

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

**NEPR**

**Received:**

**Dec 15, 2022**

**9:19 PM**

IN RE:  
LUMA'S RESPONSE TO HURRICANE  
FIONA

**CASE NO. NEPR-MI-2022-0003**

**SUBJECT: Fourth Update on Stabilization Plan and  
Request to Release LUMA from the Requirement to  
File an Update on January 2, 2023**

**FOURTH UPDATE ON STABILIZATION PLAN FOR TEMPORARY EMERGENCY  
GENERATION CAPACITY AND REQUEST TO RELEASE LUMA FROM THE  
REQUIREMENT TO FILE AN UPDATE ON JANUARY 2, 2023**

**TO THE HONORABLE PUERTO RICO ENERGY BUREAU:**

**COME NOW LUMA Energy, LLC** ("ManagementCo"), and **LUMA Energy ServCo, LLC** ("ServCo"), (jointly referred to as "LUMA"), and respectfully state the following:

1. In a Resolution and Order of October 7, 2022 ("October 7<sup>th</sup> Order") with the subject "Baseload Generation Dispatch Status-Post Hurricane Fiona," this honorable Puerto Rico Energy Bureau ("Energy Bureau") convened a Technical Conference to discuss concerns raised by LUMA in a letter dated October 6, 2022 regarding Resource Adequacy and potential Generation resource deficiencies following Hurricane Fiona. Per the October 7<sup>th</sup> Order, the topics to be discussed at the Technical Conference were "Dispatch Status of the available Baseload Generation post Hurricane Fiona and (ii) the identified temporary emergency mitigation measures thought to address the generation deficiencies arising from Hurricane Fiona."<sup>1</sup>

2. On October 12, 2022, the Energy Bureau entered a Resolution and Order whereby it ordered LUMA to develop a stabilization plan as a direct response to Hurricane Fiona, in coordination with the Federal Emergency Management Agency ("FEMA") and the Puerto Rico

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<sup>1</sup> The Technical Conference was held as scheduled on October 11, 2022. During the Technical Conference, the Energy Bureau and consultants for the Energy Bureau posed questions to LUMA's representatives.

Electric Power Authority (“PREPA”) “to address any baseload generation inadequacy or shortfall that affects the dispatch availability and has the potential to cause load shedding or a blackout event of the electric system (“Stabilization Plan”)” (“October 12<sup>th</sup> Order”).

3. Per the October 12<sup>th</sup> Order, LUMA was directed to submit the 1<sup>st</sup> and the 15<sup>th</sup> day of each month from the notice of the Order, an updated report addressing the efforts conducted by LUMA to assure the completion of the Stabilization Plan. As per the October 12<sup>th</sup> Order, therefore, the first of such reports is due on November 1, 2022.

4. On October 27<sup>th</sup>, 2022, the Energy Bureau issued a Resolution and Order whereby it set a technical conference for November 1, 2022 (“October 27<sup>th</sup> Order”) in connection with the first update on the Stabilization Plan. The Energy Bureau stated that it is particularly interested in “learning about the (1) U.S. Army Corps of Engineers (“USACE”) Generation Assessment underway, (2) Emergency Temporary Generation under a potential FEMA Public Assistance Emergency assignment that can expeditiously mitigate the impact of Hurricane Fiona, and (3) Replacement of Emergency Temporary Generation that seeks to phase out the temporary generation with permanent capacity, noting that this permanent capacity is consistent with the approved Integrated Resource Plan (“IRP”).” *See* October 27<sup>th</sup> Order at page 1. As per the October 27<sup>th</sup> Order, the Technical Conference was held as scheduled on November 1<sup>st</sup>. LUMA representatives appeared to discuss the Stabilization Plan and answered questions by this Energy Bureau.

