

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

IN RE: REVIEW OF THE PUERTO RICO
ELECTRIC POWER AUTHORITY
INTEGRATED RESOURCE PLAN

CASE NO.: NEPR-AP-2023-0004

SUBJECT: LUMA Motion Requesting Late
IRP Filing and 5th Request of Information
(ROI).

RESOLUTION AND ORDER

I. Introduction

On December 17, 2021, LUMA¹ filed a *Motion to Submit Report on Resource Planning Process for Next IRP Cycle and Draft RFQ/RFP for IRP Consultant and Request for Confidential Treatment* ("December 17 Motion"). LUMA included an "IRP Status Update" with Key Milestones and Risks/Issues.

On July 1, 2022, LUMA filed a *Motion to Submit Status Update on Technical Consultant Contracting Process and Early Stages of 2024 IRP Preparation in Compliance with Energy Bureau Resolution and Order of April 22, 2022* ("July 1 Motion"). LUMA included a "2024 IRP Status Update" with Key Milestones and Risks/Issues.

On September 7, 2023, the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau") approved the revised technical contract between LUMA and its technical contractor, Black and Veatch ("B&V").

On October 24, 2023, LUMA submitted its responses to the first set of Requests of Information ("ROI") from the Energy Bureau. The responses to seven (7) multi-part questions contained parameters and assumptions to be used in resource modeling for the IRP². LUMA noted that responses may change as they develop the 2024 IRP.

On October 31, 2023, a Second Pre-Filing Technical Conference was held, during which initial technical discussions between B&V and Energy Bureau staff were initiated, and during which LUMA requested a filing extension beyond the planned March 2024 Integrated Resource Plan ("IRP") filing date.

On November 14, 2023, LUMA submitted a *Request for Modification of Timeline for 2024 IRP Filing to the Puerto Rico Energy Bureau* ("November 14 Request"). Included in the November 14 Request was an IRP Status Report which included a "2024 Revised IRP Schedule". The revised schedule indicated an eight-month time period between "Modeling of First Scenario" (November 2023) and "B&V Final Report" (June 2024). The revised schedule also included parallel LUMA activities³ associated with transmission system modeling that took place over six months, between January 2024 and June 2024.

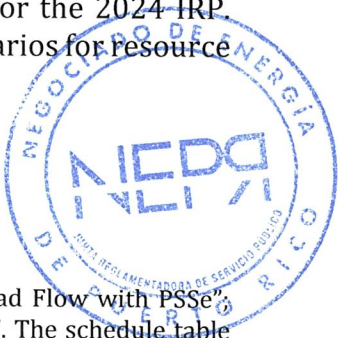
On December 20, 2023, the Energy Bureau issued a Resolution and Order ("December 20 Resolution") which approved LUMA's request to modify the initial Integrated Resource Plan ("IRP") filing submittal date (of March 2024) to June 28, 2024.

On January 30, 2024, a Third Pre-Filing Technical Conference was held for the 2024 IRP. LUMA's presentation during that conference included a set of planned scenarios for resource

¹ LUMA Energy, LLC and LUMA Energy ServCo, LLC (jointly referred as, "LUMA").

² Integrated Resource Plan ("IRP").

³ The listed activities included these three entries: "LUMA Eng. Benchmark PLEXOS Load Flow with PSSE", "LUMA Eng. Review PLEXOS results"; and "LUMA Eng. Transmission Modeling & Report". The schedule table also included other LUMA activities over the October 2023 through June 2024 period.



modeling and addressing transmission system issues associated with aspects of Regulation 9021, as contained in the agenda for the technical conference.

After several informal workshops with Energy Bureau staff and LUMA technical analysts, on March 11, 2024, LUMA filed a *Motion Submitting Revised 2024 Integrated Resource Plan Scenarios and Characteristics* ("March 11 Motion") which included in its attached Exhibit 1 a *Table 2: 2024 IRP Revised Scenarios and Characteristics (Core Scenarios)*, and a *Table 3: 2024 IRP Revised Scenarios and Characteristics (Supplemental Scenarios)*. Table 2 included six (6) core scenarios and Table 3 included four (4) supplemental scenarios. LUMA requested confirmation that it could continue modeling the scenarios as described in its March 11 Motion as part of its critical IRP modeling exercise.

On March 13, 2024, the Energy Bureau issued a Resolution and Order ("March 13 Resolution") affirming that LUMA could continue modeling the six core scenarios in LUMA's March 11 Motion for filing on June 28, 2024. The Energy Bureau also required LUMA to file the results of its Supplemental Scenarios analysis by August 1, 2024.

On April 1, 2024, LUMA submitted responses to the second set of ROIs issued by the Energy Bureau. The responses to eleven (11) multi-part questions had parameters and assumptions to be used in resource modeling for the IRP. LUMA noted that data, estimates and other information in the responses may change and may be revised as LUMA develops the 2024 IRP.

