



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

October 16, 2024

VIA EMAIL:

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Harriet M. Hageman

Subcommittee on Indian and Insular Affairs
Chair
1531 Longworth House Office Building

Response to additional questions from the Oversight Hearing conducted on September 26, 2024 on the Energy Bureau testimony on *Examining Puerto Rico's Electrical Grid and the Need for Reliable and Resilient Energy*.

Dear Chair Hageman:

It was a privilege and an honor for the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau") to appear before the Subcommittee on Indian and Insular Affairs ("Subcommittee") oversight hearing which you presided as Chair, held on Thursday, September 26, 2024 to present testimony on "*Examining Puerto Rico's Electrical Grid and the Need for Reliable and Resilient Energy*" ("Hearing").

On October 1, 2024, after Commissioner Antonio Torres-Miranda statement and in-person testimony at the Hearing, the Subcommittee had additional questions for the Energy Bureau to respond. Included herein are the Energy Bureau's responses to each of the members of the Subcommittee follow-up questions.

The Energy Bureau is at your disposal to clarify additional questions or comments your Subcommittee may have on the matter.

We appreciate the opportunity to address this Honorable Subcommittee.

Antonio Torres-Miranda, Esq., E.I.T.
Associate Commissioner

ANSWERS TO FOLLOW UP QUESTIONS
ANTONIO TORRES MIRANDA
ASSOCIATE COMMISSIONER IN REPRESENTATION OF THE
PUERTO RICO ENERGY BUREAU
BEFORE THE
SUBCOMMITTEE ON INDIAN AND INSULAR AFFAIRS
COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

"Examining Puerto Rico's Electrical Grid and the Need for Reliable and Resilient Energy"
Thursday, September 26, 2024 at 10:00 a.m.

I. Rep. Westerman

Questions from Rep. Westerman for Mr. Antonio Torres Miranda, Associate Commissioner, Puerto Rico Energy Bureau, San Juan, Puerto Rico

1. From your perspective, what are the key reasons for the continued blackouts in Puerto Rico and what is your recommendation for addressing these challenges and for ensuring that Puerto Rico has access to reliable and resilient energy?

Response

Two key reasons for continuing customer outages (localized and bulk system)¹ in Puerto Rico are:

- a. Distribution and transmission system vulnerabilities due to the weakened state of the electricity delivery infrastructure throughout the Island.² While the overall T&D infrastructure condition has been improving with ongoing FEMA-funded investment and repair following historical under-investment in maintenance and the hurricanes Irma (2017), Maria (2017) and Fiona (2022), degraded underlying infrastructure still exists. Repair and

¹ Localized outages are relatively small in magnitude though frequent and numerous; and are due to specific distribution system component failures caused by different factors including age, condition, weather, vegetation, etc. Bulk system outages are due to transmission system component failure (lines or substation transformers, e.g.) or from generator outages and a resulting generating capacity (or, battery energy storage) shortage. Such shortages include availability of operating reserve or frequency regulation capacity that could prevent customer outages under "loss of generation" contingency conditions.

² See, for example, LUMA System Improvements Preliminary Plan, July 19, 2024. Case No. NEPR-MI-2024-0005, at page 4 (Reducing size and impact of outages, addressing the largest cause of outages), and page 7 (rebuild distribution feeders, clear hazardous vegetation, harden and upgrade the transmission system, install grid automation devices, strengthen grid resiliency by replacing damaged or old distribution poles and transmission towers).

replacement progress is ongoing. An extensive vegetation management program and planning is underway.³

- b. Resource capacity insufficiency,⁴ due primarily to ongoing decreased availability of a large portion of the legacy fossil-fueled generation assets,⁵ coupled with slower than expected deployment of new resources to replace the energy and capacity capability of legacy assets.⁶ The insufficiency includes operating reserve and frequency regulation capacity resources (such as that which can be provided with battery energy storage system (BESS) units), which under normal conditions would be available in sufficient quantity to restore the system without (or with minimal) customer outages following contingency events such as the loss of a generation unit (or units) or outage of a major transmission system element (or elements).

