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

IN RE: REVIEW OF THE PUERTO RICO ELECTRIC POWER AUTHORITY´S 10-YEAR INFRASTRUCTURE PLAN – DECEMBER 2020	**CASE NO**.: NEPR-MI-2021-0002 **SUBJECT**: Request for Order Regarding Repairs, Request for Reconsideration, and to Inform Regarding Batteries

REQUEST FOR ORDER REGARDING REPAIRS, REQUEST FOR RECONSIDERATION, AND TO INFORM REGARDING STORAGE SYSTEMS

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

I. REQUEST FOR LEAVE TO ALLOW MAINTENANCE PROJECTS

PREPA hereby restates, incorporates, and adopts by reference all the arguments and statements included in the following motions: *Motion to Submit Fourth Group of Generation Projects* (November 15, 2021), *Motion to Clarify and Request for Technical Conference* (November 29, 2021) and *Urgent Motion for Reconsideration of the June 4 Order* (June 24, 2022).

The need to maintain PREPA's generation fleet in service with all its maintenance and repairs up to date is undeniable. Firstly, this is part of the sound and responsible operation of the generation fleet. This fact is enhanced by the reality of Puerto Rico being an isolated energy system. Secondly, the reality of the generation system and the pressing need to serve the supply is undeniable and warrants the Puerto Rico Energy Bureau of the Public Service Regulatory Board ("Energy Bureau") grant leave to proceed with repairs of units that are critical to serving the load of customers and have a reliable amount of rotating reserve.

In accordance with the *Resolution and Order* entered on March 26, 2021 (the "March 26 Order"), PREPA asked for the Energy Bureau's leave to perform these repair works since November 2021.[1] However, after several procedural events,[2] the Energy Bureau has not approved several projects that target the need to provide adequate repairs to the San Juan Units 8 and 10 and the Cambalache Unit 1. The approval of four (4) SOWs for the funding necessary to conduct these works *remains* pending before the Energy Bureau. The following chart shows the number of each SOW presented to the Energy Bureau, the description of the project, and the cost that, once the Energy Bureau provides leave to continue with the projects, would be funded by the Federal Emergency Management Agency (FEMA), not PREPA's customers.

SOW NO.	FACILITY	PROJECT NAME	SCOPE OF WORK	PRESENTED ESTIMATE[3]	REFERENCE OF SUBMITTAL	REFERENCE OF ORDER ADDRESSING SUBMITTAL
1016	San Juan Power Plant	Unit 10 Rehabilitation	Provide parts and service for the open inspection and close of the steam turbine and generator. Also, in-shop repairs for due repairs on the rotor and oil flush of the turbine.	$15.9	Feb. 14 Motion, Att. A, pp. 247-316	Apr. 13 Order
1021	San Juan Power Plant	Unit 8 Rehabilitation (Turbine)	Inspect and replace the high-pressure, intermediate pressure and low-pressure rotors of the turbine and perform all the testing and commissioning of the equipment.	$10	Feb. 8 Motion, Att. A, pp. 37-79	Apr. 13 Order

[1] *See Motion to Submit Fourth Group of Generation Projects* presented by PREPA on November 15, 2021. This motion asked the Energy Bureau for leave to commence 104 projects to repair the generation fleet and, also, to proceed with the corresponding applications and submissions to FEMA and COR3 for the reimbursement of *all* associated costs.

[2] *See i.e., Third Motion to Submit Additional Generation Projects SOWs* presented by PREPA on February 2, 2022; *Fourth Motion to Submit Additional Generation Projects SOWs* presented by PREPA on February 8, 2022; and *Petition for Leave to Conduct Works in PREPA's Steam Units to Achieve Environmental Regulatory Compliance* presented by PREPA on February 11, 2022.

[3] Presented in millions of dollars.

