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

IN RE: PREPA'S 10 YEAR PLAN COMPETITIVE INFRASTRUCTURE PROCUREMENT PROCESSES	**CASE NO.:** NEPR-MI-2022-0005 **SUBJECT:** Determination for the Project Application Package for the Seven (7) Additional Peakers to be used as Emergency Generation.

RESOLUTION AND ORDER

I. Introduction

On November 4, 2022, the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau") issued a Resolution and Order ("November 4 Resolution")[1] conditionally approving the procurement of additional peaking generation and ordering the Puerto Rico Electric Power Authority ("PREPA") to work with COR3[2] on the revision of the Project Application Package for the Seven Additional Peakers subject to the following conditions:

The Seven Additional Peakers shall be:

(i) capable of being run using two types of fossil-fuel and Hydrogen or a mix of it. To avoid doubts, the Project Application Package must contemplate the infrastructure (as a conceptual design) to manufacture and supply Green Hydrogen. "Green Hydrogen" is defined as hydrogen produced by hydrolysis using electricity produced from renewable sources;

(ii) mobile; and

(iii) capable of being used as synchronous condensers to further facilitate the integration of renewables into the grid.

The November 4 Resolution also indicated that the location of the peaking generation should be considered in the MiniGrid Optimization proceeding.

On December 29, 2022, PREPA submitted to the Energy Bureau a Confidential Letter regarding a *Request for Approval to Proceed with Request for Proposals for New Emergency Generation Units at Jobos, Daguao and Palo Seco* ("December 29 Request"). The December 29 Request concerned an RFP for up to 50 MW of generation at the Jobos site, up to 60 MW of generation at the Daguao site, and up to 90 MW of generation at the Palo Seco site.

On January 5, 2023, the Energy Bureau issued a Resolution and Order ("January 5 Resolution") to request additional information from PREPA, and to order PREPA to respond to questions included in the Resolution and Order concerning the planned Project Application Package and associated Request for Proposals ("RFP").

On January 9, 2023, PREPA filed a document titled *Motion to Submit Responses in Compliance with the January 5 Order* ("January 9 Motion"). PREPA included an Annex A which contained the answers to the eight (8) questions from the January 5 Resolution.

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[1] Resolution and Order, *In re: Review of the Puerto Rico Electric Power Authority's 10-Year Infrastructure Plan – December 2020*, case no. NEPR-MI-2021-0002, November 4, 2022.

[2] Central Office for Recovery, Reconstruction and Resiliency ("COR3").

II. Discussion and Findings

The questions from the Energy Bureau covered the three conditions from the original November 4 Resolution:

> In response to question 2, PREPA states that "fixed units are considered for long-term generation in a single site" and "Mobile Units are for multiple sites because they are easier to be relocated".[3] PREPA also states, in reference to fixed and mobile units, that they "both equally provide the resiliency needed in PREPA's electrical system." PREPA presents no additional information in support of the statement that they provide equal resiliency for the electrical system. PREPA does not indicate a preference for either type of peaking units.

In response to question number 3 PREPA stated the following about peaking generation unit quantities and the MW size of older gas turbine units at each of the Jobos, Daguao, and Palo Seco:

> "Existing units at each location are 21 MW. The RFP intends to provide a range of MW, allowing multiple technology/manufacturers to bid their standard offerings". [4]

PREPA also indicated that it intends to also replace the older GT units at the Vega Baja station, but their operation is limited to daytime hours, due to compliance with noise control regulatory requirements.[5]

The January 5 Resolution and the November 4 Resolution indicated that the location of the generation should be considered in the MiniGrid Optimization proceeding. The MiniGrid optimization proceeding is concerned with determining the extent to which distributed resources can provide resiliency for the Puerto Rico electric system or provide resiliency of on-site energy service during times of extreme weather and electric system disruptions. Comparatively, resiliency can also be provided across a reliable, hardened T&D system accessing utility-scale generation such as the generation considered in PREPA's proposed RFP for emergency generation purposes, and for existing generation.

In addition to PREPA's proposed RFP for emergency generation, the Energy Bureau approved PREPA's request for the RFP for black start services, for procurement of up to 81 MW of black start capable generation.[6]

The Energy Bureau approved 844 MW of utility-scale solar PV renewable energy projects, 490 MW of utility-scale battery energy storage projects, and 17 MW of Virtual Power Plant battery energy storage capacity in Tranche 1 of the IRP procurement process.[7] The Energy Bureau's Independent Coordinator has issued an RFP and has received initial bids for renewable energy and battery energy storage, in Tranche 2 of the procurement process established in the IRP Order. Procurement of renewable energy and battery energy storage in Tranche 2 is of a similar magnitude as Tranche 1.

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[3] January 9 Motion, Annex A. Question 2.

[4] *Id.*, Question 3.