Within the approved IRP Order, we are addressing these challenges with the following specific actions:

- Approval of LUMA's requests for FEMA funds to repair and replace transmission and distribution system components, and PREPA and Genera requests for FEMA funds to repair and replace generation system components.⁷
- Monitoring LUMA's efforts to repair and restore the T&D system to industry standard conditions through ongoing review of industry standard metrics such as SAIFI and SAIDI, and ongoing vegetation management programs.⁸
- Approval for procurement and deployment of numerous capacity-providing resources to raise the level of resource sufficiency, or resource adequacy, in Puerto Rico. This includes the following resources:
 - 360 MW (2 phases) of LUMA's planned Accelerated Storage Addition Program ("ASAP") for deployment in near-term time frames of BESS

³ LUMA, System Improvements Plan Virtual Technical Workshop, September 9, 2024, vegetation management details at slides 6, 17-28.

⁴ See, for example, LUMA, *Puerto Rico Electrical System Resource Adequacy Analysis*, Resource Adequacy Report: Key Findings, page 9. December 11, 2023.

⁵ See, Genera, *Electric System Stabilization Plan*, Energy Bureau Case No. NERP-MI-2024-0005, July 8, 2024. Page 31-33.

⁶ Energy Bureau, Case No. NEPR-MI-2020-0012, *Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modifies Action Plan Modified Action Plan*, various Resolutions and Orders, for example September 26, 2023; June 30, 2023; September 1, 2022; June 13, 2022; February 2, 2022.

⁷ See, for example, Energy Bureau Case No. NEPR-MI-2021-0002, *Review of the Puerto Rico Electric Power Authority's 10 Year Infrastructure Plan- December 2020*, numerous and ongoing Resolution and Orders.

⁸ *Id.*

resources at existing sites with sufficient interconnection capability. The expected deployment timeframe for these resources is 2025-2027.⁹

- 535 MW of approved Tranche 1 BESS, for deployment in 2026.¹⁰
 - 430 MW of Genera BESS resources for deployment in 2026-2027.¹¹
 - 244 MW of Genera's approved plan for emergency black start and peaking generation, for deployment in 2027-2028.¹²
 - 60 MW of approved Tranche 2 battery energy storage systems, for deployment in 2026-2027.¹³
 - Genera ongoing improvements to legacy generation units with claimed increases in availability through 2025 of up to hundreds of MW.¹⁴
- Ongoing monitoring and expansion of LUMA's Customer Battery Energy Storage (CBES) program, which allows for the deployment of battery energy storage capacity during evening peak periods when called upon by LUMA. This program currently has registered 19 MW and has the potential for deploying additional resources up to the total multi-hundred MW quantity of customer batteries currently installed in Puerto Rico.

As stated above, a lack of system resource adequacy is a major cause of the persistent rolling blackouts. Besides the above detailed tasks, the Energy Bureau is considering priority stabilization plans to address this issue in its *Priority Plan for Stabilizing the Electricity Grid* proceeding in Case No NEPR-MI-2024-0005.¹⁵

2. In August 2020, PREPA proposed replacing old fuel plants with a new liquefied natural gas terminal. PREB rejected this proposal in favor of solar grid projects. This is concerning as baseload sources such as LNG and coal are proven to be more reliable and resilient than renewable sources such as solar and wind.

a) I am assuming that PREB agrees with me that Puerto Rico deserves to have access to reliable and resilient energy. If that is the case, why did PREB

⁹ NEPR-MI-2024-0002, ASAP docket. NEPR-MI-2024-0005, Stabilization Plan docket.

¹⁰ See for example, Energy Bureau R&Os, NEPR-MI-2021-0012, June 13, 2022, and October 3, 2024.

¹¹ See Energy Bureau R&O, NEPR-MI-2021-0002, July 17, 2024.

¹² See Energy Bureau R&O, NEPR-MI-2022-0005, July 23, 2024.

¹³ Energy Bureau, R&O, NEPR-MI-2020-0012, August 26, 2024.

