NEPR

Received:

Mar 6, 2025

4:38 PM

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

IN RE: PLAN PRIORITARIO PARA LA ESTABILIZACIÓN DE LA RED ELÉCTRICA	**CASE NO. NEPR-MI-2024-0005** **SUBJECT: Motion Submitting LUMA's Position Regarding Genera's Request for Expedited Approval of Emergency Generation Capacity Solutions**

MOTION SUBMITTING LUMA'S POSITION REGARDING GENERA'S REQUEST FOR EXPEDITED APPROVAL OF EMERGENCY GENERATION CAPACITY SOLUTIONS

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

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

1. On February 26, 2025, Genera PR, LLC ("Genera") filed with this Puerto Rico Energy Bureau of the Public Service Regulatory Board ("Energy Bureau") a document entitled *Request for Expedited Approval of Emergency Generation Capacity Solutions* ("Genera Request") in which Genera seeks the Energy Bureau's approval for Genera to enable the implementation of the following proposed options for temporary generation to "allow for critical maintenance to be performed on existing power plants while stabilizing the grid in the short term" and to "guarantee system stability while recovery projects are performed": (a) installing additional Temporary Mobile Generators of approximately 800 MW for 18 months; (b) substituting damaged units with pre-owned but functional generating units; and (c) deploying generation barges to supplement the power supply. *See Genera Request*, ¶ 6 and WHEREFORE.

2. On February 27, 2025, this Energy Bureau issued a Resolution and Order ("February 27th Order) whereby it determined that it was LUMA's responsibility, "as the system operator and energy dispatcher, to prepare and submit (supported by the necessary technical information) any request for additional generation within the framework of the adequacy of resources". *See* February 27th Order, p.1. (Translation ours.) The Energy Bureau then granted LUMA until March 6, 2025, at 5:00pm to present its position on the Request and, specifically, "the need for additional temporary generation, and the capacity thereof, if any, in light of the findings of the Resource Adequacy Report". The Resource Adequacy Report refers to a report prepared by LUMA titled *Puerto Rico Electrical System Resource Adequacy Analysis Report* and submitted to the Energy Bureau on October 31, 2024, in Case No. NEPR-MI-2022, *In re: LUMA Resource Adequacy Study*. The Energy Bureau also ordered Genera to immediately provide LUMA with any information that the latter deems necessary to comply with the February 27th Order. *Id*.

3. In compliance with the February 27th Order, LUMA hereby submits, as *Exhibit 1*, its position in regard to Genera's Request. Furthermore, LUMA submits, as *Exhibit 2*, a PowerPoint presentation which includes the charts and graphs referred to in *Exhibit 1*. Finally, LUMA informs that it has sent a written communication to Genera to set the stage for continued exchanges and coordination between the parties in connection with these proposed projects. We have submitted the aforementioned letter as *Exhibit 3*.

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned; **accept** *Exhibit 1* as LUMA's Position on Genera's Request for Expedited Approval of Emergency Generation Capacity Solutions; and **deem** LUMA in compliance with the February 27th Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 6th day of March 2025.

We hereby certify that we filed this notice and request using the electronic filing system of this Energy Bureau.

DLA Piper (Puerto Rico) LLC
500 Calle de la Tanca, Suite 401
San Juan, PR 00901-1969
Tel. 787-945-9147
Fax 939-697-6141

/s/ Laura T. Rozas
Laura T. Rozas
RUA NÚM. 10,398
laura.rozas@us.dlapiper.com

Exhibit 1

LUMA's Position on Genera's Request for Expedited Approval of Emergency Generation Capacity Solutions

LUMA's Position on Genera Request for Expedited Approval of Emergency Generation Capacity Solution

In accordance with the Resolution and Order ("R&O") dated February 27, 2025, issued by the Puerto Rico Energy Bureau ("Energy Bureau"), LUMA was ordered to provide its position on Genera's request for Expedited Approval of Emergency Generation Capacity Solutions, which includes:

1. Installing 800 megawatts of additional temporary mobile generators for 18 months
2. Substituting damaged units with pre-owned but functional generating units
3. Deploying generation barges to supplement the power supply.

In compliance with the February 27th R&O, LUMA has prepared this preliminary response. An assessment of individual project locations, interconnections and fuel supply requires additional analysis before full feasibility of any proposal can be determined.

Summary of LUMA's Response

LUMA analyses the adequacy of the generation supply portfolio each year in the annual Resource Adequacy Report as part of its obligation under the Transmission and Distribution System Operation and Maintenance Agreement ("T&D OMA"). The past three annual reports have consistently shown that Puerto Rico has a generation supply deficit of between 700-850 MW. These assessments confirm the fragility of the generation supply portfolio, which are further strained by the recent catastrophic failure of the Aguirre1 Power Plant ("Aguirre Unit 1").

Background to Puerto Rico's Resource Adequacy Deficiencies

LUMA first quantified Puerto Rico's generation inadequacies in the Systems Operations Principles Report ("SOP") submitted to the Energy Bureau in December 2021. In the four years since that report, the only generation capacity added to the grid was the 26 MW of wind capacity at Punta Lima and 350 MW of TM 2500 emergency generators. However, these incremental additions have been offset by reduced availability of existing units and increase in load over the past three years. Unless additional generation capacity is added to the grid, the situation will deteriorate further.

The Resource Adequacy picture in Puerto Rico can be visually seen in **Slide 1** of the attached Exhibit 2. The chart shows graphically which hours of the year the Puerto Rico grid has a reserve margin that is required under the System Operations Principles document approved by the Energy Bureau in the Spring of 2022. The chart shows that the available reserves in the evening hours are now below required levels for most of the year as evidenced by the red cells indicating capacity below recommended reserve levels. Black cells show the number of hours where there is not enough generation capacity, thus precipitating a load shed event.

