2021	0%	8/12/2021															
41	New Combined Cycle Planning and Studies Phase One Results Submitted to FEMA	0 days	10/12/2021	10/12/2021	0%	10/12/2021															