¹⁴ Genera, *Stabilization Plan* filing, NEPR-MI-2024-0005, July 8, 2024 at pages 35-40; and presentation at virtual technical workshop, September 11, 2024, at slides 6-11.

¹⁵ Available at: <https://energia.pr.gov/dockets/?docket=nepr-mi-2024-0005> (last visited October 11, 2024).

decide to reject a plan that would have utilized resilient and reliable baseload energy sources?

Response

The generation portfolio is statutorily dictated through the Integrated Resource Plan (IRP) approved by the Energy Bureau. As with any other Public Utility Commission considering an IRP, this determination was the result of an adjudicative process, in which the extensive record is publicly available in Case No. CEPR-AP-2018-0001,¹⁶ and in which numerous parties, including the public, participated. Those affected by the decisions were afforded remedies for appeal, with which they did not avail themselves.

After the completion of the aforementioned adjudicative process in Case No. CEPR-AP-2018-0001 in which no party, including PREPA, requested judicial review, certain proposed conversion of some of the legacy oil-fired units to gas fired units was presented by PREPA to the Energy Bureau in 2022.¹⁷ The Energy Bureau denied those proposals in August 2022, as they were not aligned with the Modified Action Plan of the IRP Order.¹⁸ Prior to PREPA's proposal, and according to the local public policy, the Energy Bureau issued a final Order on the 2018-2019 IRP,¹⁹ which included a Modified Action Plan calling primarily for a combination of BES resources and utility-scale solar PV resources to be procured (using competitive solicitations) to meet resource needs. The Energy Bureau rejected PREPA's proposal not "in favor of solar grid projects" but in accordance with the Modified Action Plan of the approved IRP Order, which explicitly included capacity resources to support renewable energy integration and provide resiliency and reliability to the Puerto Rico electric power system.

The Modified Action Plan was based on the results of an extensive series of industry-standard capacity expansion and production cost modeling runs, and the analysis of the reliability of a system with an economically optimum resource portfolio that included new renewable energy and battery storage resources to replace the energy and capacity of legacy assets. The outcome of the modeling was a cost-effective economically optimal result, providing Puerto Rico with capacity and energy resources to meet load requirements at least cost, while also maintaining reliability and adhering

¹⁶ Available at: <https://energia.pr.gov/dockets/?docket=cepr-ap-2018-0001> (last visited October 11, 2024).

¹⁷ NEPR-MI-2020-0012. PREPA filings of February 11, 2022 and August 2, 2022.

¹⁸ NEPR-MI-2020-0012. The Energy Bureau denied these requests as not being aligned with the Modified Action Plan of the IRP in R&Os on August 3, 2022 and on August 18, 2022.

¹⁹ Final Resolution and Order on the Puerto Rico Electric Power Authority's Integrated Resource Plan, *In re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*, Case no.: CEPR-AP-2018-0001, August 24, 2020 ("IRP Order").

to Puerto Rico's legislative requirement to meet renewable energy portfolio standards (RPS) enacted with Act 17-2019.²⁰

²⁰ *Puerto Rico Energy Public Policy Act, Section 1.6(7), ("Act 17-2019")*.

II. Rep. Raúl Grijalva

Questions from Rep. Raúl Grijalva for Mr. Antonio Torres Miranda, Associate Commissioner, Puerto Rico Energy Bureau

1. Genera is asking for 560 MW of new liquified natural gas (LNG) generation capacity. Is it true that the FOMB unilaterally cancelled 593 MW of utility-scale solar projects that the Energy Bureau had already approved in 2021, and that had the FOMB not cancelled them, those projects would likely be built or under construction today at a time when that extra capacity would prevent blackouts?

Response

This question should be referred to the Financial Oversight and Management Board for Puerto Rico.

2. Puerto Rico has a plan for six tranches of utility-scale solar projects to provide a total of 3750 MW of solar PV generation and 1,500 MW of battery storage. The proposals for the final tranche of projects were supposed to be done in June 2023, according to the original timelines outlined by PREB, but now we are seven years post Hurricane Maria and not a single project from the FIRST tranche is operational yet.
 - A. What needs to be done to get these projects online as soon as possible? What are the projected timelines for Tranches 1-3?

