

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

NEPR Received: Jan 18, 2022 11:30 AM

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

CASE NO.: NEPR-MI-2021-0003

SUBJECT: Motion to Submit January 2022
Status Report in Compliance with Order

**MOTION TO SUBMIT JANUARY 2022 STATUS
REPORT IN COMPLIANCE WITH ORDER**

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

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

1. On February 1, 2021, the Puerto Rico Energy Bureau of the Public Service Regulatory Board (“Energy Bureau”) entered *Resolution and Order* opening the captioned matter and directing PREPA 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 (CCGT) in the San Juan area. To date, PREPA has submitted a total of eleven (11) status reports. *See*, case of caption docket in general.

2. In compliance with the Order, on November 15, 2021, PREPA submitted the report titled *New Combined Cycle Planning and Studies Monthly Progress Status Report* dated November 15, 2021 (“November Report”). The November 15 Status Report outlines and details PREPA’s progress in the development of the studies for the new CCGT in the north.

3. On the November Report, PREPA noted that, on October 15, 2021, it had filed with the Energy Bureau a *Motion to Submit October 2021 Status Report in Compliance with Order Entered on February 1, 2021* (“October Report”). PREPA further mentioned that, in the October Report,

PREPA listed Planning Analysis Workstreams tasks that were completed and expected to be submitted to the Energy Bureau by the end of October 2021. Furthermore, PREPA informed that due to a change in the strategy to retire thermal generation assets, this submittal was not done. The change in the strategy to retire thermal generation assets includes the retirement and life extension of existing legacy generation units and the addition of new generation currently under evaluation as part of the Federal Emergency Management Administration 404 and 428 programs.

4. PREPA advanced to the Energy Bureau that a revised Retirement of Existing Thermal Resources Report will be prepared to align the new generation asset strategy and that it is expected that the report will be completed between the 1st and 2nd quarters of 2022.

5. On November 18, 2021, the Energy Bureau entered a *Resolution and Order* addressing the November 15 Status Report, detailing the importance of the approved Integrated Resource Plan (IRP)¹ and that it may not be altered without approval of the Energy Bureau (the “November 18 Order”). PREPA hereby reiterates that its generation strategy for the retirement of the existing thermal resources is consistent with the approved IRP, given that its main goal is to maintain a safe and reliable electrical service for the benefit of the customers in Puerto Rico and thus, the report will present a strategy consistent with the approved IRP.

6. PREPA herein presents to the Energy Bureau the *New Combined Cycle Planning and Studies Monthly Progress Status Report* dated January 15, 2022 (“January Report”). See, Attachment A. The January Report outlines and details PREPA’s progress in the development of the studies for the new CCGT in the north. The following notes are a high-level report of the tasks and initiatives for the reported period:

- There is no substantial progress to report during the month of December 2021.

¹ *Final Resolution and Order on the Puerto Rico Electric Power Authority Integrated Resource Plan* entered in case no. CEPR-AP-2018-0001, *In Re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*.

- The tasks listed in the Planning Analysis Workstreams (slide 4, 1-6) are being reviewed in parallel with a short-term maintenance proposed plan of existing operating generation assets, a proposed new location for the combined cycle plant near the San Juan steam plant, environmental impact requirements, and new renewable integration resources. Any revision to these reports will be made in compliance with the approved IRP.
- The timeline to complete the review and revisions (as needed) of reports listed in Tasks 1 through 6 is detailed in the report. PREPA expects to complete the main report by the end of March 2022 and thereafter, present the reports and results to the Energy Bureau by April 2022.
- PREPA did not incur in any expenses in connection to the studies performed through the end of December 2021.

7. PREPA asserts that it is moving in the direction of a lower cost and cleaner energy future that meets Puerto Rico's legislative goals while procuring to maintain reliability and stability in the system during such transition.

WHEREFORE, PREPA respectfully requests the Energy Bureau to note the filing of the January Report.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 18th day of January 2022.

/s Katuska Bolaños-Lugo

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Attachment A



**Puerto Rico
Electric Power
Authority**

Puerto Rico Electric Power Authority (PREPA)

**New Combined Cycle Planning and Studies
Monthly Progress Status Report
January 15, 2022**

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.