On April 15, 2024, the Energy Bureau issued a Resolution and Order ("April 15 Resolution") partially approving and partially denying LUMA's requests for waivers associated with existing distribution, and planned transmission and distribution facilities. The April 15 Resolution included the Energy Bureau determination that for the IRP, LUMA would need to submit its narrative description of planned transmission facilities, and include all considered projects in the description, even if projects are not yet vetted.

On June 7, 2024, LUMA filed a *Motion Requesting the Continuance of the Deadline for the 2024 IRP Filing*, ("June 7 IRP Motion"). The June 7 IRP Motion requests a continuance of the June 28, 2024 filing deadline for the 2024 IRP, due to modeling delays associated with its base case scenario. LUMA "anticipates having a base case scenario in the upcoming days" and stated that it will "be able to provide an updated schedule of the 2024 Filing no later than June 28, 2024, provided the base case resource plan has been completed".⁴

On June 7, 2024, LUMA filed responses to the third set of ROIs from the Energy Bureau which had ten (10) multi-part questions. LUMA noted that data, estimates and other information in the responses may change and may be revised as LUMA develops the 2024 IRP.

On June 18, 2024, the Energy Bureau issued a Resolution and Order ("June 18 Resolution") granting LUMA's request to file by June 28, 2024 a planned date of the expected IRP filing. The June 18 Resolution including a 4th Request of Information ("ROI") to LUMA, with LUMA's responses required by July 5, 2024.

On June 28, 2024, LUMA filed a *Motion in Compliance with Resolution and Order of June 18, 2024, and Submitting Second Revised IRP Filing Schedule* ("June 28 IRP Motion") with a request to file the 2024 IRP Report on May 16, 2025. Exhibit 1 to the June 28 IRP Motion includes an Attachment A "Second Revised 2024 IRP Schedule" and narrative explaining LUMA's reasoning for requesting a May 16, 2025, filing date.

LUMA states in the June 28 IRP Motion that "Given the complexities and specific ongoing challenges unique to Puerto Rico and in furtherance of LUMA's commitment to getting the 2024 IRP right for its customers, LUMA requests considerable additional time to produce an

⁴ LUMA, June 7 IRP Motion, paragraph 26, page 8.



IRP that complies with Applicable Law, including Act No. 57-2014⁵, Act No. 17-2019⁶ and Regulation 9021.⁷⁸

LUMA indicated in its June 28 IRP Motion it has resolved the modeling issues described in its June 7 IRP Motion and is in the process of “validating the final modeling results of the scenario 1 base case resource portfolio. The current understanding is that the modeling for the scenario 1 base case resource portfolio will conclude in July”.⁹

On July 3, 2024, LUMA filed responses to the 4th set of ROIs from the Energy Bureau.

On July 24, 2024, LUMA publicly posted the Monthly Generation Performance Report for June, 2024.¹⁰

LUMA has submitted descriptions of proposed transmission line and substation projects in numerous filings in the *In re. PREPA 10 Year Infrastructure Plan – December 2020*¹¹. As of LUMA’s July 31, 2024 filing in NEPR-MI-2021-0002, the Energy Bureau has approved all 261 initial scopes of work submitted for transmission and distribution projects.

The Energy Bureau will evaluate LUMA’s Integrated Resource Plan (“IRP”) under Regulation 9021.. Regulation 9021 includes extensive requirements for LUMA to submit technical information and conduct technical analyses towards the goal of developing a “Preferred Resource Plan” as part of a five-year Action Plan. It also states that it shall be interpreted “in a way that promotes the highest public good and the protection of the interests of the residents of Puerto Rico, and in such a way that the proceedings are carried out rapidly, justly and economically”.¹²

Regulation 9021 includes requirements for i) supply and demand side resource plan modeling, ii) describing existing and planned transmission and distribution systems, and iii) analyzing selected aspects of the reliability of transmission systems. Regulation 9021 also requires documenting the implications of the Preferred Resource Plan on incremental transmission and distribution needs.¹³

II. Discussion

LUMA’s request for extending the filing date for its 2024 IRP does not directly address the immediacy or the severity of Puerto Rico’s current operational situation. Puerto Rico’s frequency of loss of load events, one-hundred and eleven (111) over the past year (see Figure 1 below), is an unacceptable and immediate reliability problem. While the purpose of the IRP is not to deploy emergency resources to eliminate operational problems, there is nevertheless an immediate need to have an updated resource plan, especially one that

⁵ Known as the *Puerto Rico Energy Transformation and RELIEF Act*, as amended (“Act 57-2014”).

⁶ Known as the *Puerto Rico Energy Public Policy Act*, (“Act 17-2019”).

⁷ *Regulation on Integrated Resource Plan for the Puerto Rico Electric Power Authority*, Regulation 9021, April 24, 2018, (“Regulation 9021”).

⁸ LUMA June 28 Motion, page 1.

⁹ LUMA June 28 IRP Motion, page 5.