Response

Several factors have delayed the procurement of utility scale renewable energy, e.g., the transition from PREPA to LUMA as the operator of the T&D system resulted in new interconnection requirements that conform to industry standards, the need to rewrite contracts to allow developers to benefit from the DOE Loan Program Office programs, the lingering bankruptcy of PREPA, and the repeated assertions that PREPA would emerge from bankruptcy while Tranche 2 and then Tranche 3 were ongoing, stalled completion of revised PPOA and credit terms were still being discussed for Tranche 1. The PREB-IC has been taken into account modification to the RFP process that would accelerate the process and ensure a certain expected price cap.

Tranche 1 was awarded by the Energy Bureau and the FOMB with an expected commercial operation date of 2026.

Tranche 2 was awarded by the Energy Bureau with an expected commercial operation date of 24 months after PREPA execution of the contracts which require FOMB prior approval.

Tranche 3 is currently ongoing, and some modifications are expected to make it more economically competitive.

- B. Do you believe the Puerto Rico's generation shortfall can be met with renewables on a reasonable timeline?

Response

This issue is being considered by the Energy Bureau in its *Priority Plan for Stabilizing the Electricity Grid* proceeding in Case No. NEPR-MI-2024-0005.²¹

3. As you know, the people of Puerto Rico are buying up solar and batteries for their homes because they know it will keep the lights on better than the grid will, both after and between hurricanes. These systems are particularly important for people with energy-dependent disabilities, like those on dialysis. Solar and batteries also make disaster recovery easier on first responders after a hurricane because it keeps fridges working, keeps people away from the hospital, and allows the utility to prioritize other households with urgent energy needs. Further, each new home with solar and batteries means that less fuel has to be shipped to the island at extra cost. Do you think that a decision about whether to peel [b]ack financial incentives that make solar and batteries accessible to low-income families should consider those wider social benefits, or do you think it's better to just do a narrow cost benefit analysis from the perspective of the utility, which excludes those broader considerations?

Response

These issues are being considered by the Energy Bureau in its *Draft Study on Net Metering and Distributed Energy* proceeding in Case no. NEPR-MI-2024-0006.²²

4. Has PREB had any written or verbal communications with the FOMB regarding net metering before, during or after the enactments of both Act 17-2019 and Act 10-2024? If so, when was the first such communication? When was the most recent?

²¹ Available at: <https://energia.pr.gov/dockets/?docket=nepr-mi-2024-0005> (last visited October 11, 2024).

²² Available at: <https://energia.pr.gov/dockets/?docket=nepr-mi-2024-0006> (last visited October 11, 2024).

Response

The first communication was on June 17, 2024, through which a copy of the public Resolution and Order in Case No. NEPR-MI-2024-0006, issued June 14, 2024, by the Energy Bureau releasing the *Draft Puerto Rico Net Metering Report*²³ June 2024 was sent to the FOMB staff.²⁴

The most recent communication was on September 9, 2024, through which the Energy Bureau again provided the same public Resolution and Order issued June 14, 2024, *Draft Puerto Rico Net Metering Report, June 2024* to the FOMB staff.

5. Genera's parent company, New Fortress Energy, supplies Puerto Rico with most of its natural gas. It seems then that Genera stands to benefit from the delay of renewables implementation because more natural gas would be purchased from its parent company. Would you agree there is a financial incentive for Genera to slow-walk renewables implementation? What tools does PREB have at its disposal to counter Genera's incentive to slow walk renewables growth?

Response

Genera is not the entity responsible for renewables implementation in Puerto Rico. Currently, renewables are installed through either individual customer installations (such as small-scale rooftop solar PV), or through contracts with PREPA through the competitive Tranche solicitations under the IRP Modified Action Plan. LUMA is responsible for interconnection analyses in support of both of those renewable installation pathways. The Energy Bureau tools at its disposal to help accelerate the deployment of renewables include oversight over all procurement pathways and oversight over LUMA's analytical processes for interconnection.