[5] *Id.*, Question 4.

[6] Resolution and Order, *In re: 10 Year Plan Federally Funded Competitive Process,* Case No. NEPR-MI-2022-0005, December 19, 2022 ("December 19 Resolution").

[7] *In re: Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012.

LUMA has indicated that behind-the-meter installations of small-scale solar PV and battery energy storage projects continue apace in Puerto Rico.[8] Puerto Rico anticipates further installations of small-scale solar PV and battery storage resiliency projects after the December 2022 passage of Federal legislation which included funding for such projects.[9] The Energy Bureau expects those installations to occur through mechanisms outside of the Energy Bureau's jurisdiction.[10] The timing of those installations is unknown.

On January 17, 2023, LUMA submitted its fifth update on the stabilization plan in response to Hurricane Fiona.[11] In the update, LUMA "identifies current operational issues and concerns and provides an update on LUMA's risk analyses."[12] LUMA notes that "barge generation may not be available" and that it is reviewing all feasible sources for trailer-mounted generation. LUMA states that "documentation packages have been turned over to FEMA for approximately 19 project locations" and indicates that the San Juan Power Plant, Palo Seco Power Plant, and Sabana Llana Transmission Center are being prioritized for installation of trailer-mounted mobile generators. Additional sites at Cambalache, Yabucoa, Aguirre and Jobos are being assessed as backup sites, "as needed".[13]

In its stabilization plan update LUMA states that "repeated site visits are underway...to assess physical, logistical, interconnection and other attributes of all feasible sites". LUMA also notes it has retained Black and Veatch to assist with data compilation and support required interconnection studies.[14]

PREPA is proposing to release its emergency generation RFP for peaking capacity at three (3) different sites – Palo Seco, Jobos, and Daguao - with the possibility of also considering a fourth site at Vega Baja. During this emergency generation RFP release and subsequent analyses and installations, other generation interconnection or pending interconnection studies and project installations will occur. The RFP activity will thus occur in a highly dynamic electric supply environment where i) temporary and permanent utility scale generation, both fossil-fueled and renewable, ii) utility-scale and small-scale battery energy storage, and iii) small-scale solar PV is slated for installation or assessment at locations all around Puerto Rico. The final size, ultimate location, or installation timing of at least some of this generation remains uncertain.

Keeping track of the full sweep of interconnection studies, and the input assumptions used in those studies, will require careful coordination and "assumption consistency" checks by LUMA and PREPA, as at least two interconnection study contractors will be engaged, Sargent and Lundy, and Black and Veatch. The Energy Bureau **ORDERS** PREPA to ensure consistency

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[8] Case NEPR-MI-2019-0007, concerning underlying data for performance metrics filed by LUMA. LUMA is in the process of submitting updated public information on the total amount of small-scale solar PV and battery energy storage distributed resources connected to the Puerto Rico electric distribution system. As of September 2022, roughly 400- MW of solar PV and more than 800 MWh of battery energy storage are connected.

[9] HR 2617, Public Law 117-328, Consolidated Appropriations Act, 2023. Summary of Appropriations Provisions by Subcommittee, Title IV – Energy and Water Development, and Related Agencies, Department of Energy, including: "$1 billion to increase the resilience of Puerto Rico's electric grid and assist low- and moderate-income households and households that include individuals with disabilities in purchasing and installing renewable energy, energy storage, and other grid technologies." Available at https://appropriations.house.gov/sites/democrats.appropriations.house.gov/files/FY23%20Summary%20of%20Appropriations%20Provisions.pdf (last visit, January 19, 2023).

[10] The Energy Bureau understands that the programs are to run by the US Department of Energy.

[11] *In re: LUMA's Response to Hurricane Fiona,* Case Num. NEPR-MI-2022-0003, *Fifth Update on Stabilization Plan for Temporary Emergency Generation Capacity* filed by LUMA on January 17, 2023.

[12] *Id.*, page 4.

[13] *Id.*, Exhibit 1, Fifth Update on Stabilization Plan, Generation Stabilization Plan Discussion, January 15, 2023, slide 4, "Area of Focus Past Two Weeks was Site Assessment".

[14] *Id.*

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of assumptions used for interconnection studies by its contractors with those assumptions used by LUMA's contractors through facilitation of engaged communications between the contractors. To comply with this order, PREPA must include as part of the reporting requirement ordered below a detailed listing of all key assumptions used by its selected contractor in interconnection studies for the emergency generation, and for the black start generation approved by the Energy Bureau in the December 19 Resolution. PREPA must also obtain from LUMA a similar detailed listing of all key assumptions used in interconnection studies conducted by LUMA's contractor. PREPA must provide in its reporting requirement a direct narrative stating how the key assumptions used by the two contractors are consistent for any given existing or planned generation facility. PREPA must also provide the interconnection studies for the emergency generation and the black start generation when completed.