Further evidence of the generation shortfall condition in Puerto Rico can be seen in **Slide 2** which displays the 115 individual load shed (combination of generation shortfalls and under frequency) events which occurred in 2024. For perspective, the general industry Planning Standard for North American utilities is to have enough generation reserves to tolerate one single load shed event every ten years. This

means Puerto Ricans experience 1,150 times as many load shed events as the average electricity customer in North America.

LUMA has developed a set of analytical methods that predicts with reasonable accuracy the expected frequency and duration of manual load shed events from generation shortfalls in upcoming months. As reflected in the **Slide 3,** the actual number of load shed events experienced since July 2022 is consistent with the expected number of load shed events predicted by LUMA in its Resource Adequacy forecast.

The above reflects the immediate need for additional generation in order to meet customer demand and maintain adequate generation reserves.

Impact of Catastrophic Failure of the Aguirre Unit 1 on the Outlook for Summer 2025

LUMA is completing a Resource Adequacy Summer Update focused on the risks of load shed for the upcoming summer and peak demand season. This update includes the potential impact of other unpredictable factors that could further worsen capacity deficiencies, such as additional plant unavailability, potential impacts of a Category 3 hurricane, or extended heat wave which would increase generation demand. LUMA's analysis, which is expected to be published by the end of March 2025, preliminarily expects 90 generation shortfall events between May 1, 2025, and October 31, 2025, as shown in **Slide 4,** a significant increase when compared to 20 load shed events that occurred in the same period in 2024. This outcome is heavily impacted by the recent forced outage at Aguirre Unit 1. However, the unavailability of Aguirre Unit 1 is not the only contributing factor. As shown in **slide 5**, the number of generation shortfall events would be reduced from approximately 90 to 60 if Aguirre Unit 1 were available.

When Under-Frequency Load Sheds ("UFLS") are included (based on the recent trend of approximately 70 UFLSs per year), the preliminary results from this update suggests that approximately 125 load sheds can be expected to occur between May and October 2025, or approximately 20 per month, double the incidence of load shed events in 2024.

Finally, LUMA's preliminary analysis of generation supply suggests that several factors could further worsen these estimates. **Slide 6** shows the potential impact of a Category 3 Hurricane, an extended summer heat wave, or a 1-month heat wave which would increase generation demand, or the loss of another baseload generating plant for the summer. These sensitivities show that any of these events would add approximately 30 more load shed events over the same 6-month period.

Impact to Requested Retirements / Replacement Projects

Another important consideration related to the generation shortfall condition and Genera's proposal to add 800 MW is the benefits that the addition of generation capacity could have on enabling Genera to proceed with its plan to replace existing peakers as well as adding battery capacity.

As System Operator, LUMA has the responsibility to ensure planned outage schedules are made taking into account the need to meet customer demand and maintain sufficient reserves to operate reliably, within existing and unavoidable constraints. In this context, LUMA rejected Genera's initial schedule of peaker replacements and Battery Energy Storage System ("BESS") additions because most of the site locations for the proposed additions would require existing generation capacity to be taken out of service, before the replacement facility could be constructed and operational. This proposed schedule would therefore have significantly increased load shed risks and would require operating the system outside of acceptable parameters. LUMA is currently working with Genera to explore other potential solutions to

scheduling these retirements and replacements in a way that minimizes the negative impact to electricity system reliability.

The addition of approximately 800 MW would enable Genera to continue with its unit replacement plans without putting at risk the operational stability or reliability of the system.

Overall Load Shed Benefits of Genera's Proposed Generation Additions

In response to Genera's proposal, LUMA has analyzed the impact of adding emergency generation to the current load shed forecast. In **Slide 7**, LUMA shows the improvement of adding 800 MW, as well as smaller increments of adding 350 MW and 150 MW, for the summer of 2025. LUMA used the three scenarios to reflect the uncertainty of how much emergency generation Genera can be located and when it might be installed.

LUMA has not had the opportunity to review nor make any assessment of the schedule or technical challenges of locating and installing 800 MW of generation. This requires a thorough assessment of Genera's proposal such as identifying and prioritizing locations, assessing site conditions, and performing system impact modeling. While some of this work can be sped up by leveraging previous efforts related to the Generation Stabilization effort conducted after Hurricane Fiona, such an assessment require a sizable workforce and budget to complete. LUMA looks forward to supporting Genera as it proceeds down this path of evaluating how to procure and then to install this additional generation.

Exhibit 2

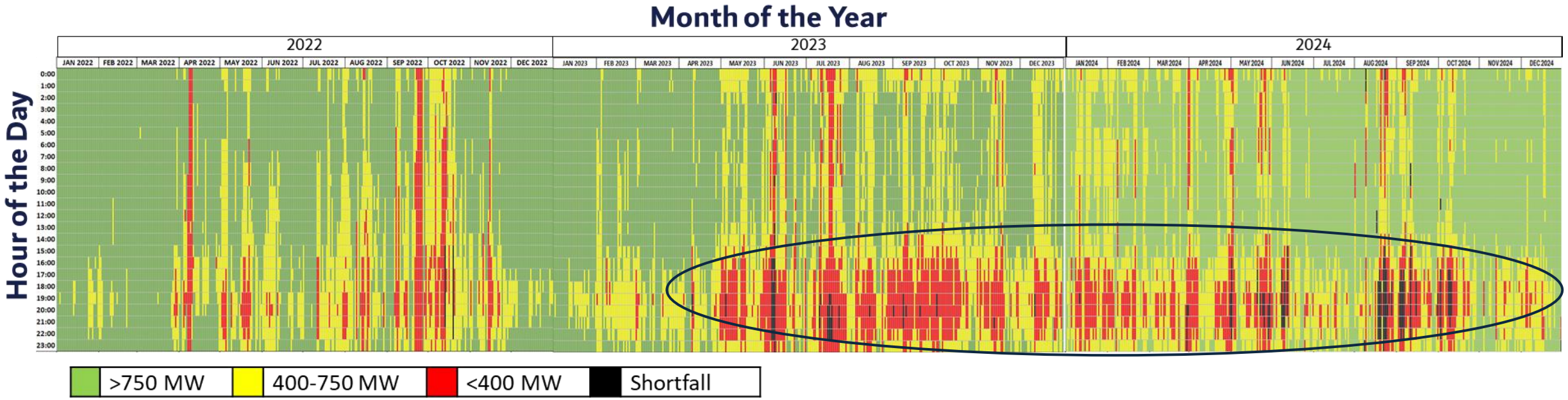
"Need for Emergency Generation Capacity" Presentation