6. Republicans like to say that solar can't be relied on because the sun doesn't always shine, and we know that argument doesn't work because that's what the batteries are for. But now they claim the benefits of large fossil fuel plants can't be replaced. Can solar and batteries provide frequency regulation services for the grid? Can large battery banks start from a dead stop faster than oil or even methane plants? Can solar and batteries provide ramping or spinning reserve, which allows generators to respond quickly to outages and surges in demand for energy? What about arbitrage – can battery banks do that?

²³ Available at: <https://energia.pr.gov/wp-content/uploads/sites/7/2024/06/20240614-MI20240006-Resolucion.pdf> (last visited October 16, 2024).

²⁴ Available at: <https://energia.pr.gov/wp-content/uploads/sites/7/2024/06/20240614-MI20240006-Resolucion.pdf> (last visited October 15, 2024)

Response

Battery energy storage resources can provide frequency regulation to the grid, operating reserve capability including “spinning” reserve, and very fast ramping capabilities. BESS resources can provide energy arbitrage, or “shifting” of energy by charging during non-peak periods and discharging during peak periods. BES resources are directly dispatchable when under the control of LUMA and can be indirectly dispatchable via third-party providers such as is seen with resources participating in LUMA's customer battery energy storage (CBES) program.

These ancillary services and energy arbitrage qualities are directly considered in the contracts for Energy Storage resources between PREPA and those developers providing battery installations under Tranche 1 and Tranche 2 deployments. Depending on the extent to which small scale solar inverter technology capability is utilized, solar PV can also directly provide certain grid support services.

These system stability issues are being considered by the Energy Bureau in its *Priority Plan for Stabilizing the Electricity Grid*, Case No. NEPR-MI-2024-0005.²⁵

7. Democrat committee staff recently met with several stakeholders in the process of implementing utility scale solar and storage in Puerto Rico. Accion, the contactor PREB hired to implement the tranches of solar and storage to do a better job than PREPA did, was roundly criticized for failing to improve the process. There seems to have been very little movement on the second and third tranches of utility-scale solar projects. What oversight of Accion is PREB doing to ensure the utility scale solar projects are getting done and that the massive delays, which are contributing to blackouts, come to an end? Also, why is it not a conflict of interest to have the regulator engage in a regulated activity?

Response

Accion is the independent coordinator for the Energy Bureau for the solicitation of resources under Tranche 2 and 3 of the solar PV and battery energy storage procurement process. Utility regulators across the US, such as, California, Colorado, Oregon, Georgia, North Carolina, New Mexico, Arizona, Louisiana, Washington, and Texas will occasionally use independent evaluators or independent coordinators to oversee a competitive procurement process arising from procurement needs established by the regulator.

²⁵ See, available at: <https://energia.pr.gov/dockets/?docket=nepr-mi-2024-0005> (last visited October 16, 2024).

8. In previous Committee hearings on energy in Puerto Rico, witnesses have testified that the single biggest reason that energy costs are so high in Puerto Rico compared to the rest of the U.S. is because the fossil fuel must be imported. Is that still true?

Response

Fossil fuel costs vary according to market prices and are subject to worldwide offer-supply. Puerto Rico generally has a much larger share of its total electricity generation sourced from certain fossil fuels (distillate and heavy oil) that are much less relied upon for electricity generation in the mainland US, and this higher share for these relatively more expensive fuels is a large contributor to the high electricity costs in Puerto Rico at this time.²⁶

²⁶ See, for example, US EIA data on electricity generation fuel costs and comparisons between Puerto Rico and mainland US shares of fuel used for electricity generation.

III. Rep. González-Colón

Questions from Rep. González-Colón for Mr. Antonio Torres Miranda, Associate Commissioner, Puerto Rico Energy Bureau, San Juan, Puerto Rico

1. Background: As discussed, Puerto Rico may face 18 to 24 months of being short of peak capacity reserves until new installations are completed. Therefore, the Island needs fast deployment of reliable generation capacity to meet full demand now.