The Energy Bureau is aware that conflicts may arise concerning the prioritization of interconnection options for any of the generation installations that arise from the IRP procurement tranches, the black start generation, this emergency generation, and the temporary generation that may result from LUMA's stabilization plan. In support of Puerto Rico public policy and the IRP Modified Action Plan, the Energy Bureau **ORDERS** PREPA to work with LUMA to prioritize interconnection of IRP procured renewable energy and battery energy storage over interconnection considerations for all other generation, where feasible while ensuring reliable system operation. The Energy Bureau **TAKES NOTE** that this generation is expected to be used for emergency purposes, not for daily "blue sky" generation needs and expects PREPA and LUMA to consider this in addition to the system conditions and assumptions when conducting its interconnection studies.

The Energy Bureau recognizes the importance of PREPA and LUMA coordinating the various streams of generation activity ongoing in Puerto Rico. The Energy Bureau also supports both PREPA and LUMA's goals of assuring a reliable electric power system for Puerto Rico. The Energy Bureau notes LUMA's stabilization plan's inclusion of "trailer-mounted mobile generators". The Energy Bureau reiterates the value of the availability of mobile generation units during a period of an uncertain trajectory of a "final" set of supply resources. The Energy Bureau's original November 4 Resolution recognized this, and the Energy Bureau confirms it here, in less absolute terms. The Energy Bureau **DETERMINES** that at least **three (3)** of the seven additional peaking units proposed for addition by PREPA **must** be mobile. The Energy Bureau notes that the major providers of peaking generation of the scale considered here have mobile unit alternatives.

The Energy Bureau further **ORDERS** PREPA to limit the total MW quantity of emergency generation to no more than **200 MW** nameplate capacity, and to no more than **seven (7)** individual units across the installation locations. The Energy Bureau also **ALLOWS** PREPA flexibility to consider the best mix of locations to install the emergency generation, but also **ORDERS** PREPA to continue to consider optimal locations and mobile vs. fixed attributes of emergency generation in any ongoing MiniGrid optimization proceeding activity.

The Energy Bureau further **ORDERS** PREPA to update the Energy Bureau with substantive information on the status of the emergency generation procurement ("Status Report"), at bimonthly intervals (2 Status Reports per month) during the first year commencing from the issuance of this Resolution and Order,[15] and quarterly[16] thereafter until installations are complete. This reporting is to include reporting on the status of the black start generation RFP and associated processes, and on the interconnection study assumption consistency between contractors as ordered above.

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[15] The first Status Report is due February 28. The remaining Status Report for the first year shall be due on or before seven (7) business days after the end of each 15 days (Bimonthly) period until June 30, 2024.

[16] The quarterly Status Report shall commence July 1, 2024, and its periods shall be the same as the quarterly fiscal year reports (e.g., July 1 – September 30 (Q1), October 1 – December 31 (Q2), and so on). Each quarterly Status Report shall be filed on or before seven (7) business days after end of each quarter.

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The Energy Bureau **CONDITONALLY APPROVES** the RFP and the Project Application Package with these six conditions:

1. At a minimum, at least three (3) of the seven additional peaking units must be mobile.

2. PREPA and LUMA must use consistent and reasonable input assumptions for all interconnection studies used in support of the emergency generation installation, considering that multiple contractors will be conducting interconnection studies for different purposes.

3. PREPA must give prioritization to interconnection of IRP-based generation and battery energy storage procurement over other generation installation interconnection, where feasible, while supporting reliable system operation.

4. Total emergency generation will not exceed 200 MW nameplate capacity and will not exceed seven (7) units.

5. PREPA will coordinate emergency generation location, sizing, and fixed or mobile attribute considerations with any ongoing MiniGrid optimization proceeding activity.

6. PREPA will report to the Energy Bureau on the status of emergency generation and black start generation procurement, including interconnection study assumption consistency between contractors, at bimonthly intervals for the first year, and at quarterly intervals thereafter as stated above until installation.

Be it notified and published.

Edison Avilés Deliz
Chairman

Lillian Mateo Santos
Associate Commissioner

Ferdinand A. Ramos Soegaard
Associate Commissioner

Sylvia B. Ugarte Araujo
Associate Commissioner

Antonio Torres Miranda
Associate Commissioner

CERTIFICATION

I hereby certify that the majority of the members of the Puerto Rico Energy Bureau has so agreed on January 23, 2023. I also certify that on January 23, 2023 a copy of this Resolution and Order was notified by electronic mail to kbolanos@diazvaz.law and I have proceeded with the filing of the Resolution and Order issued by the Puerto Rico Energy Bureau.

For the record, I sign this in San Juan, Puerto Rico, today January 23, 2023.

Sonia Seda Gaztambide
Clerk

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