LUMA

Need for Emergency Generation Capacity

March 6, 2025

Reserve levels have deteriorated since 2022

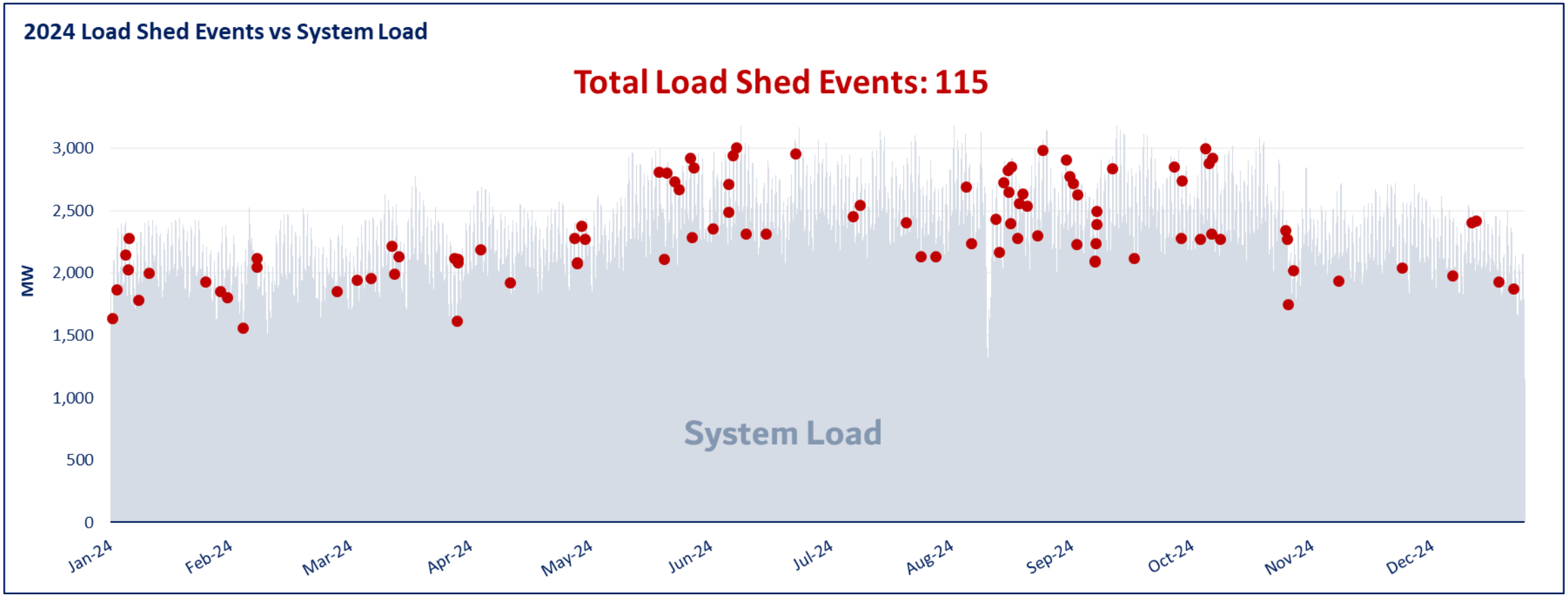


The chart shows hours of the year the Puerto Rico grid a reserve marge in that is required under the System Operations Principles (SOP) document approved by the Energy Bureau in Spring of 2022. Each hour of the three-year period is represented by cell, whose color designates how many reserve MW existed.

- Green cells represent the approximately 44 % of the hours where there was adequate reserves
- Yellow cells have between 400-750 MW, which is below SOP requirements, but still manageable from a reliability perspective
- Red cells represent less that 400 MW reserves which would be an emergency condition in most Independent System Operator's (ISO) control
- Black cells represent where there was inadequate reserves to meet demand, and a manual load shed occurred

The chart shows the situation is deteriorating as evidenced by the amount of circled red and black cells in the evening hours

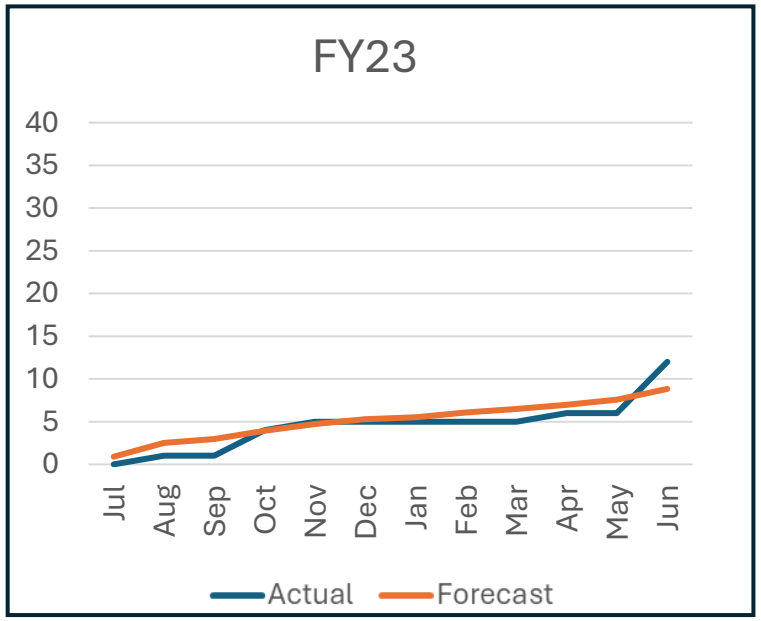
115 load shed events caused by generation issues in 2024