Additional mobile LNG units would be fastest for the short-term. However, it is true they would have lesser economy of scale. So this alternative should also include fast-tracking the removal of one or more existing obsolete or unusable unit or units, and installing new technology units integrated with batteries for stabilization and backup, in the same footprint of the old units. Puerto Rico can fast-track its own permitting, but this would require a federal champion to clear hurdles from federal regulators.

Genera PR brought up in the hearing a proposal for meeting the short/medium term need:

- o Fast conversion of the Palo Seco, Cambalache and Mayaguez oil-fired units to LNG
 - o Deployment of 550MW of supplementary energy through Corps of Engineers support generators for the short/medium term need until the more permanent development happens energy.
- a) Does anything prevent fast approval and implementation of all or parts of such a Strategy?

Response

The Energy Bureau is currently evaluating the request by Genera for conversion of the gas turbine units at Palo Seco, Mayaguez and Cambalache to LNG. The Energy Bureau has requested (and received) information from Genera on the underlying "fuel swap" economics and the associated technical assumptions used by Genera to produce estimates of cost savings from using a less expensive fuel.

On October 11, 2024, the Energy Bureau issued a Resolution and Order conditionally approving the fuel swap to have LNG be the primary fuel to be used in the Palo Seco Mega Gens.

Genera included a proposal to the Energy Bureau in its Stabilization Plan presentation²⁷ of considering procurement of 565 MW of "Supplemental Generation". The need for such Supplemental Generation is under review by the Energy Bureau.

- b) Would these actions come under the aegis of the recovery plans already approved for Puerto Rico or would they require substantial modifications to it?

Response

Certain components of the two actions are addressed in the recovery plans already approved for Puerto Rico. Full implementation would not require substantial modification of the approved recovery plans.

- c) Genera is a wholly-owned subsidiary of NFE, a LNG fuel supplier. Genera is motivated to reduce costs and receives a share of the costs savings per their contract. What safeguards are in place to ensure potential conflicts of interest between Genera and NFE are properly addressed and mitigated?

Response

The Energy Bureau has had detailed and in-depth conversations with the P3A²⁸ about the potential for conflicts of interest. P3A and the Energy Bureau have reviewed and approved Genera's Procurement Plan²⁹ which includes an organizational conflict of interest ("OCI") policy.

Genera's OCI mitigation plan states that P3A will use a third-party procurement office (3PPO) to conduct all procurements that involve a parent company or affiliate. If the award goes to the parent company or an affiliate, the 3PPO will review, approve, and administer the payments. The P3A is responsible for selecting and overseeing the 3PPO.

²⁷ Case No. NEPR-MI-2024-0005, September 9, 2024 filed presentation used during the September 11, 2024 Virtual Technical Workshop. See slides 38-41.

²⁸ Public-Private Partnership Authority ("P3A").

²⁹ See NEPR-MI-2023-0008.

- d) What is the timeline for allowing industrial customers to sell surplus power back to the grid to help stabilize the island's electrical infrastructure and what is the plan for permitting and rate setting?

Response

Sale of surplus power back to the grid is governed by the balancing energy terms included in Puerto Rico's Regulation on Electric Energy Wheeling.³⁰ Other than the provisions in the Wheeling Regulation, there is no mechanism for surplus power sales, as Puerto Rico does not have a spot energy market similar to US mainland RTO structures.

On January 22, 2024, the Energy Bureau issued a Final Resolution and Order ("January 22 Final R&O") in Case No. NEPR-MI-2023-0001 ("Wheeling Implementation") that approved the key agreements required to implement wheeling.³¹ In approving these agreements, the January 22 Final R&O addressed and clarified remaining open issues regarding the operation of electric power wheeling in Puerto Rico, including rate setting.

On February 12, 2024, LUMA filed a Motion for Partial Reconsideration of Final Resolution and Order of January 22, 2024 and Request for Further Process. After providing stakeholders an opportunity to respond to LUMA's motion, on April 24, 2024, the Energy Bureau denied LUMA's requests for reconsideration.

Given these decisions in early 2024, the remaining steps to implement wheeling primarily involve retail electricity suppliers constructing projects and signing up wheeling customers. Retail electricity suppliers will also need to work with LUMA to interconnect their projects with Puerto Rico's electric grid.

