**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<br>**SUBJECT**: Motion to Clarify and Request for Technical Conference |

**MOTION TO CLARIFY AND REQUEST FOR TECHNICAL CONFERENCE**

**COMES NOW** the Puerto Rico Electric Power Authority[1], through its counsel of record, and respectfully submits and requests as follows:

1. On November 15, 2021, PREPA filed a Motion to Submit Fourth Group of Generation Projects (the "November 15 Motion"). With the November 15 Motion PREPA submitted a comprehensive list of Generation Projects which consist of repair work projects of generation assets and for which PREPA will seek reimbursement under several FEMA programs. November 15 Motion at Attachment A. The Generation Projects list included the generation facility name, location of the facility, name and description of the work, and an estimate of costs. *Id.* at p. 3, ¶ 7. PREPA affirmed that it is of the utmost importance that the Energy Bureau approve that PREPA moves forward with the relevant request for reimbursement of the Generation Projects because, among other reasons, the People of Puerto Rico should not pay the costs for the Generation Projects if there are funds available to cover those expenses. *Id.* In the November 15 Motion, PREPA asserted that the execution of the Generation Projects will serve the People of Puerto Rico and will allow PREPA to follow its responsibility and duty to provide reliable and continuous electric service. *Id.* PREPA moved the Energy Bureau to approve the Generation Projects to allow PREPA

[1] Capitalized terms not defined herein shall be considered with the meaning provided to them in the November 15 Motion.

to present them to COR3 and FEMA.

2. On November 18, 2021, the Energy Bureau entered a Resolution and Order partially addressing the November 15 Motion (the "November 18 Order"). In the November 18 Order the Energy Bureau clarified that all PREPA's capital projects expenses require the Energy Bureau's approval. November 18 Order at p. 1. Further, the Energy Bureau stated that "The Energy Bureau will promptly issue a resolution evaluating the Proposed Generation Projects. However, as a preliminary matter, the Energy Bureau considers that most of the Proposed Generation Projects entail capital and/or maintenance-related investments inconsistent with the approved Integrated Resource Plan (IRP) and Modified Action Plan as well as PREPA's approved budget." *Id.* The Energy Bureau also emphasized on the fact that PREPA must follow the strong energy public policies that are behind the retirement of certain generation units during the new five (5) years, the reduction of dependance on certain types of fuels and the substitution of the generation infrastructure. *Id.* The Energy Bureau further stated that PREPA must adhere to the operative IRP. *Id.*

3. In the November 18 Order, the Energy Bureau informed that it would evaluate the Generation Projects with the urgency that circumstances require. *Id.* at p. 2. It also resolved and order that PREPA is barred from executing further activities regarding the Generation Projects, provided however, that PREPA may execute those activities which are specifically covered in the generation budget approved by the Energy Bureau for Fiscal Year 2021. *Id.*

4. In the end, the Energy Bureau emphasized that any action taken by PREPA "must be consistent with the Approved IRP and Approved Action Plan." *Id.* (emphasis in the original removed).

5. PREPA herein addresses some of the statements made by the Energy Bureau in the

November 18 Order in the hope that these will aid in the evaluation of the Generation Projects. Furthermore, PREPA herein includes more information regarding the justification and necessity of the Generation Projects and requests the Honorable Energy Bureau to schedule a Technical Conference to discuss the Generation Projects that may have raised a concern to the Energy Bureau before a decision is made.[2]

6. First and foremost, PREPA emphasizes that the November 15 Motion did not have the intention of changing or amending the Approved IRP and Modified Action Plan, nor to be inconsistent with these plans. It has never been PREPA's intention to pursue projects that are not compliant with the Approved IRP and Modified Action Plan. To the contrary, PREPA's action of presenting the Generating Projects for the Energy Bureau's approval reflect that its intention is to comply and follow both plans. PREPA is committed to the current energy public policy of transitioning from fossil fuels to clean and renewable energy, stated in the Approved IRP and Modified Action Plan.