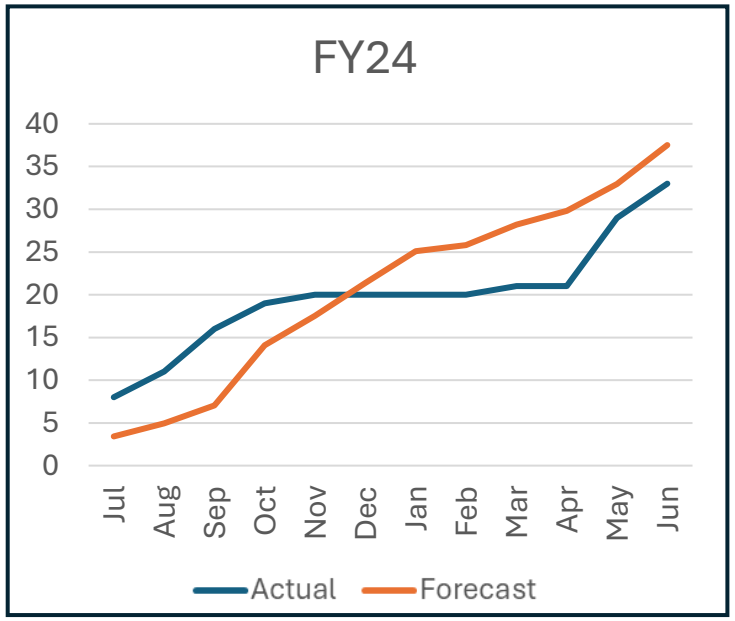


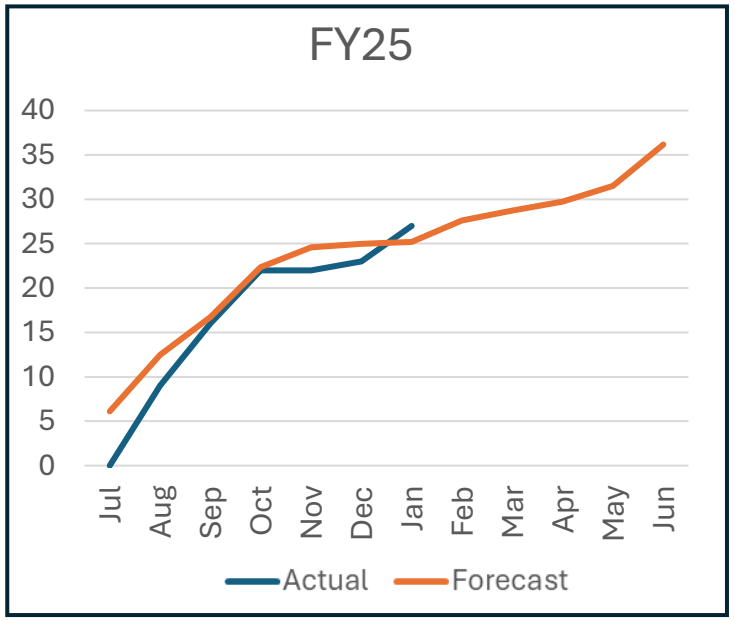
Rolling 12 Months (January 1, 2024 – December 31, 2024)	Total Events	Average Customers Affected	Average Duration (min)	Customer Minutes Interrupted (CMI)
Generation Shortfall Events	36	98,053	188	663,622,704
Unit Performance Load Shed Events	79	91,293	21	151,455,087

LUMA's prior forecasts of generation shortfalls causing load shed events have been highly accurate

