

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

NEPR

Received:

May 17, 2021

3:34 PM

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

CASE NO.: NEPR-MI-2021-0003

SUBJECT: Motion to Submit May 2021
Status Report

**MOTION TO SUBMIT MAY 2021 STATUS REPORT IN COMPLIANCE
WITH ORDER ENTERED ON FEBRUARY 1, 2021**

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

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

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. In compliance with the Order, the Authority herein submits the report titled *New Combined Cycle Planning and Studies Monthly Progress Status Report* dated May 15, 2021 (the “Status Report”). Exhibit A. The Status Report outlines and details the Authority’s progress in the development of the studies.

WHEREFORE, the Authority respectfully requests the Energy Bureau to determine that the Authority has complied with the Order.

RESPECTFULLY SUBMITTED.

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

/s Katuska Bolaños-Lugo

Katuska Bolaños-Lugo

kbolanos@diazvaz.law

TSPR 18,888

Joannely Marrero-Cruz

jmarrero@diazvaz.law

TSPR 20,014

DÍAZ & VÁZQUEZ LAW FIRM, P.S.C.

290 Jesús T. Piñero Ave.

Oriental Tower, Suite 803

San Juan, PR 00918

Tel.: (787) 395-7133

Fax. (787) 497-9664

Exhibit A

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



**Puerto Rico
Electric Power
Authority**

Puerto Rico Electric Power Authority (PREPA)

New Combined Cycle Planning and Studies
Monthly Progress Status Report
May 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.

Report Outline	Page #
▪ Introduction and Outline.....	2
▪ New Requirements and Project Re-Baseline Summary.....	3
▪ Project Overview.....	4
▪ Project Tasks By Workstream.....	5
▪ Project Tasks By Workstream – Phase 2.....	8
▪ Appendix.....	9

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 Integration Study (Task 1) should be completed, evaluated, and considered within the subsequent during 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 is end of May 2021).
 - 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 is June 28, 2021.**
 - 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.**

Project Overview

Management Notes:

- PREPA and S&L have determined that to develop an indicative cost estimate for this project, existing plant foundation and geological information can be used, and not require a full Geotechnical Investigation (Task 6). Thus, this task is now completed.
- Due to the external dependencies impacting the project as stated above, Tasks 1-5 on page/slide 8 have been moved to Phase 2.
- The New Combined Cycle Power Plant Location Selection Report and 10-Year Thermal Generation Retirement, Addition, and Conversion Plan were drafted are pending the results of the SIP and Task 1.

Financials

Approved Budget Baseline	\$5,000,000
Total Expenses From Previous Periods	\$565,058
Expenses This Period	\$161,708
Total Expenses	\$726,766
Total Expenses / Approved Budget Baseline	14.5%

Scope

57%

Planning Analysis

77%

In Progress

On-Budget On-Schedule

Siting

58%

In Progress

On-Budget On-Schedule

Permitting

15%

In Progress

On-Budget On-Schedule

Preliminary Economic

10%

In Progress

On-Budget On-Schedule

Max. Monthly Headcount (based on March)



11

PREPA's Headcount



7

Contractor's Headcount

18

Max. Total Headcount

Schedule Metrics

11/16/2020

Project Start Date

23

Total Scheduled Tasks

19

Pending Tasks On-Track

6/28/2021

Project End Date

4

YTD Tasks Completed

0

Pending Tasks Delayed

74%

Time Elapsed

14

Tasks Due in May

0

Pending Tasks Overdue

Significant Upcoming Milestones

Description	Target Period
Determine the effect of the renewables' growth in the grid and its potential solutions	2021 Q2
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



Puerto Rico Electric Power Authority

Report Submitted as of May 15, 2021

Project Tasks By Workstream

ID	Task Description	% Complete	Scheduled Start	Scheduled / Actual Finish	Status
Planning Analysis Workstream					
1	Renewable Integration Study	60%	11/16/2020	5/28/2021	On Track
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>	75%	2/17/2021	5/17/2021	On Track
3	Environmental (Permitting) Due Diligence Report	95%	12/18/2020	6/1/2021	On Track
4	New Combined Cycle Power Plant Location Selection Report	80%	12/18/2020	6/7/2021	On Track
5	Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA (Milestone)	0%	6/15/2021	6/15/2021	On Track
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	90%	1/11/2021	5/21/2021	On Track
9	General Arrangement	20%	1/11/2021	5/21/2021	On Track

Report Submitted as of May 15, 2021

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	0%	3/1/2021	5/28/2021	On Track
13	Process Flow Diagrams (P&IDs)	80%	3/1/2021	5/14/2021	On Track
14	Single Line Diagram	80%	2/1/2021	5/14/2021	On Track
15	Architectural Conceptual Design	35%	3/1/2021	5/14/2021	On Track
16	Site Development Conceptual Design	50%	3/1/2021	5/28/2021	On Track
17	Site Grading and Drainage	50%	3/15/2021	5/28/2021	On Track
18	Major Foundation Conceptual Design	50%	4/1/2021	5/28/2021	On Track
19	Electrical Arrangements	50%	3/1/2021	5/28/2021	On Track



Report Submitted as of May 15, 2021

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	5/31/2021	On Track
Preliminary Economic Workstream					
21	Project Cost Estimate – Full Combined Cycle Project	10%	1/11/2021	6/28/2021	On Track
22	Project Schedule – Full Combined Cycle Project	10%	1/11/2021	5/30/2021	On Track
Close-Out Tasks					
23	Final Report of all Deliverables Upon Completion for PREB (Milestone)	0%	6/28/2021	6/28/2021	On Track



Report Submitted as of May 15, 2021

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.