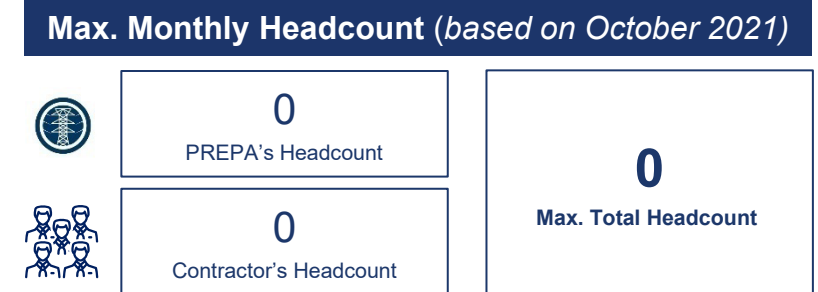
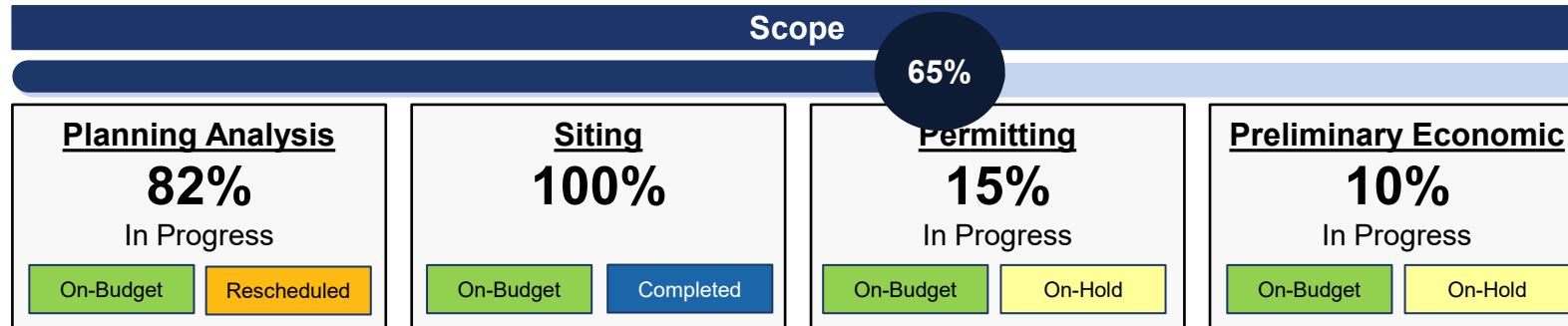
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Project Overview

Management Notes:

- No substantial progress to report during the month of December 2021 due to the Christmas Holidays. Tasks listed in the Planning Analysis Workstreams are being reviewed in parallel with a short-term maintenance proposed plan of existing operating generation assets, a proposed new location for the combined cycle plant near the San Juan steam plant, environmental impact requirements, and new renewable integration resources. Any revision to these documents (Tasks 1 – 6) will assure total compliance with PREB’s approved Integrated Resource Plan (IRP) of August 24, 2020.
- The timeline to complete these reviews and revisions (as needed) of documents listed in Tasks 1 through 6 is shown below. Expected completion is end of March 2022 for submittal to PREB in April 2022. This reduced the overall progress from 73% (reported November 15, 2021) to 65% due to an increase in the timeline to complete all deliverables listed in the Planning Workstream.
- There are no expenses to report through the end of December 2021.

Financials	
Approved Budget Baseline	\$ 5,000,000
Total Expenses From Previous	\$ 1,227,448
Expenses This Period	\$ -
Total Expenses	\$ 1,227,448
Total Expenses / Approved Budget Baseline	24.55%



Schedule Metrics		
11/16/2020 Project Start Date	23 Total Scheduled Tasks	4 Pending Tasks On-Track
04/15/2022 Project End Date	15 YTD Tasks Completed	11 Pending Tasks On-Hold
65% Time Elapsed	0 Tasks Due in Dec 2021	1 New Task

Significant Upcoming Milestones	
Description	Target Period
Prepare proposed relocation of the new combined cycle and present to stakeholders	2022 Q2
Determine the effect of the renewables' growth in the grid and its potential solutions	2022 Q3
Finalize the Renewable Integration Study and Submit to PREB	2022 Q3
Determine Project Schedule and Cost Estimate for the Full Combined Cycle Project	2022 Q4