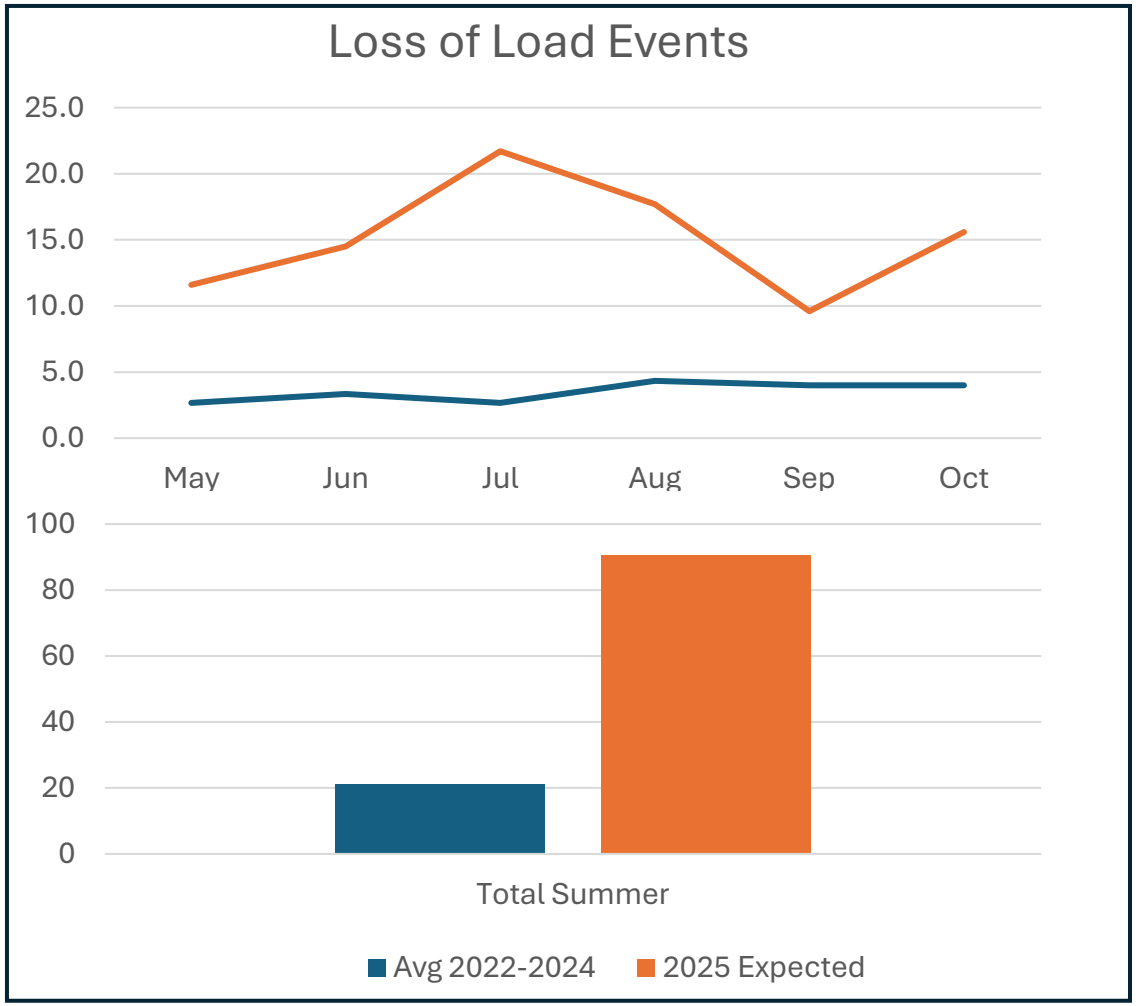
Cumulative # of Loss of Load Events

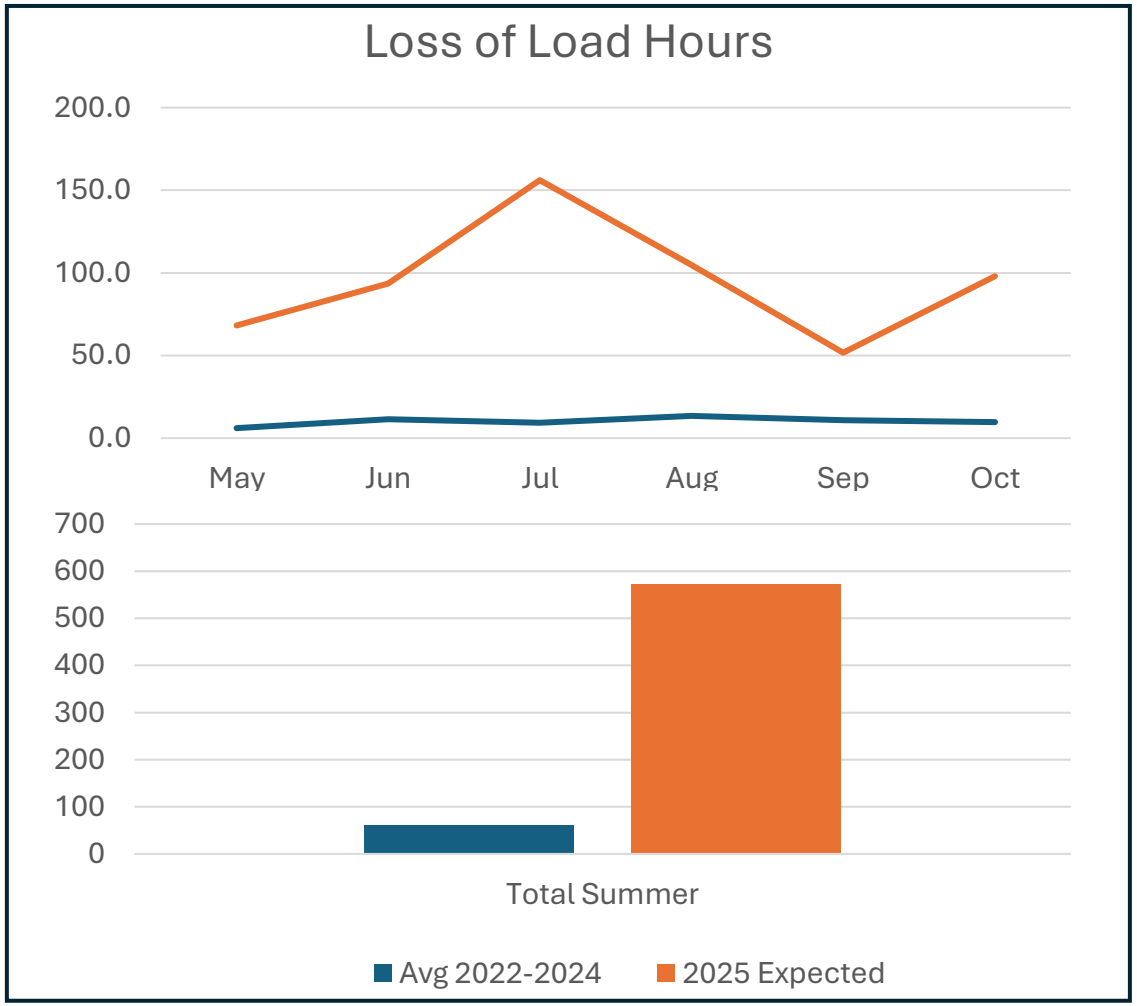