Regarding permitting, retail electricity suppliers are required to file a certification application that must be approved by the Energy Bureau, pursuant to the provisions of Regulation 8701. All remaining permitting requirements to construct a new generation facility involve other government entities.

Regarding rate setting, the final structure of the credits and charges to wheeling customers and retail electric suppliers was established in the January 22 Final R&O.

³⁰ Regulation 9374, Regulation on Electric Energy Wheeling. <https://energia.pr.gov/wp-content/uploads/sites/7/2022/06/9374ING-Wheeling-APril-20-2022.pdf>.

³¹ The January 22 Final Resolution and Order approved a Wheeling Services Agreement, Wheeling Services Agreement Application Form, and non-refundable fee. Regulation 9374 on Electric Energy Wheeling required the Energy Bureau to approve the final versions of these agreements to establish a wheeling program.

2. Background: The Puerto Rico Energy Policy requires that by 2025 there be 40% of electricity from renewable resources, going up to 100% by 2050. In the Hearing, Genera PR indicated the first number was not going to be reached and expressed doubts of the reaching of the end goal.

- a) Does PREB expect the 40% by 2025, 50% by 2030 goals to be reached in view of current trends and progress of work?

Response

The Energy Bureau is diligently working towards achieving these established targets.

- b) What would be required to be at pace to achieve the 100% by 2050 goal?

Response

To answer this question, the Energy Bureau refers the Committee to Case No. NEPR-MI-2020-0012 *In Re: Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modifies Action Plan* in which this issue is considered.

- c) Until the full renewables portfolio can be deployed does anything prevent PREB from approving other energy sources if they can be demonstrated to be economically viable?

Response

No, the Energy Bureau evaluates all energy sources presented during the IRP proceedings that are conducted by the Energy Bureau on a periodic basis.

3. One program that Luma has often quoted has been that of the use of a Virtual Power Plant (VPP) model by which users with their own distributed power or storage are available for dispatch through the grid operator.

- a) Is the Virtual Power Plant seen as a model for the deployment of renewables? Is this available reserve counted towards the Puerto Rico Law 17 of 2019 renewables Percentage?

Response

Yes, VPPs are viewed as a vehicle to encourage integration of renewable energy.

Yes, distributed renewable generation is counted towards the established Renewable Portfolio Standard.

4. What is the status of LUMA/PREB interconnection requirements for community and critical microgrids to expedite their interconnection to the grid? Does PREB believe LUMA is cooperating adequately with microgrid developers?

Response

Please see the *Interconnection Regulation* proceeding, Case No.NEPR-MI-2019-0009.³²

5. Puerto Rico's cheapest fuel-using power source, the AES power plant in Guayama, provides up to 454 MW of generation when running at capacity and is by law required to stop burning coal after 2027. That has been known since 2019.

- a) Have any specific plans been presented for replacement of this base load?

Response

Yes. The Modified Action Plan of the 2020 IRP Order included a plan for a portfolio of resource deployments that directly accounted for the retirement of the AES coal plant at the end of 2027, and accounts for the overall Puerto Rico system load variations at different time scales. Since the 2020 IRP Order, the Energy Bureau has subsequently approved specific capacity and energy resource developments to provide underlying capacity and energy delivery for the Puerto Rico system.³³

- b) How critical is this power unit to the stability of the grid?

Response

No one unit in Puerto Rico is itself critical to the grid in any future year, since the stability of the grid is based on the operation of all resources, including existing and operating resources and planned resources for future years. Stability does require maintenance of minimum levels of operational reserve. Restored existing capacity or new capacity is required to meet that need. As long as replacement capacity and energy resources deployed around the island are available in combination to the Puerto Rico system, stability can be maintained without the AES coal plant.

6. There has been a steady march through our doors of proponents of other ideas about how to address the Puerto Rico Energy Recovery that are not incorporated into the existing action plans but that they want the authorities to adopt,

³² See, available at: <https://energia.pr.gov/dockets/?docket=nepr-mi-2019-0009> (Last visited October 15, 2024).

