

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

NEPR

Received:

Nov 15, 2021

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

CASE NO.: NEPR-MI-2021-0003

SUBJECT: Motion to Submit November
2021 Status Report in Compliance with Order
Entered on February 1, 2021

**MOTION TO SUBMIT NOVEMBER 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 (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 (the “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.

2. To date, PREPA has submitted a total of eight (8) status reports. *See* case of caption docket in general.

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

4. On October 15, 2021, PREPA filed with the Energy Bureau the *Motion to Submit October 2021 Status Report in Compliance with Order Entered on February 1, 2021* (the “October Report”). In the October Report, PREPA mentioned that all tasks listed in the Planning Analysis

Workstreams were completed and expected to be submitted to the Energy Bureau by the end of October 2021. *See* October Report, Exhibit A, p. 3, Management Notes. However, 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.

5. A revised Retirement of Existing Thermal Resources Report will be prepared¹ to align the new generation asset strategy. This report is expected to be completed between the 1st and 2nd quarters of 2022, once the architecture and engineering consultant is authorized to start the revision of the original retirement report submitted to PREPA in May 2021.

6. Tasks 1, 3 – 6 are expected to be completed during the 1st and 2nd quarters of 2022.

7. Further, PREPA plans to request the Energy Bureau to continue with the combined cycle project in the north, FEMA 404 Phase I — Engineering (only) due in October 2022. This request will be done in due course.

WHEREFORE, PREPA respectfully requests the Energy Bureau to determine that PREPA continues to comply with the Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 15th day of November 2021.

/s/ Katiuska Bolaños-Lugo
Katiuska Bolaños-Lugo
kbolanos@diazvaz.law
TSPR 18,888

/s/ Joannely Marrero Cruz
Joannely Marrero-Cruz
jmarrero@diazvaz.law
TSPR 20,014

¹ *See* Exhibit A, p. 4, Planning Analysis Workstream, task 3.

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 November 15,2021



**Puerto Rico
Electric Power
Authority**

Puerto Rico Electric Power Authority (PREPA)

**New Combined Cycle Planning and Studies
Monthly Progress Status Report
November 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.

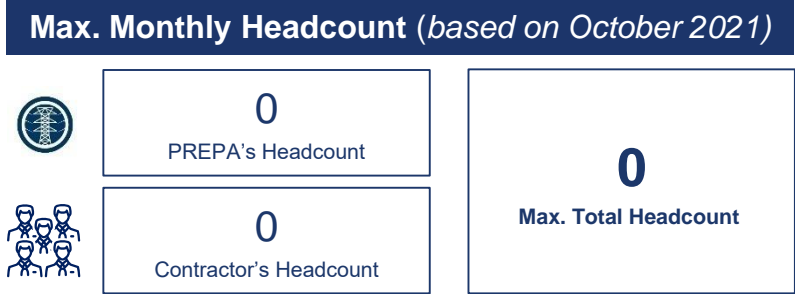
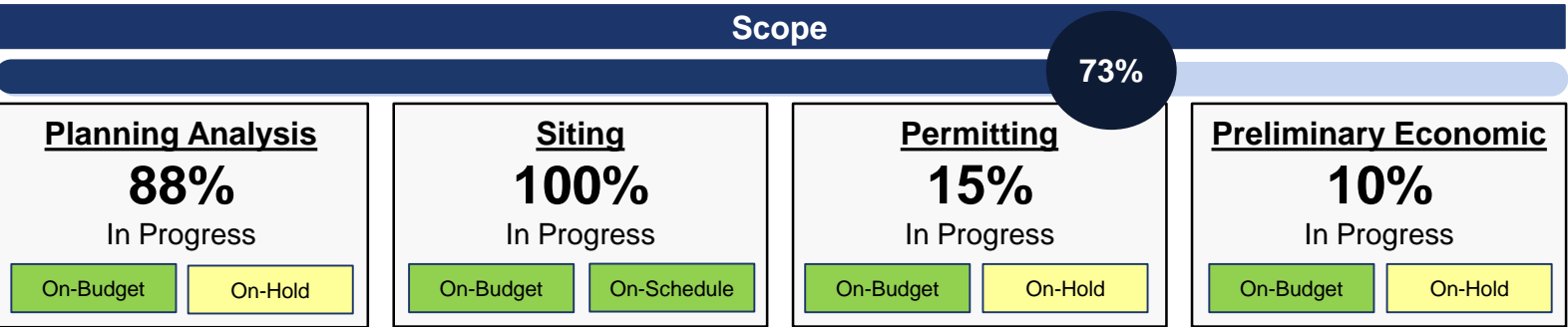
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Project Overview