Project Tasks By Workstream

ID	Task Description	% Complete	Scheduled Start	Scheduled / Actual Finish	Status
Planning Analysis Workstream					
1	Renewable Integration Study	89%	11/16/2020	3/31/2022	Re-Scheduled
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	NEW revision of the 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>	0%	11/30/2021	3/31/2022	New TASK
4	Environmental (Permitting) Due Diligence Report	84%	12/18/2020	3/31/2022	Re-Scheduled
5	New Combined Cycle Power Plant Location Selection Report	88%	12/18/2020	3/31/2022	Re-Scheduled
6	Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA (Milestone)	85%	6/15/2021	3/31/2022	Re-Scheduled
Siting Workstream					
6	Geotechnical Investigation specification	100%	1/11/2021	4/30/2021	Completed
7	Site Survey specification	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 / Actual 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 / Actual Finish	Status
Permitting Workstream					
20	COE Environmental Application – Consultation*	15%	1/11/2021	2/15/2022	On-Hold
Preliminary Economic Workstream					
21	Project Cost Estimate – Full Combined Cycle Project*	10%	1/11/2021	2/25/2022	On-Hold
22	Project Schedule – Full Combined Cycle Project*	10%	1/11/2021	2/25/2022	On-Hold
Close-Out Tasks					
23	Final Report of all Deliverables Upon Completion for PREB (Milestone)*	0%	6/28/2021	3/14/2022	On-Hold

* Tasks **on hold** pending approval to continue engineering for the Combined Cycle Phase I deliverables under FEMA 404



Project Tasks By Workstream – Phase 2

ID	Task Description	% Complete	Scheduled Start	Scheduled / Actual Finish	Status
Planning Analysis Workstream					
1	10-Year Thermal Generation Retirement, Addition, and Conversion Plan* <i>(Draft released to PREPA December 30, 2020)</i>	60%	12/18/2020	3/14/2022	On-Hold
Siting Workstream					
2	3D Model*	0%	5/3/2021	2/25/2022	On-Hold
Permitting Workstream					
3	NEPA EA Report – Consultation*	15%	1/11/2021	03/11/2022	On-Hold
4	Air Permit Application – Consultation*	15%	1/11/2021	03/11/2022	On-Hold
5	NPDES Permit Application – Consultation*	15%	1/11/2021	03/11/2022	On-Hold
Close-Out Tasks					
6	New Combined Cycle Planning and Studies Phase One Results Submitted to COR3*	0%	8/12/2021	8/12/2022	On-Hold
7	New Combined Cycle Planning and Studies Phase One Results Submitted to FEMA*	0%	10/12/2021	10/12/2022	On-Hold

* Tasks **on hold** pending approval to continue engineering for the Combined Cycle Phase I deliverables under FEMA 404



Appendix

Project Scope, Objectives and Benefits

The New Combined Cycle Planning and Studies Project Scope

- The planning study phase consisting of 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 has been completed and is expected to be submitted to PREB by mid-April 2022.
- The actual cost to complete the PREB approved scope will not exceed the \$5 million.

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.