SOW NO.	FACILITY	PROJECT NAME	SCOPE OF WORK	PRESENTED ESTIMATE[3]	REFERENCE OF SUBMITTAL	REFERENCE OF ORDER ADDRESSING SUBMITTAL
1028	San Juan Power Plant	Unit 8 - Major Outage - Boiler Sections Replacement and Repairs & Auxiliary Equipment Repairs	Necessary repairs of deteriorated boiler tubes and assemblies and auxiliary equipment.	Inspect and replace	Feb. 8 Motion, Att. A, pp. 143- 162	Apr. 13 Order
6088	Cambalache Power Plant	Unit 1 Rehabilitation	Perform the required inspections, repair the exhaust gas housing and GT enclosure and filter house, and replacement of all of the hot gas path components, turbo compressor and blades, and inspect and replace gas turbine no. 1. Also, conversion of the control system to blue-line similar to gas turbines 2 and 3, upgrade the combustor pulsation monitoring system, upgrade the automatic voltage regulator and upgrade the opacity monitoring system.	$18	Feb. 2 Motion, Att. A, pp. 626- 643	Feb. 28 Order

However, the Energy Bureau has repeatedly denied PREPA leave to move forward with these critical projects. On June 4, 2022, the Energy Bureau entered what was, until recent hours, the latest denial of the request to conduct these repairs. *See Resolution and Order* entered by the Energy Bureau on June 4, 2022 ("June 4 Order").

In response to the June 4 Order, on June 24, 2022, PREPA presented the *Urgent Motion for Reconsideration of the June 4 Order* ("June 24 Request for Reconsideration") by which it requested that the Energy Bureau (i) stay its decision concerning the Denied Generation Projects;

(ii) schedule a technical conference to further discuss each of those proposed projects; and (iii) reconsider its decision to deny such projects and approve them. In response, the Energy Bureau informed it would continue analyzing SOWs 1016, 1021, 1022, 1027, 1028, and 6088, the projects listed in the table above, plus the repairs to San Juan Unit 7. As stated above and included in the table, these SOWs are for repair projects of the San Juan Units 8 and 10 and the Cambalache Unit 1. However, the Energy Bureau has not notified a decision regarding PREPA's request for leave to proceed. It is respectfully stated that such belatedness jeopardizes PREPA's fleet availability to produce reliable energy, jeopardizing the system operator's capability to supply the customers' demand.

According to the Approved IRP[4] Caveats and Limitations, the load served by PREPA is expected to significantly decline over the IRP's planning horizon due to a combination of expected base load reduction (driven by population and economic changes), energy efficiency gains and demand-side resources. These conditions of declining load forecast have *not* been met in the last three (3) years, as the load demand has increased, and the projection is that the demand could increase near 3,000 MW in the following years, according to PREPA's certified 2022 Fiscal Plan approved by the Financial Oversight and Management Board.[5] Therefore, the power system must have enough dependable generation capacity to supply the demand safely and reliably and, thus, avoid huge and frequent load-shedding events.

The reality mentioned above directly affects the feasible retirement schedule of PREPA's thermal units. PREPA fully supports the current public policy regarding renewable energy

[4] *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* ("Final IRP Order"), approving the 2020 Integrated Resource Plan, hereinafter referenced as the Approved IRP, and the Modified Action Plan.

[5] Available for review at https://oversightboard.pr.gov/fiscal-plans-2/ .

integration and transition. Notwithstanding, and especially considering that sufficient capacity of new renewable resources is not expected to be reliably interconnected with the power system at least during the following three (3) to five (5) years, it is imperative that the Energy Bureau act accordingly and allow Puerto Rico's energy system to provide reliable energy to the People of Puerto Rico. For this purpose, PREPA's priority is that the requested repairs are conducted to maintain the generating units online with the essential purpose of providing the necessary resources to serve the growing demand projections and to provide continuity and reliability in the electrical service.

It is also stressed that the requested repairs *do not* constitute a major overhaul of the generating units, in which every and all components and auxiliary equipment of the generating unit are inspected and repaired. The requested repairs are major but do not cover all the parts and equipment of the unit. The following list provides details of the repairs that PREPA herein requests the Energy Bureau to allow:

- **San Juan Unit 8** – In this unit, it is necessary to replace most of the boiler furnace wall piping and repair auxiliary components, such as feed pumps, circulation pumps, deaerator pumps, and induced and forced draft fans, including their motors. Also, it is necessary to inspect and repair the main power transformer and conduct an inspection of the generator.
- **San Juan Unit 10** – This unit has been out of service for several years due to the failure of the low-pressure turbine rotors. It is necessary to replace the low-pressure rotors, conduct an inspection, and repair the generator. This, in addition to boiler work on burners, an inspection of air preheaters, and repair of air and gas expansion joints, among other work on the boiler. In addition, it is necessary to repair several auxiliary components, such as the condenser, feed pumps, circulation pumps, deaerator pumps, and induced and forced draft

fans, including their motors.