Puerto Rico Electric
Power Authority

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 is scheduled from November 16, 2020 to June 28, 2021.

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.

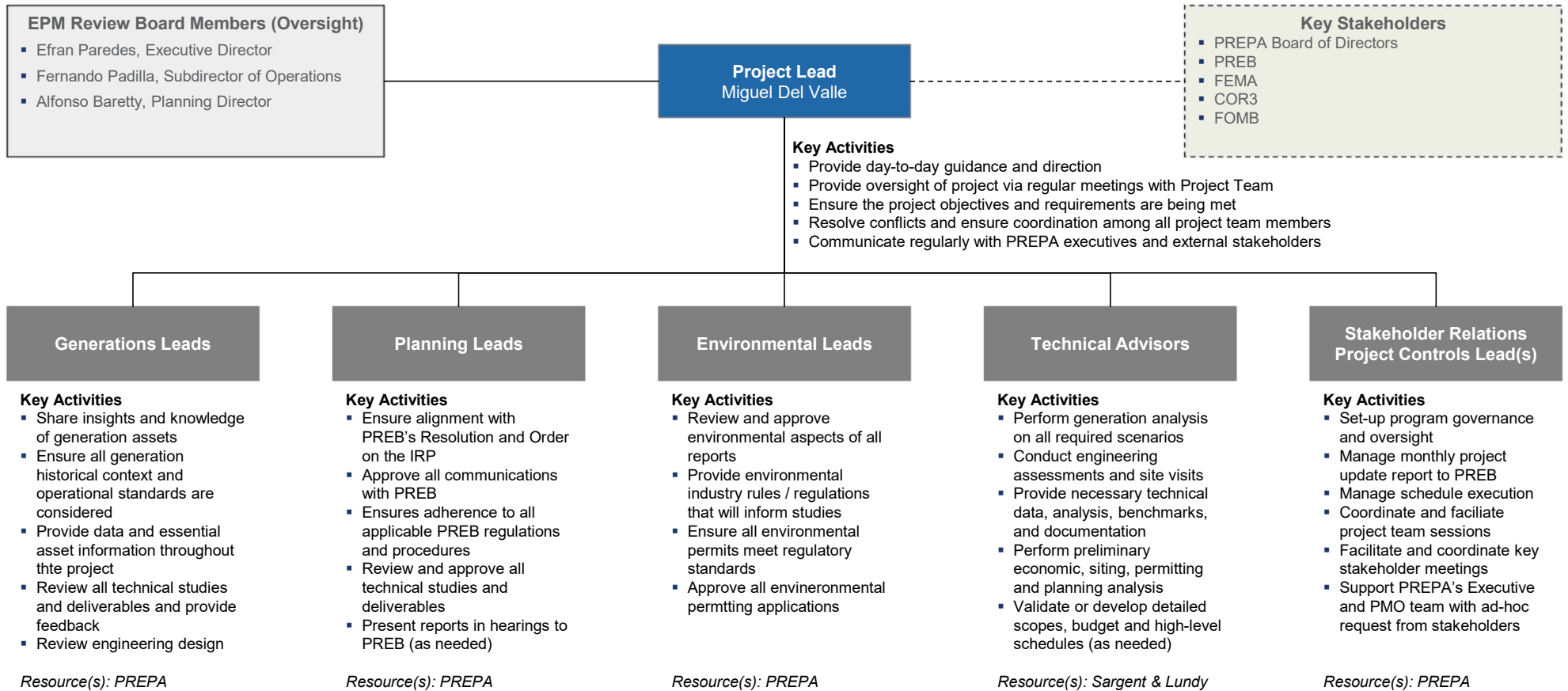
Project Benefits

- 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 solution¹ for the northern part of the island.
- Determine the most optimal generation solution¹ that mitigates the hazards from major catastrophic events (e.g., hurricanes and earthquakes).