7. PREPA's intent is evident in the fact that, despite PREPA understood, pursuant to the relevant orders, that it only needed to present for the Energy Bureau's approval new capital investment projects[3] and that the Generation Projects were not new capital investment projects, PREPA responsibly filed the list of Generation Projects for review **and approval** of the Energy Bureau. It is the Energy Bureau, not PREPA, the entity tasked with regulating PREPA's proceeding in the development of capital projects.

[2] This request is similar to what the Energy Bureau decided when it needed additional information of projects listed by LUMA under buildings category that were submitted for approval. The Energy Bureau scheduled a Technical Conference to discuss the: (1) work to be performed under the SOWs relate to the buildings category presented as part of the [motion], (2) the necessity of such work to provide reliability to the electric system and (3) the differences in cost estimates. See Resolution and Order entered on September 22, 2021 at p. 3.

[3] November 15 Motion at p. 3, ¶ 6 ("Even though the March 26 Order directs PREPA to present to the Energy Bureau new capital investment projects, PREPA is committed in keeping its regulator informed of all the projects that will be submitted to COR3 and FEMA for reimbursement and have its leave to move forward with the corresponding requests for reimbursement under the applicable programs.").

8. PREPA's November 15 Motion emphasizes on providing a safe and reliable electric service to the People of Puerto Rico, focusing on the existing generation assets availability and its effect on the power system reliability. It must be noted that the system reliability decreases as the dependable available generation capacity decreases. When the available operational generation capacity is lower than the minimum required for a reliable operation, the power system is under a high risk of losing stability. This risk is even higher in an isolated system like Puerto Rico's system, where an instability event can evolve to a total outage or blackout more easily than in an interconnected system. To prevent such total system outage during generation capacity limitations, the system operator needs to execute partial outages across the power system, affecting thousands of customers. Therefore, outages resulting from generation capacity limitations usually disconnect huge blocks of load from the power system, which could include critical loads such as hospitals and other essential services facilities.

9. During recent months, Puerto Rico's electric system customers suffered frequent and prolonged outages due mainly to generating units forced outages. The system operator, LUMA Energy LLC (LUMA), had to execute partial outages across the power system to avoid a total blackout. There were outages periods of four, eight and more hours. These events affected almost all of Puerto Rico's population, including, in some cases, critical loads such as hospitals, nursing homes, manufacturers, food chain suppliers, health services, educational facilities, safety services, water facilities, and telecommunications facilities. In the particular case of outages on telecommunications facilities, including data and internet services, they interrupted remote works and learning activities that have become very common as a measure to prevent COVID-19 contagion. Hence, in summary, the mentioned outages events affected the health, safety, and quality of life of Puerto Rico's population, in addition to the effect on the local economy, especially

on small and medium businesses. It is noted that, in early September, LUMA conducted a review of the load-shedding practices and removed critical loads from the load-shedding program.

10. Examples of recent generation forced outages, which affected thousands of customers at a time, are the following:

| Date | Offline Generating Units | Forced Outage Generating Unit | Cumulative Out of Service Customers |
|---|---|---|---|
| September 6, 2021 | San Juan 5, Costa Sur 6, Aguirre 2 | Palo Seco 3 | 227,541 |
| September 7, 2021 | San Juan 5, Costa Sur 6, Aguirre 2 | Palo Seco 3 | 290,966 |
| September 14, 2021 | San Juan 9, Costa Sur 5, Costa Sur 6 | All EcoEléctrica units | 528,000 |
| September 26, 2021 | Costa Sur 5, Costa Sur 6 | Aguirre 1 | 679,107 |
| September 27, 2021 | Costa Sur 5, Costa Sur 6, Aguirre 1 (Aguirre 2 was under limited capacity) | Palo Seco 3 | 1,163,000 |
| September 28, 2021 | Costa Sur 5, Costa Sur 6, Palo Seco 3 (Aguirre 2 was under limited capacity) | Palo Seco 4 | 1,150,000 |
| September 29, 2021 | Costa Sur 5, Costa Sur 6, Palo Seco 4 (Aguirre 2 was under limited capacity) | Palo Seco 3 | 81,668 |
| September 30, 2021 | Costa Sur 5, Costa Sur 6, Palo Seco 4 (Aguirre 2 was under limited capacity) | Palo Seco 3 | 223,421 |
| October 8, 2021 | Costa Sur 6 (Aguirre 2 was under limited capacity) | Aguirre 1 | 15,000 |

These examples show how the forced outage of one generating unit[4] can cause the disconnection of thousands of customers, when there were already other offline major units. It is clear that the shown limitation in dependable available generation reduced considerably the reliability of the power system, making it vulnerable to instability during the forced outage of one generating unit.