- **Cambalache Unit 1** – This gas turbine has been out of service for several years after an electrical disturbance in a transmission line tripped the unit, causing the unit's catastrophic failure. The generating unit experienced a loud noise, high pulsation levels, and high turbine bearings vibrations and activated the implosion door. Catastrophic failure was found in the hot gas casing, combustor's tiles, swirler fins, and compressor rotor. To bring this unit back to service, it is necessary to inspect the unit, repair the exhaust gas housing and GT enclosure and filter house, and replace the hot gas path components, turbo compressor and blades, and gas turbine

Last night at 6:58 pm, the Energy Bureau granted PREPA leave to proceed with the repair works of San Juan Unit 7 (SOWs no. 1022 and 1027) and denied the repair works of San Juan Units 8 and 10. PREPA hereby requests the Energy Bureau to reconsider this determination and approve the San Juan Units 8 and 10 repairs (SOWs No. 1016, 1021 and 1028).

However, the standalone approval must be coupled with the approval of the requested repair works of the San Juan Units 8 and 10. The generation produced by PREPA's fleet is limited. One of the constraints that PREPA constantly phases is that it needs to perform planned maintenance, but, due to the age and condition of the fleet, if another unit is forced out of the system, it causes a domino effect of postponing planned maintenance because there is no enough available generation to substitute the generation produced by the units that will be taken out of service for maintenance, maintaining a safe operational reserve. This is particularly significant when a unit needs to be retired for a planned major overhaul, like what PREPA must perform to rehabilitate the San Juan Unit 7. However, to avoid this type of situation, PREPA made a holistic plan of repairs that was presented to the Energy Bureau with the *Motion to Submit Fourth Group of*

Generation Projects filed on November 15, 2021. This plan included considerations to address situations like the one mentioned above.

For example, with the November 15 Motion, PREPA presented the Energy Bureau with repairs and maintenance projects for the San Juan Units 7, 8 and 10. The reason to include all the units, besides all of them having the necessity of repairs and maintenance, is that to be able to retire San Juan Unit 7 for a significant overhaul, PREPA needs to substitute its generation with other units, and PREPA understood that at the time it would perform the San Juan Unit 7 overhaul, San Juan Units 8 and 10 would have been repaired by then and thus, San Juan Unit 7 could be put offline because San Juan Units 8 and 10 would replace the lost generation.

PREPA respectfully restates and reiterates that the repairs that PREPA deems necessary to be performed as promptly as possible to these units *are not* contrary to the Approved IRP. The Approved IRP recognizes that the load must be served while the renewables are integrated. The repairs that PREPA proposes herein aim to do just that and have generation available to serve the customers. It is undeniable that PREPA needs more dependable generation capacity *now*. It cannot wait until renewables and storage are installed in 2025, or a new combined cycle unit is commissioned in ten years. What PREPA is requesting from the Energy Bureau can be summarized as a request to perform the duties imposed upon it by its enabling law, which is serving electricity to the People of Puerto Rico.

II. REQUEST FOR RECONSIDERATION OF THE DENIAL TO ACQUIRE NEW EMERGENCY GENERATION

PREPA hereby restates, incorporates, and adopts all the arguments and statements included in the *Motion to Inform Reallocation of FEMA404 HMGP Funds and Request for Approval of Generation Projects* filed on August 2, 2022. As these filings show, PREPA has repeatedly

requested the Energy Bureau to approve the acquisition of eleven (11) simple cycle gas turbines ("Emergency Generation Units") to be deployed through the Island.

The most recent denial was entered by the Energy Bureau on September 15, 2022 ("September 15 Order"). However, the Energy Bureau noted that the denial

> does not preclude PREPA from seeking funds from FEMA -as applicable- in accordance with FEMA requirements to conduct necessary repairs and renovations to keep the existing functional Emergency Peakers fleet in optimal operational conditions in accordance with the Approved IRP.

September 15 Motion at p. 3.