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



Project Organization Structure



New Combined Cycle Planning and Studies Monthly Progress Status Report May 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
1	New Combined Cycle Planning and Studies Phase 1	161 days	Mon 11/16/20	Mon 6/28/21	57%	Wed 6/30/21													
2	Planning Analysis Workstream	151 days	Mon 11/16/20	Tue 6/15/21	77%	Tue 6/15/21													
3	Renewable Integration Study	140 days	Mon 11/16/20	Fri 5/28/21	60%	Fri 5/28/21													
4	Retirement of Existing Thermal Resources Report	64 days	Wed 2/17/21	Mon 5/17/21	75%	Mon 5/17/21													
5	Environmental (Permitting) Due Diligence Report	118 days	Fri 12/18/20	Tue 6/1/21	95%	Tue 6/1/21													
6	New Combined Cycle Power Plant Location Selection Report	122 days	Fri 12/18/20	Mon 6/7/21	80%	Mon 6/7/21													
7	Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA	0 days	Tue 6/15/21	Tue 6/15/21	0%	Tue 6/15/21													◆ 6/15
8	Siting Workstream	101 days	Mon 1/11/21	Mon 5/31/21	58%	Mon 5/31/21													
9	Geotechnical Investigation	85 days	Mon 1/11/21	Fri 5/7/21	100%	Fri 5/7/21													
10	Site Survey	85 days	Mon 1/11/21	Fri 5/7/21	100%	Fri 5/7/21													
11	Design Criteria Update	95 days	Mon 1/11/21	Fri 5/21/21	90%	Fri 5/21/21													
12	General Arrangement	95 days	Mon 1/11/21	Fri 5/21/21	20%	Fri 5/21/21													
13	Heat Balance Analysis	45 days	Mon 3/1/21	Fri 4/30/21	100%	Fri 4/30/21													
14	Water Balance Analysis	5 days	Mon 3/1/21	Fri 3/5/21	100%	Fri 3/5/21													
15	Flood Study	65 days	Mon 3/1/21	Fri 5/28/21	0%	Fri 5/28/21													
16	Process Flow Diagrams (P&IDs)	55 days	Mon 3/1/21	Fri 5/14/21	80%	Fri 5/14/21													
17	Single Line Diagram	75 days	Mon 2/1/21	Fri 5/14/21	80%	Fri 5/14/21													
18	Architectural Conceptual Design	55 days	Mon 3/1/21	Fri 5/14/21	35%	Fri 5/14/21													
19	Site Development Conceptual Design	65 days	Mon 3/1/21	Fri 5/28/21	50%	Fri 5/28/21													
20	Site Grading and Drainage	55 days	Mon 3/15/21	Fri 5/28/21	50%	Fri 5/28/21													
21	Major Foundation Conceptual Design	42 days	Thu 4/1/21	Fri 5/28/21	50%	Fri 5/28/21													
22	Electrical Arrangements	65 days	Mon 3/1/21	Fri 5/28/21	50%	Fri 5/28/21													
23	Permitting Workstream	101 days	Mon 1/11/21	Mon 5/31/21	15%	Mon 5/31/21													
24	COE Environmental Application – Consultation	101 days	Mon 1/11/21	Mon 5/31/21	15%	Mon 5/31/21													
25	Preliminary Economic	121 days	Mon 1/11/21	Mon 6/28/21	10%	Mon 6/28/21													
26	Project Cost Estimate	121 days	Mon 1/11/21	Mon 6/28/21	10%	Mon 6/28/21													
27	Project Schedule	101 days	Mon 1/11/21	Sun 5/30/21	10%	Sun 5/30/21													
28	Close-out Workstream	0 days	Mon 6/28/21	Mon 6/28/21	0%	Wed 6/30/21													◆ 6/28
29	Final Report of all Deliverables Upon Completion for PREB	0 days	Mon 6/28/21	Mon 6/28/21	0%	Mon 6/28/21													◆ 6/28
30	New Combined Cycle Planning and Studies Phase 2	226 days	Fri 12/18/20	Fri 10/29/21	32%	Fri 10/29/21													
31	Planning Analysis Workstream Phase 2	226 days	Fri 12/18/20	Fri 10/29/21	80%	Fri 10/29/21													
32	Thermal Generation Retirement, Addition, and Conversion Plan	226 days	Fri 12/18/20	Fri 10/29/21	80%	Fri 10/29/21													
33	Siting Workstream Phase 2	75 days	Mon 5/3/21	Fri 8/13/21	0%	Fri 8/13/21													
34	3D Model	75 days	Mon 5/3/21	Fri 8/13/21	0%	Fri 8/13/21													
35	Permitting Workstream Phase 2	167 days	Mon 1/11/21	Tue 8/31/21	15%	Tue 8/31/21													
36	NEPA EA Report – Consultation	167 days	Mon 1/11/21	Tue 8/31/21	15%	Tue 8/31/21													
37	Air Permit Application – Consultation	167 days	Mon 1/11/21	Tue 8/31/21	15%	Tue 8/31/21													
38	NPDES Permit Application – Consultation	167 days	Mon 1/11/21	Tue 8/31/21	15%	Tue 8/31/21													
39	Close-out Workstream Phase 2	44 days	Thu 8/12/21	Tue 10/12/21	0%	Tue 10/12/21													
40	New Combined Cycle Planning and Studies Phase One Results Submitted to COR3	1 day	Thu 8/12/21	Thu 8/12/21	0%	Thu 8/12/21													
41	New Combined Cycle Planning and Studies Phase One Results Submitted to FEMA	0 days	Tue 10/12/21	Tue 10/12/21	0%	Tue 10/12/21													◆ 10/12