[4] A single contingency, commonly known as an N-1 contingency.

To increase the current limited dependable available generation and provide a reliable and continuous generation service to the People of Puerto Rico, preventing events like those mentioned before, it is crucial to keep the generating units and their auxiliary equipment operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top of PREPA's priority list. The Generation Projects presented for approval in the November 15 Motion consist of repairs works needed to increase the current dependable available generation and provide a reliable electrical service, preventing major outages to Puerto Rico's customers.

11. As Puerto Rico's electrical system operator, LUMA submitted for the Energy Bureau's approval, the document System Operation Principles (SOP). Among other things, the SOP have the purpose of defining procedures for controlling steady-state power system stability, minimize disruptions caused by contingencies, and establish transmission-operating limits. The SOPs are complemented with other documents, including a Policy on Reserves (POR), which in turn defines the minimum operational reserve capacities to maintain a continuous and reliable electrical service. According to the POR, LUMA's System Operations area has been defining the outages of Puerto Rico's generating units, both PREPA's and the independent power producers' units, as forced, maintenance or planned outages. In the case of forced outages, LUMA's System Operations area has assigned this classification to all non-planned outages that reduce the operating reserve below the minimum level calculated according to the POR, which can result in minimum reserves of about 750 MW. Currently, PREPA's dependable available generation capacity is not enough to comply with these minimum reserve requirements. Hence, to comply with the SOP and POR reliability criteria, the dependable available generation capacity needs to be optimal, being increased from the current limited levels. The Generation Projects presented for approval in the

November 15 Motion consist of repairs works needed to increase the current dependable available generation and provide a reliable electrical service and a means to comply with the SOP and POR reliability criteria.

12. PREPA submits that the November 15 Motion is consistent and in accordance with the Approved IRP, which has provisions to maintain a safe and reliable electrical service while the integration of reliable new resources is completed. The Generation Projects present the minimum repairs works required to keep the existing generating fleet running and with a reliable operation during an average of five (5) years following the repairs. In general, major repairs of old generating units are needed, in average, every five (5) years to maintain the generation fleet's reliable and continuous operations. This cadence is in accordance with the unit's original equipment manufacturer (OEM). There are other components in the old units that require repairs that are more frequent. This near-term reliable operation cycle is necessary to maintain a safe and reliable electric service, including complying with current SOP and POR reliability criteria, during the development and integration of the renewables and energy storage projects ordered in the Approved IRP. It is expected that the development of the repairs works included as Generation Projects could take about two (2) fiscal years. These works are in parallel with the transformation of PREPA's existing generation fleet that will continue as renewable generation penetration increases and existing generation resources retire.

13. The November 15 Motion's Generation Projects objective is to maintain the reliability of the generation system during the process of integrating new resources. This, because they consist of the minimum repair works required for keeping the existing generating fleet running and with a reliable operation during an average of five years following the repairs. The intention of these repairs is not to perpetuate the use of fossil fuels for generating electric energy as this is not the

current energy public policy and thus, PREPA's parallel efforts are towards transitioning from fossil fuels to clean and renewable energy. In fact, in a scenario where, due to unforeseen situations, the reliable integration of new resources would need to be delayed further than the next five years, the major repairs included in PREPA's November 15 Motion would be required to be implemented again at the end of the five-year cycle. This is to maintain a continuous and reliable electrical service during the process of new resources interconnection.[5]