5. On October 31<sup>st</sup>, 2022, LUMA submitted the First Update on the Stabilization Plan.

6. On November 15, 2022, LUMA submitted a Second Update on the Stabilization Plan (“Second Update”). In addition, LUMA submitted supplemental information to the Second Update arising from a joint press conference of November 15<sup>th</sup>, 2022, where the Governor of

Puerto Rico, the Hon. Pedro Pierluisi and the Federal Coordinator for the Federal Emergency Management Agency (“FEMA”), Nancy Casper, announced that FEMA’s power stabilization initiative aims to install between 600 to 700 MW of temporary emergency generation capacity through the mobilization of power generation maritime barges and temporary land-based generators. *See Supplemental Submission to Second Update on Stabilization Plan to Inform of Announcement by the Puerto Rico Government and FEMA on Temporary Emergency Generation Capacity*, filed on November 15, 2022

7. On December 1<sup>st</sup>, 2022, LUMA submitted the Third Update on the Stabilization Plan.

8. In further compliance with the October 12<sup>th</sup> Order, LUMA hereby submits the Fourth Update on the Stabilization Plan (“Fourth Update”). *See Exhibit 1* (Update of December 15, 2022). The Fourth Update includes, among others, a summary of the status of Stabilization Plan with reference to the tasks performed in the past two weeks in coordination with FEMA and PREPA, as well as a summary of LUMA’s internal efforts. Furthermore, the Fourth Update identifies current operational issues and concerns and provides an update on LUMA’s risk analyses.

9. It is respectfully requested that this Energy Bureau release LUMA from the requirement to file an Update to the Stabilization Report on January 2, 2023. In consideration of the upcoming Christmas and New Year’s holidays observed in Puerto Rico and by LUMA and its workforce, LUMA’s personnel will enjoy vacation time. Although LUMA will continue to work with governmental partners in the Stabilization Plan, the legal holidays will limit available time and LUMA’s ability to prepare and file the Update to the Stabilization Report that is due on January 2, 2023. Thus, LUMA requests that this Energy Bureau rule that the next Update to the

Stabilization Plan shall be filed on January 15, 2023. If new developments on the Stabilization Plan arise between today and the January 15<sup>th</sup> Update, LUMA will timely inform this Energy Bureau.

**WHEREFORE**, LUMA respectfully requests that this Energy Bureau **take notice** of the aforementioned, **accept** the Fourth Update submitted as **Exhibit 1** to this Motion, **deem** that LUMA complied with that portion of the October 12th Order that requires submission of bi-monthly updated reports on the Stabilization Plan, **release** LUMA from the requirement to file an Update to the Stabilization Plan on January 2, 2023, and **rule** that the next Update to the Stabilization Plan is due on January 15, 2023.

**RESPECTFULLY SUBMITTED.**

In San Juan, Puerto Rico, this 15<sup>th</sup> day of December, 2022.

I hereby certify that this motion was filed using the electronic filing system of this Energy Bureau. I also certify that copy of this motion will be notified to the Puerto Rico Electric Power Authority, through its attorneys of record: [jmarrero@diazvaz.law](mailto:jmarrero@diazvaz.law) and [kbolanos@diazvaz.law](mailto:kbolanos@diazvaz.law).



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*Exhibit 1*  
*Fourth Update on Stabilization Report*



# Generation Stabilization Plan Discussion

December 15, 2022

# Agenda

- I. Executive Summary of Generation Stabilization Plan (GPS) Status
- II. Past Two Weeks Area of Focus
- III. Generation Operational Issues and Concerns as of Report Date
- IV. Risk Analysis Update

# Executive Summary of Generation Stabilization Plan (GSP) Status

- Coordination between FEMA, LUMA and PREPA is progressing well. Joint planning meetings have focused on specific near-term priorities, including:
  - **Cost Recovery** – High level discussions to ensure all parties are aligned behind FEMA cost management requirements. Early focus has been on the need to carefully document and manage scope to ensure cost recovery under FEMA requirements
  - **Field Assessments** – Site visits to key generation and substation locations to better understand injection capabilities. Currently focused on physical constraints such as transformer capacity, space constraints and feasibility to upgrade
  - **Environmental** – Discussions of permitting requirements and timelines to support emergency generation
- FEMA procurement of emergency generation assets
  - Targeting 600 MW
  - Identified several candidates (land and barge mounted) and is pursuing commercial availability and logistics to bring to Puerto Rico
  - Injection limits and optimal site deployment being evaluated in parallel.
  - Optimized matching of generators to specific sites will occur once delivery is secured