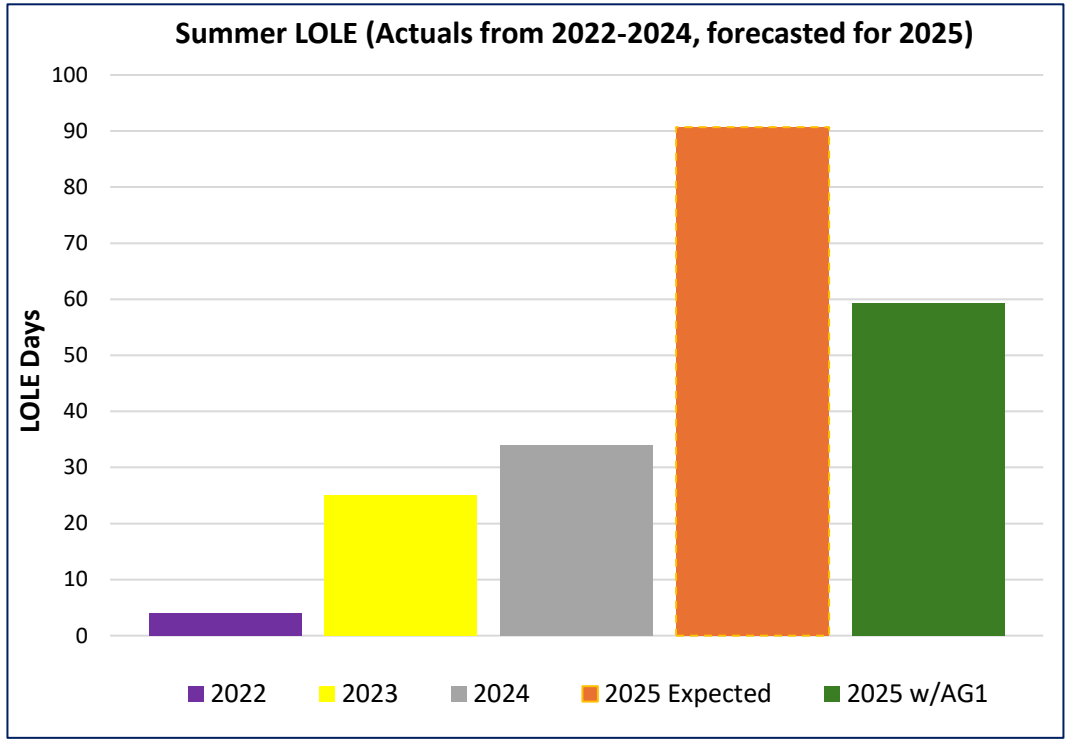
Both the number and duration of load shed events will increase significantly this summer relative to prior years