14. Regarding the retirement of certain thermal generation units during the next five (5) years[6], the Energy Bureau noted in the Approved IRP that the determination of retirement schedules for older oil-fired generating units is dependent on achieving specific reliability milestones related to the integration of new resources.[7] The Approved IRP further provides that "PREPA should retire the older, oil-fired steam assets, roughly in order of declining cost to operate (and in consideration of retirement sequencing by unit to align with synchronous condenser conversion) as soon as they are no longer necessary for reliable system operations." IRP Order at p. 193, ¶ 630. The Energy Bureau approved PREPA's retirement plan for the steam units that was presented by PREPA to the Energy Bureau on June 2020. Pursuant to the IRP Order, the retirement must be "in accordance with PREPA's caveats[917] indicating a need for replacement capacity, assurance of meeting the overall reliability needs, and in alignment with more specific timing

[5] An example of this uncertainty can be withdrawn from the fact that the renewables and BESS Tranche 1 request for proposals issuance was delayed by two (2) months and Tranche 2 is currently delayed by five (5) months. It must be stressed that the mention of these events does not mean that PREPA is altering any plan or directive approved in the IRP Order.

[6] November 18 Order at p. 1.

[7] IRP Order at p. 10, ¶ 64 ("The Energy Bureau FINDS that PREPA should retire its older, oil-fired steam assets in order of the declining cost to operate when they are no longer necessary for system reliability. The retirements should align with synchronous condenser conversion."); *see also* IRP Order at pp. 14-15, ¶ 92 ("[The] Modified Action Plan consists of specific directives to PREPA, including the following key components:" (…) "Determination of retirement schedules for older oil-fired generating units (with approval of conversion of some units to synchronous condensing operation), which will be dependent on achieving specific reliability milestones: completion of new battery energy storage capacity, potential additional peaking capacity, and obtaining DR resources and peak load reduction through EE provision.")

thresholds described in the Modified Action Plan." *Id.* The caveats and limitations related to the retirement of existing steam generating fleet adopted by the Energy Bureau in the IRP Order (as cited and incorporated in footnote 917 of the IRP Order) provides that "these recommendations are based on other prerequisite developments which include the forecasted reduction in load, assumed levels of reliability of the remaining of the existing fleet at the time of retirement, and the commissioning of the new generation resources" and "the retirement of existing generating units should be only implemented after all the prerequisites above have been met, particularly that all new resources are fully operational, and units planned for retirement are not required for reliable operation of the system." *See* PREPA's Proposed IRP filed on June 7, 2019 in case no. CEPR-AP-2018-0001, Part 9, Caveats and Limitations, No. 17, page 9-4.[8]

15. According to the caveats and limitations stated in the Approved IRP and Modified Action Plan shown in paragraph 14 of this Motion, the generation units' retirement shall occur upon the reliable integration of new resources with the power system. Hence, it is required to keep the existing generating units operational and running until the reliable integration of new resources is completed. Repairs works like those presented for approval in the November 15 Motion provide a safe pathway to keep a dependable generation availability during the development of this integration. In general, the reliable integration of new resources, renewables or fuel-fired, with a power system consists primarily of the following:

a. Performing interconnection studies for determining the optimal point of connection in the power system and other technical requirements

b. Determining the adequate capacity and technical operational requirements of the generation facility, particularly if voltage and frequency regulation is required

[8] Available at https://energia.pr.gov/wp-content/uploads/sites/7/2019/06/2-IRP2019-Main-Report-REV2-06072019.pdf (Last visited November 22, 2021)

c. Obtaining the required permits for the construction of the generation facility on the selected location or site, especially those for environmental compliance

d. Developing the design, procurement, installation, construction, and commissioning of the generation facility according to codes, standards, and best and prudent industry practices

e. Performing operational interconnection tests before the facility's commercial operation commencement date

It is noted that new resources operational interconnection tests can take several months, as during these tests the system operator verifies that the resource's operation complies with the technical operational requirements and that does not affect the reliability of the power system. These tests are live tests and are executed while the power system is supplying its loads. The tests mainly consist of interconnecting the new resource with the power system, generally producing only a fraction of its available capacity. If the new resource does not comply with the technical operational requirements or affects the reliability of the power system, the system operator lower the resource's energy production or disconnect the resource from the system with notification of the found deficiencies. Then, once the resource owner corrects the deficiencies, it coordinates a new interconnection test with the operator. These operational tests process is repeated until the system operator finds that the new resource complies with the technical operation requirements and that does not affect the reliability of the power system. Given the conditions of new resources operational interconnection tests, it is essential to maintain a dependable available generation capacity during the reliable integration of new resources.