# Past Two Weeks Area of Focus - Stakeholder Coordination

## **Repeated site visits with teams from FEMA/LUMA/PREPA**

- First round of site visits in early November were led by US Army Corps of Engineers to assess damages from Fiona
- Second round of site visits supported preliminary screening of locations to determine feasibility to inject into system
- Current site visits include more detailed assessments and field verifications to understand constraints in greater detail

## **LUMA coordinating with existing capital plans and system planning studies for each location**

- LUMA has expressed reservations with expanding capacity at the Costa Sur location due to concerns about increasing risk exposure to a single point of failure
- Reviewing engineering studies completed or underway before Fiona for each substation site and equipment assets to understand impact on deployment
- Reviewing schedules for repairs or upgrades or refurbishments at each location to identify ability to support emergency generation deployment timeline

## **PREPA supporting reviews of existing generation locations and ability to support deployment**

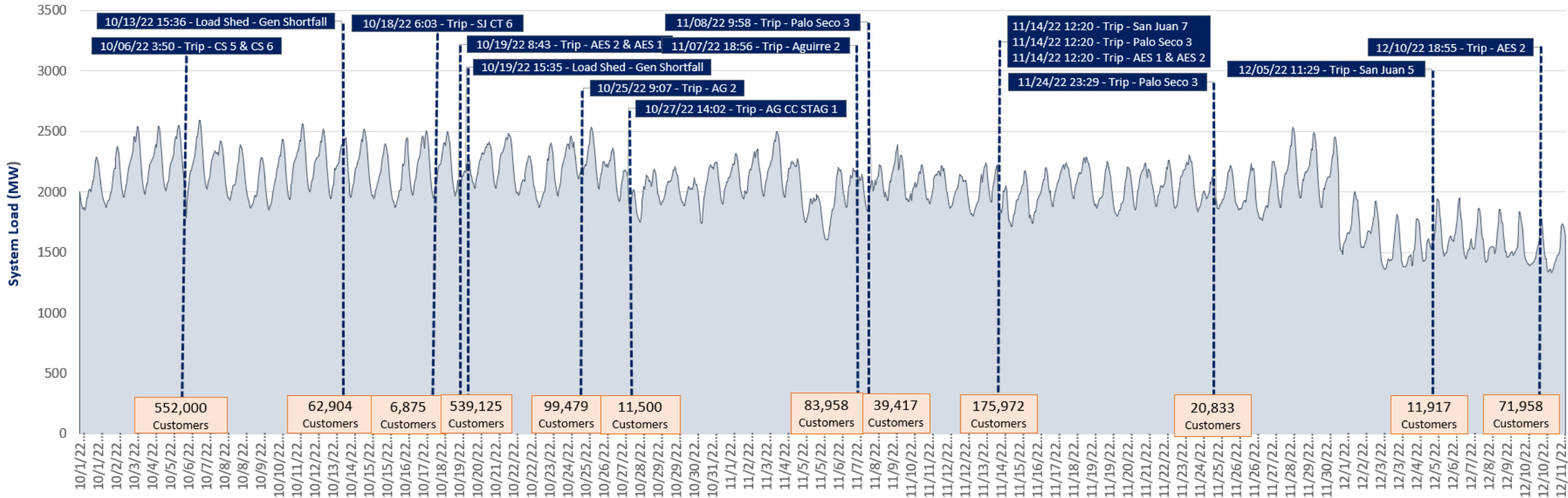
- PREPA facilitating visits to identify space constraints, available substation bays, and transformer limits
- Evaluating potential feasibility to share/coordinate interconnections among the different units at each site

**FEMA, LUMA and PREPA reviewing and discussing alternatives, prioritization, and timelines with common goal of matching emergency generation assets to optimal locations**



# Thirteen Load Shed Events Have Occurred Since October 1, 2022

Generation Load Shed Events



- Two separate events occurred on October 19<sup>th</sup> resulting in load shed. One at 08:43 and one at 15:35
- Three separate events occurred simultaneously on November 14<sup>th</sup> resulting in load shed