³³ PREB R&Os: 1) ASAP concept approval; 2) Genera BESS and peaking resources; 3) Tranche 1 and 2 battery capacity; 4) customer battery energy storage (CBES) program.

including proposals for inter-island submarine power cables around the Caribbean, from both American-Based (starting with PR-USVI – Bob Garcia Interconnection) and Dominican Republic-Based (starting with PR-DR – Hostos project) proponents – that requires the governments of other jurisdictions, including foreign, to be aboard.

- a) Have these proposals been presented to you, and how viable and suitable for addition have you seen them?

Response

The proposals have not been formally provided to the Energy Bureau by the proponents. However, LUMA and Black and Veatch (LUMA's 2024 IRP technical contractor) did include a "Marine Cable to Dominican Republic" as one of its proposed supplementary scenarios for evaluation in the 2024 IRP process. The PREB will evaluate this scenario as part of the 2024 IRP process.

IV. Rep. Velázquez

Questions from Rep. Velázquez for Mr. Antonio Torres Miranda, Associate Commissioner, Puerto Rico Energy Bureau, San Juan, Puerto Rico

1. Why has LUMA not fulfilled its mandate to reduce energy rates and instead proposed multiple increases? Has the Energy Bureau considered imposing penalties for LUMA's failure to meet its obligation to reduce rates?

Response

LUMA has not petitioned the Energy Bureau for a rate revision. The Energy Bureau reviews budgets annually for LUMA, Genera and PREPA, which in accordance with LUMA's Operating Agreement are presented by LUMA and have not increased base rates.

The imposition of fines continues to be a tool for the PREB to utilize for failure of a certified electric power company to comply with the PREB's orders.

2. Do you consider LUMA has made the necessary grid investments to accommodate the growing number of households with solar and battery systems?

Response

LUMA has provided capital expenditures plans that take into consideration the integration of distributed resources. The Energy Bureau is monitoring how these plans unfold.

3. LUMA has failed to complete an Integrated Resource Plan for the island. What explanation has LUMA provided to the Bureau for this delay? Is the lack of this plan hindering Puerto Rico's progress toward renewable energy goals?

Response

As part of the IRP 2024 docket, this is presently *subjudice*. In regard to the delay of the submittal as ordered by the Energy Bureau, LUMA states that its technical contractor has encountered difficulties with the modeling software it is using to simulate the Puerto Rico system.

However, progress towards renewable energy goals continues independent of the IRP update, as the procurement process in place since the adoption of the Modified Action Plan of the 2020 IRP, remains. That process is focused on competitive procurement of renewables (solar PV or wind), and battery energy storage system solutions that

support the renewables integration. Procurement process obstacles, rather than an IRP update delay, are the key hindrance to Puerto Rico's progress towards renewable energy goals.

4. In July 2024, Genera PR submitted a "Stabilization Plan for the Electricity System" to the Puerto Rico Energy Bureau, which included a project to install supplementary generating units that would add 565 megawatts (MW) to the fleet. How has this project progressed? Has the Bureau noted any obstacles to its completion?

Response

This proposal is currently under the evaluation of the Energy Bureau with the technical assistance of the Electric Power Research Institute (EPRI) in Case No. NEPR-MI-2024-0005.³⁴

5. Is it true that last month LUMA requested the PREB an additional \$200 million per year? What were the reasons for this request? What impact would a budget increase of this size have on electricity rates?

Response

LUMA has not requested from the Energy Bureau an increase to its approved Fiscal Year 2025 budget.

6. Does the Energy Bureau have the authority to impose penalties on LUMA for underperformance in key reliability metrics? Has the Bureau imposed any penalties to date?

Response

The Energy Bureau employs performance-based regulation to oversee the electric utility under its jurisdiction and, yes, it has the authority to create an incentive framework where penalties for established underperformance are imposed. No penalties for underperformance have been imposed.

³⁴ Available at: <https://energia.pr.gov/dockets/?docket=nepr-mi-2024-0005> (last visited October 15, 2024).