16. Additionally, the Approved IRP and Modified Action Plan state as a specific directive to PREPA, determining the thermal generating units' retirement schedules in compliance with the

provisions of these plans. PREPA is committed to determine units' retirement schedules consistent with the Approved IRP and Modified Action Plan and to present them for the Energy Bureau's approval.

17. Regarding the expenses for repairs, it must be noted that the majority of the Generation Projects with higher costs are those related to the units' major components repairs. These projects expenses cover the minimum repairs works required to keep the existing generating fleet running and with a reliable operation during an average of five years following the repairs. The Generation Projects list names and descriptions include the terms "major inspections", "major overhauls" and "major outages". PREPA herein clarifies that these terms refer to the repairs of the major components of the generating units, as the power plants' staff use these terms. In old steam units, it is always required to perform repairs during a major outage. In general, as stated above, the OEMs recommend this type of work every five years, as an average.

18. The major outage works consist primarily of opening the machine and repairing all its major components, like the high, intermediate and low-pressure turbine rotors, in addition to the generator. Depending on the generating unit type, this work could include the repair of the boiler. When a major outage takes place, it includes the repairs of the auxiliary systems and equipment, such as the lubrication and water systems, motors, pumps, valves, control systems, and other parts. During the major outage of old steam units, it is expected to find damages or breakages in the unit's components, especially on the turbine rotors. For example, the repair of a turbine rotor could take from four to six months, because the rotor has to be shipped to the OEM shop for the major repair. In order to reduce the outage time during major outages of steam units, more than fifteen years ago, PREPA acquired one spare turbine rotor for each steam power plant. Hence, when the steam unit's major outage starts, its turbine rotor is retired and shipped to the OEM shop and the

spare turbine rotor is installed in the unit during the repair works. Then, when the OEM repairs the retired turbine rotor and ships it back to PREPA, it becomes the new spare rotor in the steam power plant. The rotors replacement works that are shown in the November 15 Motion do not consist of replacements with new rotors, but with repaired rotors. In fact, the approximate cost of only replacing one turbine rotor with a new rotor, without the other works that are part of the unit's major outage, is about $25,000,000.

19. In addition to the increase of the dependable available generation capacity, the repair works included in PREPA's November 15 Motion have a direct effect on the compliance with environmental regulations, especially those works related to the power plant water systems.

20. PREPA's November 15 Motion Generation Projects total expenses adds to about $344,209,675, of which approximately $170,000,000 could be expended during the present fiscal year. Since PREPA does not have enough funds to cover these expenses, with the Energy Bureau's leave, PREPA will submit to FEMA the mentioned repairs for reimbursement.

21. PREPA is moving in the direction of a lower cost and cleaner energy future that meets Puerto Rico's legislative goals while procuring to maintain reliability and stability in the system during such transition.

**WHEREFORE**, PREPA respectfully requests the Honorable Energy Bureau to note the statements made in this motion in the hopes that these will aid the evaluation of the Generation Projects and also, that the Energy Bureau schedule a Technical Conference to discuss the Generation Projects that may have risen a concern to the Energy Bureau.

**RESPECTFULLY SUBMITTED.**

In San Juan Puerto Rico, 29th day of November 2021.

*s/ Maralíz Vázquez-Marrero*
Maralíz Vázquez-Marrero
mvazquez@diazvaz.law
TSPR No. 16,187

*s/ Katiuska Bolaños-Lugo*
Katiuska Bolaños-Lugo
kbolanos@diazvaz.law
TSPR No. 18,888

**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 I have filed the foregoing with the Clerk of the Energy Bureau using the electronic filing system using https://radicacion.energia.pr.gov/login and also, that I have served a copy on LUMA Energy, LLC and LUMA Energy ServCo, LLC through their counsel of record at laura.rozas@us.dlapiper.com and margarita.mercado@us.dlapiper.com.

In San Juan Puerto Rico on this 29th day of November 2021.

*s/ Katiuska Bolaños-Lugo*
Katiuska Bolaños-Lugo