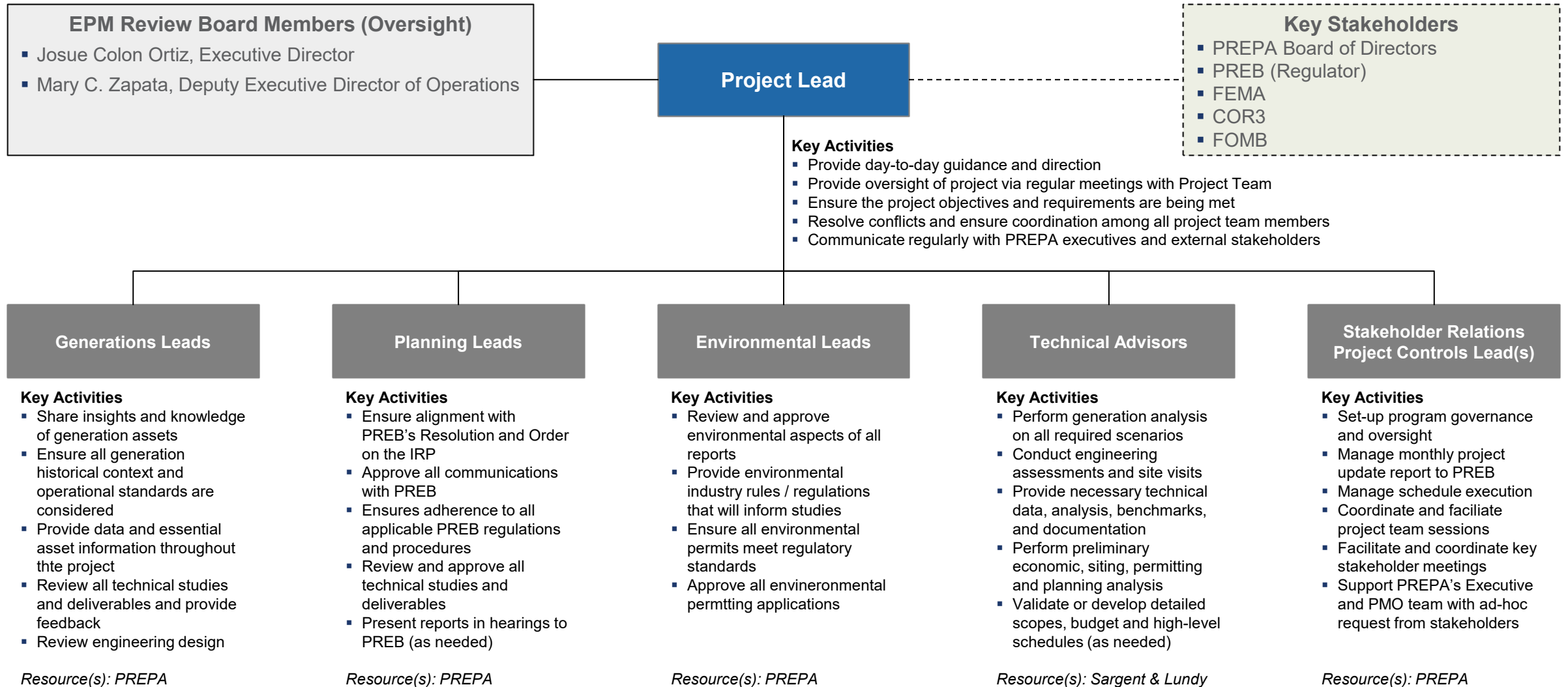
Project Benefits

- Protect against potential reliability concerns by continuing with these planning studies in parallel with the renewable procurement to follow PREB's approved Integrated Resource Plan (IRP) of August 24, 2020.
- Determine the most reliable, dispatchable 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

- No new requirements to report this month
- Planning Workstreams Tasks 1 through 6 will be reviewed and revised as needed based on updated power plant maintenance information
- A new timeline on page 4 of this presentation shows that by end of March 2022, the Planning Workstream is expected to be 100% completed and submitted to PREB by mid-April, 2022

New Combined Cycle Planning and Studies Monthly Progress Status Report January 15, 2022