# Generation Planned Outages as of December 8, 2022

- PREPA's ability to successfully implement required planned outages on schedule remains the largest risk factor. Several PREPA plant outages are rescheduled each week which raises concerns about whether adequate pre-planning and parts requisitions will have been done to complete the outages on schedule (industry practices and SOP requirements are that major outages should be scheduled with 18-month lead time)
- Plant availability during March is emerging as a key period of risk to not have multiple units in outage. In addition, several other outages that have been deferred will now happen a few months later when generation reserves will be tight due to higher demand
- Concerns are being raised now regarding AES's insistence of taking a Unit 2 outage in summer months despite PPOA restrictions on scheduling outages between April to September without prior written consent of operator. LUMA and AES will continue to work to resolve this contractual dispute before the summer hurricane season

Unit Name	2022												2023												Changes From Last Update (Rev. 2022-10-28)
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
▷ Aguirre 1																									Forced Outage extended one month
▷ Aguirre 2																									Forced Outage of Nov 2023 moved to begin one week earlier
▷ Costa Sur 5																									Planned Outage of Feb 2023 moved to begin Jun 2023
▷ Costa Sur 6																									Planned Outage of Jun 2023 moved to begin Apr 2023
▷ Palo Seco 3																									Planned Outage of Mar 2023 moved to begin Apr 2023
▷ Palo Seco 4																									Planned Outage of Jul 2023 extended one week
▷ San Juan CT 5																									Planned Outage of Dec 2022 moved to begin one week later
▷ San Juan STM 5																									Planned Outage of Dec 2022 extended three weeks
▷ San Juan CT 6																									
▷ San Juan STM 6																									
▷ San Juan 7																									Planned Outage of Dec 2022 moved to begin one week later
▷ San Juan 8																									
▷ San Juan 9																									
▷ San Juan 10																									
▷ AES 1																									Planned Outage of Feb 2023 moved to begin two weeks earlier
▷ AES 2																									
▷ EcoElectrica 1																									
▷ EcoElectrica 2																									
▷ EcoElectrica STM																									

Forced Outages

Planned Outages

Out of Service

# Risk Analysis – Observations to date

- Resource adequacy concerns and risks of load shed expressed in LUMA letter to PREB on October 6<sup>th</sup> continue to exist
  - October experienced six load shed events versus 18 modeled in October 6<sup>th</sup> to support letter to PREB during Fiona restoration primarily; This improvement resulted from deferring maintenance outage previously scheduled for October, and the temporary availability of the Mega-Gen units at Palo Seco
  - November load shed events occurred essentially as modeled, with four events occurring versus 4 modeled resulting from continued deferral of planned maintenance outages and cooler weather lowering demand
  - The current 90-day outlook (Dec-Jan-Feb) is modeled to experience less than one load shed event per month as the winter significantly reduces demand. Note that this will be temporary for winter and does not imply generation availability is increasing or the emergency conditions are fading
- Increasing concerns exist about the generation portfolio's availability for the month of March and ability to complete scheduled outages as warmer weather begins to increase demand
  - System Operations is coordinating outage scenarios closely with PREPA, AES, and EcoElectrica in order to reduce LOLE and to distribute planned outages
  - The urgency of the original need for emergency generation was partially to provide resources to allow spring outages to be completed prior to summer hurricane season

# Risk Analysis – Observations to date

- This Loss of Load Expectation (LOLE) risk assessment reflects the modeled LOLE risk from October 1, 2022 through September 30, 2023. The model is updated weekly:
  - Modeled expectations for future time periods until September 30, 2023 are updated to reflect current outage schedules, load demand, and plant damage assessments and availabilities.
  - Modeled values for past time periods are replaced with actual values to make a more accurate representation of LOLE risks during the same 12-month time period for comparison and trending purposes
- The overall LOLE risk remains consistent since analysis conducted immediately after Fiona. Most of the reduced LOLE is because several outages were deferred in October and LOLE occurrences were reduced as a result