Nevertheless, PREPA deems that using federal funds to repair a generation fleet that can be acquired new is not a sound administration and use of public funds and thus request the Energy Bureau to approve the replacement of the Emergency Generation Units.

PREPA respectfully states that the purchase of new Emergency Generation Units is completely justified, and this is now more evident than before. Hurricane Fiona has once again demonstrated that the generation fleet's age and lack of maintenance *is* a factor to consider when reliable energy service is the matter. One part of the equation is necessary repairs and renovations to keep the base load fleet functional and in optimal operational conditions. Having reliable peaking service is a piece of the equation of similar, if not more, importance. The amount of energy supplied with the base load units is limited, and the energy demand, mainly in peak hours, is increasing. Thus, if the base load fleet is unavailable to serve the peak load demand, PREPA must have reliable peaking services to serve the load and provide the reserve that the system operator requires. This argument is sustained by the concerns the electric system operator has presented to the Energy Bureau.

On August 30, 2022, LUMA Energy, LLC and LUMA Energy ServCo, LLC (collectively, LUMA) submitted to the Energy Bureau a Resource Adequacy Report.[6] According to LUMA's assertions in the report, the Resource Adequacy Report was developed to inform strategic resource planning decisions for the Puerto Rico electric system and includes an assessment of electricity generation and sufficiency needs by evaluating the conditions of insufficient electric supply to meet demand. LUMA states that the report is a tool that could aid in making decisions regarding retirements, modifications, maintenance schedules, and other items to reduce the risk of insufficient electric supply.

PREPA agrees with the methodology used to develop the Resource Adequacy Report, the inputs, and the conclusions that follow such analyses. The report duly represents the state of the generation fleet and, most importantly, the dire conditions of the system. These dire conditions make the system unreliable. PREPA hereby requests the Energy Bureau to incorporate the Resource Adequacy Report into the record of the captioned case and to consider its findings and conclusions to analyze and decide on the requests that PREPA makes in this motion.[7]

Additionally, on October 7, 2022, the Energy Bureau notified a *Resolution and Order* regarding a letter LUMA sent on October 6, 2022 ("October 6 LUMA Letter"). *See Resolution and Order* in case no. NEPR-MI-2022-0003, *In Re: LUMA's Response to Hurricane Fiona* ("LUMA Hurricane Response Docket").[8] In response to the latter, and per the October 7 order, on October 11, 2022, the Energy Bureau held a Technical Conference ("October 11 Technical

[6] *See Motion to Submit LUMA's Resource Adequacy Study* in case no. NEPR-MI-2022-0002, *In Re: LUMA Resource Adequacy Report*. Available at https://energia.pr.gov/wp-content/uploads/sites/7/2022/09/Motion-to-Submit-Lumas-Resource-Adequacy-Study-NEPR-MI-2022-0002.pdf

[7] This request is made in accordance with Section 9.03 of the Energy Bureau, *Regulation on Adjudicative, Notices of Compliance, Rate Review and Investigations Proceedings*, No. 8543 (December 16, 2015).

[8] The LUMA Hurricane Response Docket can be accessed at https://energia.pr.gov/en/dockets/?docket=nepr-mi-2022-0003

Conference") in which LUMA thoroughly discussed the (i) 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. During the October 11 Technical Conference, LUMA presented the status of the PREPA generation fleet, the operational challenges due to its age and condition, and short- medium- and long-term solutions to the situations identified. All these matters were presented through oral examination under oath guided by a presentation prepared and projected by LUMA during the conference and in response to the Energy Bureau's questions to LUMA's representatives.[9]

PREPA agrees and supports the statements made by LUMA in the October 6 LUMA Letter, the statements made by LUMA during the October 11 Technical Conference, and the facts and findings presented by LUMA in the presentation projected during such conference. Accordingly, PREPA hereby requests the Energy Bureau to incorporate the October 6 LUMA Letter, the testimony proffered by LUMA during the October 11 Technical Conference, and the presentation projected by LUMA during the October 11 Technical Conference. PREPA respectfully asserts that these reports and the representations made by LUMA as system operator support the request to have the entire Emergency Generation Units replaced.