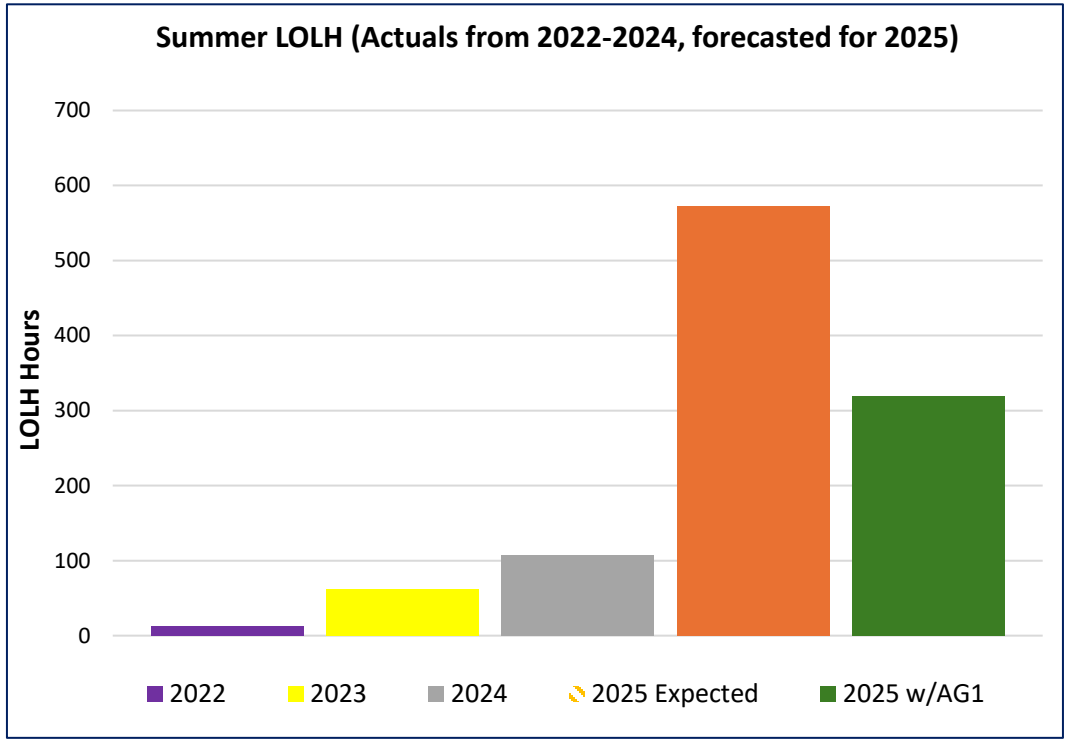




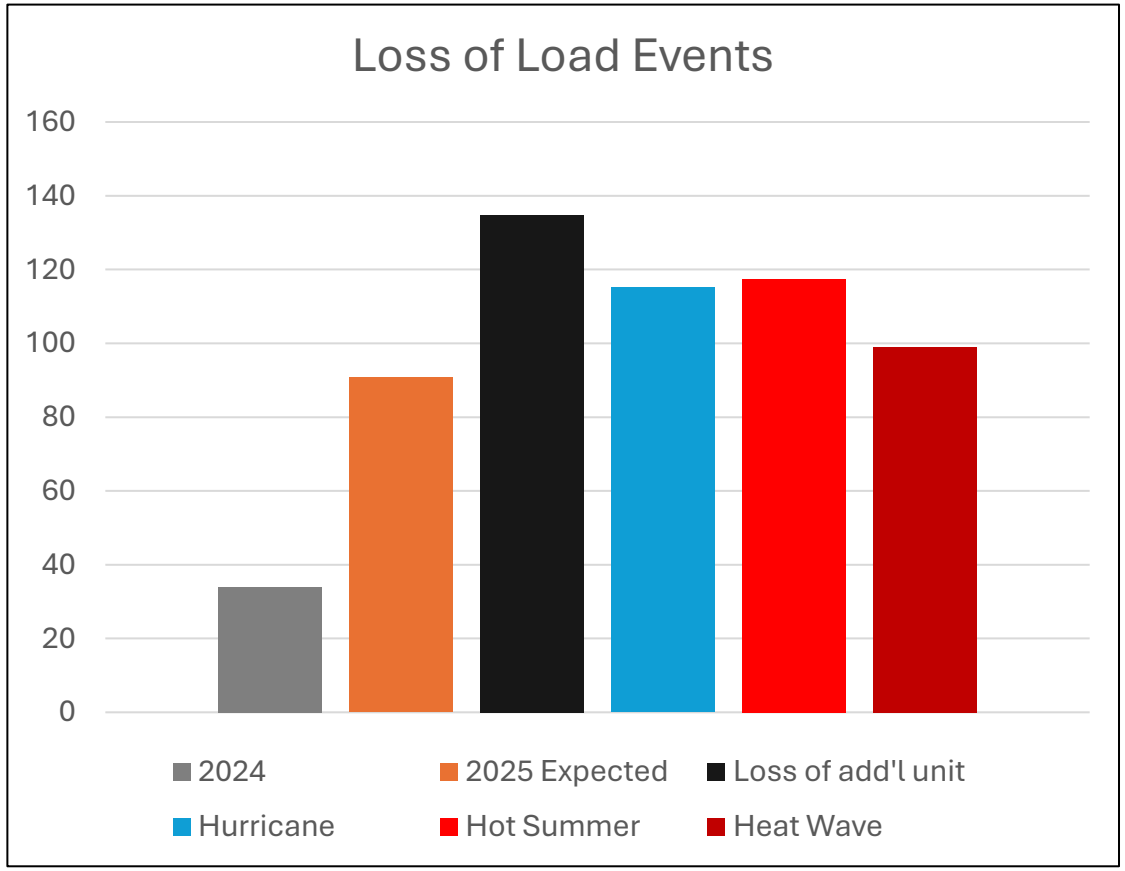
Reflects manual load shed from generation shortfall, does not include Under-Frequency Load Sheds

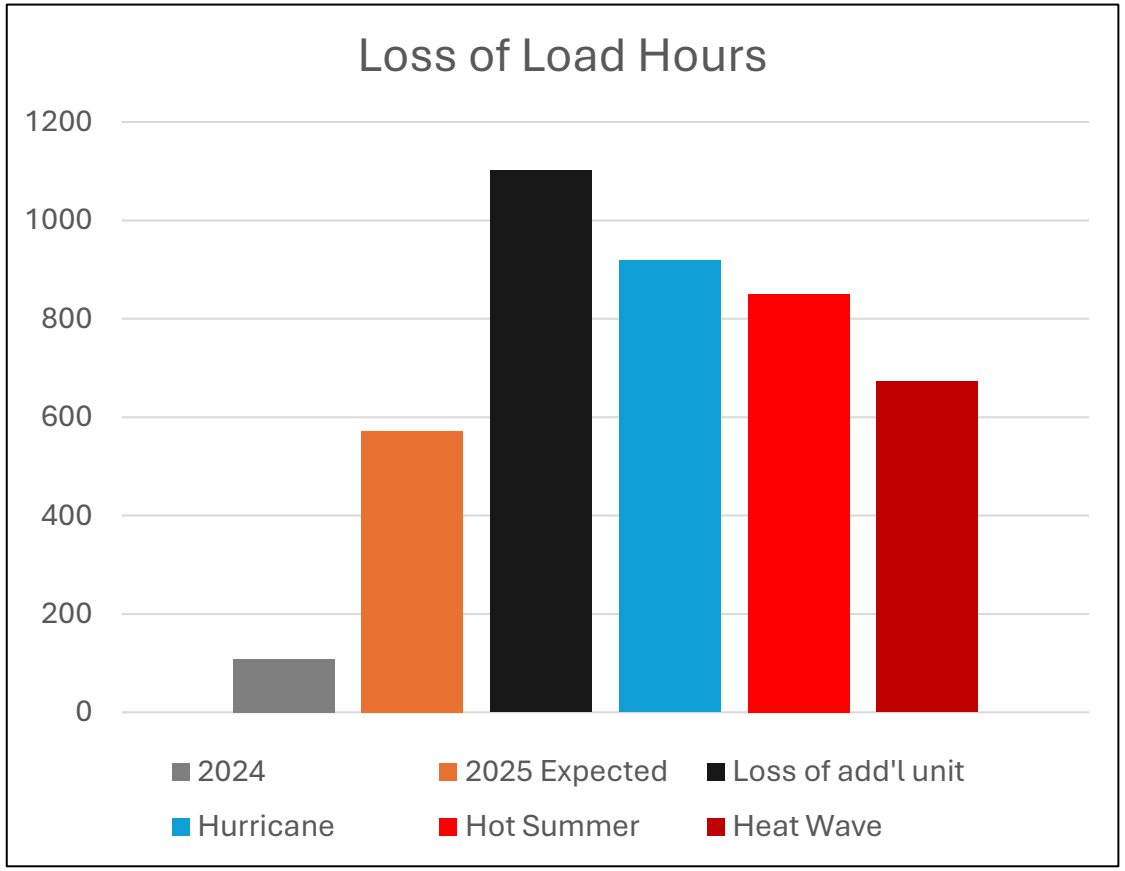
The loss of Aguirre 1 will increase the load shed activity this summer