ID	Task Name	Duration	Start	Finish	% Complete	Baseline Finish	Gantt Chart											
							Qtr 4, 2020 Oct Nov Dec	Qtr 1, 2021 Jan Feb Mar	Qtr 2, 2021 Apr May Jun	Qtr 3, 2021 Jul Aug Sep	Qtr 4, 2021 Oct Nov Dec	Qtr 1, 2022 Jan Feb Mar	Qtr 2, 2022 Apr May Jun	Qtr 3, 2022 Jul Aug Sep	Qtr 4, 2022 Oct Nov			
1	New Combined Cycle Planning and Studies Phase 1	359 days	11/16/2020	3/31/2022	65%	6/30/2021												
2	Planning Analysis Workstream	359 days	11/16/2020	3/31/2022	82%	6/15/2021												
3	Renewable Integration Study	359 days	11/16/2020	3/31/2022	89%	5/28/2021												
4	Retirement of Existing Thermal Resources Report	64 days	2/17/2021	5/17/2021	100%	5/17/2021												
5	Retirement of Existing Thermal Resources Report (Revised version)	88 days	11/30/2021	3/31/2022	0%	11/30/2021												
6	Environmental (Permitting) Due Diligence Report	335 days	12/18/2020	3/31/2022	84%	6/1/2021												
7	New Combined Cycle Power Plant Location Selection Report	335 days	12/18/2020	3/31/2022	88%	6/7/2021												
8	Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA	208 days	6/15/2021	3/31/2022	85%	6/15/2021												
9	Siting Workstream	121 days	1/11/2021	6/28/2021	100%	5/31/2021												
10	Geotechnical Investigation	85 days	1/11/2021	5/7/2021	100%	5/7/2021												
11	Site Survey	85 days	1/11/2021	5/7/2021	100%	5/7/2021												
12	Design Criteria Update	95 days	1/11/2021	5/21/2021	100%	5/21/2021												
13	General Arrangement	121 days	1/11/2021	6/28/2021	100%	5/21/2021												
14	Heat Balance Analysis	45 days	3/1/2021	4/30/2021	100%	4/30/2021												
15	Water Balance Analysis	5 days	3/1/2021	3/5/2021	100%	3/5/2021												
16	Flood Study	76 days	3/1/2021	6/14/2021	100%	5/28/2021												
17	Process Flow Diagrams (P&IDs)	55 days	3/1/2021	5/14/2021	100%	5/14/2021												
18	Single Line Diagram	75 days	2/1/2021	5/14/2021	100%	5/14/2021												
19	Architectural Conceptual Design	86 days	3/1/2021	6/28/2021	100%	5/14/2021												
20	Site Development Conceptual Design	86 days	3/1/2021	6/28/2021	100%	5/28/2021												
21	Site Grading and Drainage	76 days	3/15/2021	6/28/2021	100%	5/28/2021												
22	Major Foundation Conceptual Design	63 days	4/1/2021	6/28/2021	100%	5/28/2021												
23	Electrical Arrangements	86 days	3/1/2021	6/28/2021	100%	5/28/2021												
24	Permitting Workstream	287 days	1/11/2021	2/15/2022	15%	5/31/2021												
25	COE Environmental Application – Consultation	287 days	1/11/2021	2/15/2022	15%	5/31/2021												
26	Preliminary Economic	295 days	1/11/2021	2/25/2022	10%	6/28/2021												
27	Project Cost Estimate	295 days	1/11/2021	2/25/2022	10%	6/28/2021												
28	Project Schedule	295 days	1/11/2021	2/25/2022	10%	5/30/2021												
29	Close-out Workstream	186 days	6/28/2021	3/14/2022	0%	6/30/2021												
30	Final Report of all Deliverables Upon Completion for PREB	186 days	6/28/2021	3/14/2022	0%	6/28/2021												
31	New Combined Cycle Planning and Studies Phase 2	474 days	12/18/2020	10/12/2022	20%	10/29/2021												
32	Planning Analysis Workstream Phase 2	151 days	12/18/2020	7/16/2021	60%	10/29/2021												
33	10-Year Thermal Generation Retirement, Addition, and Conversion Plan*	322 days	12/18/2020	3/14/2022	60%	10/29/2021												
34	Siting Workstream Phase 2	215 days	5/3/2021	2/25/2022	0%	8/13/2021												
35	3D Model	215 days	5/3/2021	2/25/2022	0%	8/13/2021												
36	Permitting Workstream Phase 2	305 days	1/11/2021	3/11/2022	15%	8/31/2021												
37	NEPA EA Report – Consultation	305 days	1/11/2021	3/11/2022	15%	8/31/2021												
38	Air Permit Application – Consultation	305 days	1/11/2021	3/11/2022	15%	8/31/2021												
39	NPDES Permit Application – Consultation	305 days	1/11/2021	3/11/2022	15%	8/31/2021												
40	Close-out Workstream Phase 2	305 days	8/12/2021	10/12/2022	0%	10/12/2021												
41	New Combined Cycle Planning and Studies Phase One Results Submitted to COR3	262 days	8/12/2021	8/12/2022	0%	8/12/2021												
42	New Combined Cycle Planning and Studies Phase One Results Submitted to FEMA	261 days	10/12/2021	10/12/2022	0%	10/12/2021												