Further, PREPA hereby informs that Central Office for Recovery, Reconstruction and Resiliency ("COR3") has conducted a study to evaluate the cost of acquiring 15 Emergency Generation Units, the four (4) black start units approved by the Energy Bureau and eleven (11) simple cycle gas turbine units for which FEMA approved about $280.82 million in 2020. According to the study, purchasing these units would cost approximately $770.8 million. However,

[9] The Technical Conference can be accessed at https://www.youtube.com/watch?v=DQbrg5oka_k .

in accordance with COR3's study conclusion, should the Energy Bureau grant PREPA leave to purchase these units, the SOW will be amended to include the revised cost. Nonetheless, the price will be subject to the competitive procurement process that PREPA will initiate once the Energy Bureau grants leave to acquire the Emergency Generation Units.

III. ALLOCATION OF FUNDS TO PURCHASE STORAGE SYSTEMS

PREPA's energy public policy promotes de use of renewable energy and storage instead of fossil fuel generation.[10] To achieve meeting the public policy standards, PREPA must retire its oil-fired fleet and replace it with renewable energy production in its entirety by 2050. This policy is sustained in the Approved IRP and Modified Action Plan. To this end, PREPA has determined that it will amend the current 404 Hazard Mitigation Grant Program (HMGP) funds SOW to request an allocation of approximately $82 million to purchase and install storage systems. PREPA will submit the draft SOW to the Energy Bureau once completed.

The development of the SOW to acquire storage systems will be centered on placing storage around the Island to simulate mini-grid regions, following the concept approved by the Energy Bureau in the Approved IRP. Final IRP Order at p. 13, ¶ 86 ("The Energy Bureau ACCEPTS the MiniGrid concept as a mechanism to provide resiliency during the loss of transmission or distribution system operations due to severe weather events.")

[10] One of the targets of the Modified Action Plan approved by the Energy Bureau is to achieve compliance with the Renewable Energy Portfolio Standard (RPS) created and amended by the *Public Policy on Energy Diversification through Sustainable and Alternative Renewable Energy in Puerto Rico*, Act. No. 82 of July 19, 2020, as amended, 22 L.P.R.A. §§ 8121 - 8136 and the *Puerto Rico Energy Public Policy Act, Act No. 17 of April 11, 2019,* 22 L.P.R.A. §§ 1141-1141f. The approved RPS seeks to reduce and eventually eliminate electric power generation from fossil fuels by integrating orderly and gradually alternative renewable energy while safeguarding the stability of the electrical system and maximizing renewable energy resources in short-, medium-, and long-term. The current RPS was established to achieve a minimum of forty percent (40%) on or before 2025, sixty percent (60%) on or before 2040, and one hundred percent (100%) on or before 2050 of renewable energy production in Puerto Rico. The *Puerto Rico Climate Change Mitigation, Adoption and Resilience Act*, Act No. 33 of May 22, 2019, 12 L.P.R.A. §§ 8011 – 8014 established that by 2022 twenty percent (20%) of all generation must come from renewable sources. Moreover, Act 17 calls for a total ban on coal-based generation by January 1, 2028.

IV. CONCLUSION

WHEREFORE, PREPA respectfully requests the Energy Bureau to (1) grant PREPA leave to continue with the repair and maintenance of the San Juan 8 and 10 units and the Cambalache Unit 1 granting leave to present SOWs 1016, 1021, 1028, and 6088 to COR3 and FEMA and (2) grant PREPA leave to continue with the Emergency Generation Units project, and (3) note that PREPA will proceed with a project to include energy storage with 404 HMGP funds.

In San Juan, Puerto Rico, this 22nd day of October 2022.

f/ Katiuska Bolaños Lugo
Katiuska Bolaños Lugo
TSPR No. 18,888
kbolanos@diazvaz.law

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

CERTIFICATE OF SERVICE

It is hereby certified that, on this same date, I have filed the above motion with the Office of the Clerk of the Energy Bureau using its Electronic Filing System at https://radicacion.energia.pr.gov/login, and a courtesy copy of the filling was sent to LUMA through its legal representatives at margarita.mercado@us.dlapiper.com and laura.rozas@us.dlapiper.com.

In San Juan, Puerto Rico, this 22nd day of October 2022.

f/ Katiuska Bolaños Lugo
Katiuska Bolaños Lugo