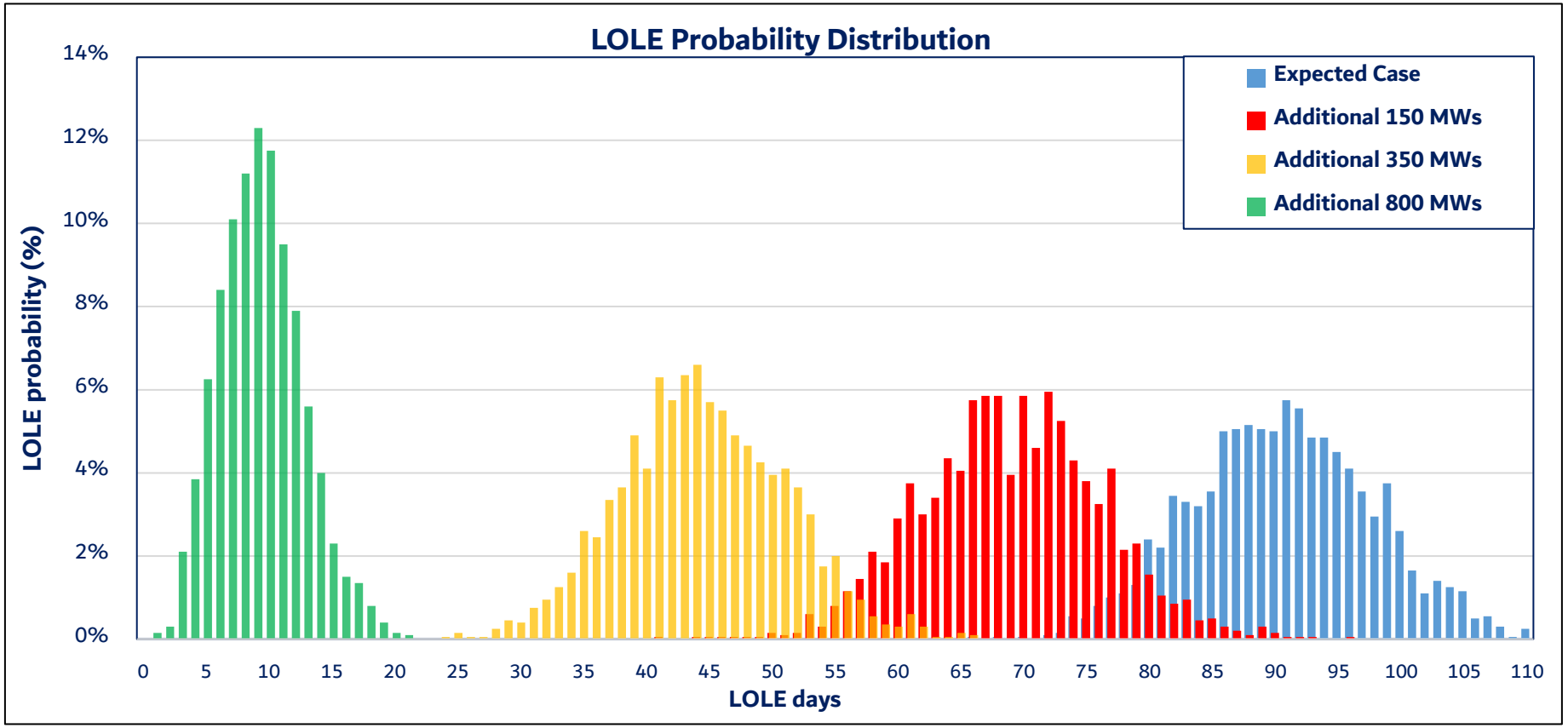


Other plausible scenarios could increase load shed activity this summer, beyond levels in the Expected Case





The addition of 800 MW will bring the portfolio closer to industry standards, even lesser amounts of additions will help



Case	LOLE Days	% LOLE reduction
Expected	90.7	-
+150 MWs	69.1	24%
+350 MWs	44.5	51%
+800 MWs	9.3	90%

- It will be a challenge to locate and install 800 MW of new emergency generation in the near term
- Three different increments of additions were modeled to indicate the relative benefits of even smaller amounts of capacity
- LUMA has not reviewed the feasibility or schedule of Genera's proposal, these numbers were only chosen to be illustrative of the relative impact


La gente primero.
La seguridad siempre.
LUMA

Exhibit 3

Letter to Genera

Transmittal # LUMA-GENCO-T-00180

March 6, 2025

To: GeneraPR LLC
Attention: Winnie Irizarry
Chief Executive Officer and President
American International Plaza
250 Ave. Luis Muñoz Rivera, Suite 1200
San Juan, PR 00918

RE: LUMA's Letter to Genera, re: PREB's February 27, 2025, Resolution and Order Regarding Temporary Generation Capacity

Dear Executive Officer Irizarry:

On February 26, 2025, GeneraPR, LLC ("Genera") filed with the Puerto Rico Energy Bureau Public Utilities Regulatory Board ("PREB") an Application for Accelerated Approval of Emergency Generation Capacity Solutions ("Application").

After reviewing the Application, PREB issued a Resolution and Order on February 27, 2025 ("Order"), granting LUMA until March 6, 2025, to state its position regarding Genera's request and, specifically, the need for temporary power generation capacity. The Energy Bureau also ordered Genera to provide LUMA immediately with any necessary information to comply with its Order.

To comply with PREB's Order, LUMA will be providing PREB with a response as it relates to generation capacity. As to the feasibility of the Application, LUMA expects Genera to schedule a meeting to coordinate matters related to the corresponding power generation system studies and facilities assessment, as these also relate to the upcoming plant retirement schedule and the summer reliability assessment.

Please contact us at your earliest convenience to schedule the meeting and comply with PREB's Order.

Sincerely,

Raphael Gignac (Mar 6, 2025 07:24 AST)

Raphael Gignac
Vice President System Operations

cc: Kevin Futch, Legal, Genera-PR; kevin.futch@genera-pr.com
Alejandro J. Figueroa Ramírez, Chief Regulatory Officer, LUMA; alejandro.figueroara@lumapr.com
Francisco Prego, Vice President T&D OMA Contract Management, LUMA; francisco.prego@lumapr.com
Brian Walshe, Director, Supply Side Contract Administration, LUMA; brian.walshe@lumapr.com
Eduardo Moreno Rodríguez, Manager, T&D OMA Contract Management, LUMA; eduardo.morenorodrig@lumapr.com