Management Notes:

- In the October 15, 2021, monthly report it was mentioned that all tasks listed in the Planning Analysis Workstreams were completed and expected to be submitted to PREB by the end of October 2021. This was not done due to a change in the strategy to retire thermal generation assets. This includes the retirement and life extension of existing legacy generation units and the addition of new generation currently under evaluation as part of the FEMA 404 and 428 program.
- A revised Retirement of Existing Thermal Resources Report will be prepared (NEW Task 3) to align the new generation asset strategy as directed by PREPA. This report is expected to be completed by 1st or 2nd Quarter in 2022 once the A/E consultant is release to start the new revision of the original retirement report submitted in May 2021 (Task 2)
- Currently the A/E consultant’s contract is on hold, so no work is being performed until PREPA signs the authorization to proceed. The due dates to complete Tasks 1, 3 – 6 is expected to be completed 1st or 2nd Qtr 2022.
- A request to continue with the combined cycle project in the north, FEMA 404 Phase I — Engineering (only) due in October 2022, will be filed with the PREB.

| 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 |
| 03/15/2022 Project End Date | 15 YTD Tasks Completed | 11 Pending Tasks On-Hold |
| 79% Time Elapsed | 0 Tasks Due in November | 1 New Task |

| Significant Upcoming Milestones | |
|--|---------------|
| Description | Target Period |
| Prepare proposed relocation of the new combined cycle and present to stakeholders | 2021 Q3 |
| Determine the effect of the renewables' growth in the grid and its potential solutions | 2021 Q3 |
| Finalize the Renewable Integration Study and Submit to PREB | 2021 Q3 |
| Determine Project Schedule and Cost Estimate for the Full Combined Cycle Project | 2021 Q4 |



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 | 2/25/2022 | Delayed |
| 2 | Retirement of Existing Thermal Resources Report – Updated every 6 months after initial release (Reference in Final IRP O&R – Pg. 270, ¶¶ 869-878) | 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 (Reference in Final IRP O&R – Pg. 270, ¶¶ 869-878) | 0% | 11/30/2021 | 3/15/2022 | New TASK |
| 4 | Environmental (Permitting) Due Diligence Report | 90% | 12/18/2020 | 2/25/2022 | Delayed |
| 5 | New Combined Cycle Power Plant Location Selection Report | 95% | 12/18/2020 | 2/25/2022 | Delayed |
| 6 | Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA (Milestone) | 90% | 6/15/2021 | 3/15/2022 | Delayed |
| 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* (Draft released to PREPA December 30, 2020) | 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-October 2021.
- 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.

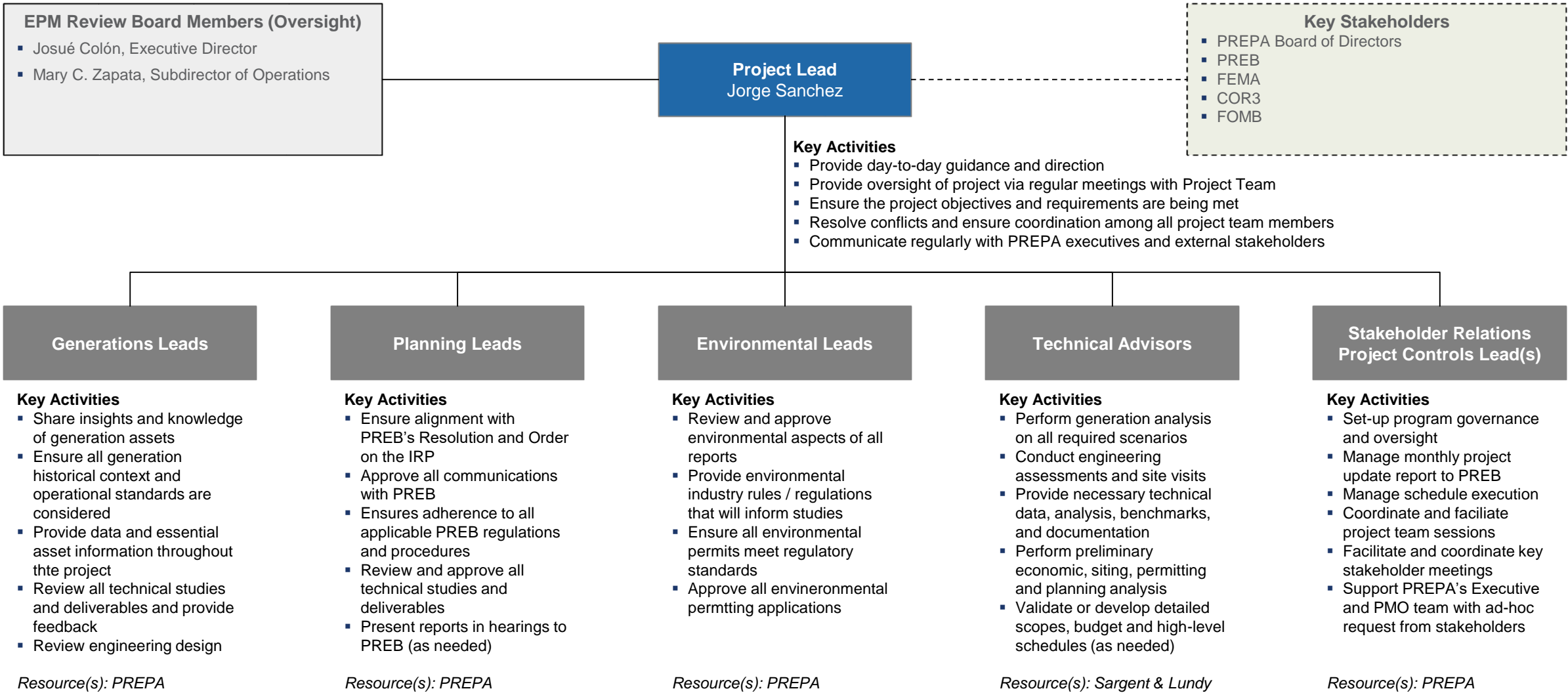
Project Benefits

- Protect against 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

- In the October 15, 2021, monthly report it was mentioned that all tasks listed in the Planning Analysis Workstreams were completed and expected to be submitted to PREB by the end of October 2021. This was not done due to a change in the strategy to retire thermal generation assets. This includes the retirement and life extension of existing legacy generation units and the addition of new generation currently under evaluation as part of the FEMA 404 and 428 program.
- A revised Retirement of Existing Thermal Resources Report will be prepared (NEW Task 3) to align the new generation asset strategy as directed by PREPA. This report is expected to be completed by 1st or 2nd Quarter in 2022 once the A/E consultant is released to start the new revision of the original retirement report submitted in May 2021 (Task 2).

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

| ID | Task Name | Duration | Start | Finish | % Complete | Baseline Finish | 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 | 347 days | 11/16/2020 | 3/15/2022 | 67% | 6/30/2021 | | | | | | | | | |
| 2 | Planning Analysis Workstream | 347 days | 11/16/2020 | 3/15/2022 | 88% | 6/15/2021 | | | | | | | | | |
| 3 | Renewable Integration Study | 335 days | 11/16/2020 | 2/25/2022 | 95% | 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 (NEW revision required based on new strategy) | 76 days | 11/30/2021 | 3/15/2022 | 0% | 11/30/2021 | | | | | | | | | |
| 6 | Environmental (Permitting) Due Diligence Report | 311 days | 12/18/2020 | 2/25/2022 | 90% | 6/1/2021 | | | | | | | | | |
| 7 | New Combined Cycle Power Plant Location Selection Report | 311 days | 12/18/2020 | 2/25/2022 | 95% | 6/7/2021 | | | | | | | | | |
| 8 | Feasibility Study, Environmental Due Diligence Report, and Location Selection Report Approval From PREPA | 196 days | 6/15/2021 | 3/15/2022 | 90% | 6/15/2021 | | | | | | | | | |
| 9 | Siting Workstream | 287 days | 1/11/2021 | 2/15/2022 | 82% | 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 | | | | | | | | | |