¹⁰ Available at <https://lumapr.com/wp-content/uploads/2024/07/June-2024-Monthly-Generation-Performance-Report-1.pdf>, (last visit, August 9, 2024).

¹¹ *In re: Review of the Puerto Rico Electric Power Authority’s 10 Year Infrastructure Plan – December 2020*, Case No.: NEPR-MI-2021-0002.

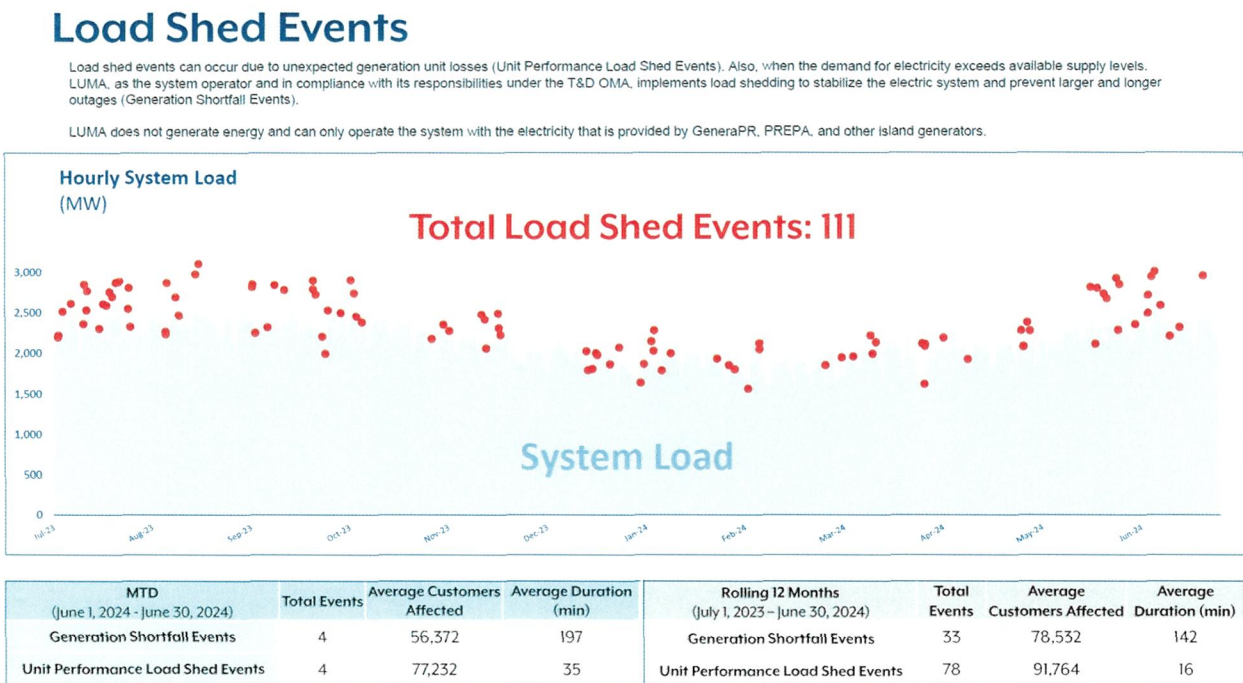
¹² Regulation 9021, Section 1.05 – Interpretation.

¹³ Regulation 9021 at Section 2.03 (J).



includes capacity resources with near-term deployment dates in addition to longer-term plans for an economically optimized capacity and energy resource base in line with Puerto Rico’s public policy.

Figure 1. Load Shed Events from the Monthly Generation Performance Report (June 2024)



Source: LUMA, Monthly Generation Performance Report, June 2024 (posted July 24, 2024).

Figure 1 above presents the most recent summary of Puerto Rico load shed events over the past year. As seen, customer outages due to generation shortfall or unit performance problems have been regular and continual. While there are also transmission-system related problems¹⁴ (which LUMA continues to address in part through transmission repair and rebuild projects using federal funds documented in case NEPR-MI-2021-0002), Puerto Rico is in particularly dire need of addressing its resource adequacy shortfall, through various forms of supply and demand side resource development, with varying deployment timelines.

The reliability problem shown in these data is not based on contingency assessment of transmission system conditions, or due to uncertainties in load forecasting or resource cost/performance parameters. While rigorous analysis of transmission considerations and resource scenario sensitivity analysis forms a basis of industry-standard IRP analysis, what is clear even without such analyses is that Puerto Rico needs an immediate increase in availability of existing and/or new capacity resources.

LUMA states it needs additional time to conduct the resource plan modeling, and then more time after selection of a preferred resource plan to conduct transmission system analysis for reliability.¹⁵ LUMA is using its technical contractor, Black and Veatch, to conduct the resource plan modeling. LUMA is using its own technical staff to conduct the transmission system assessment.

LUMA’s listing of “Ongoing and completed activities” (Table 2) in Exhibit 1 of the June 28 IRP Motion indicates commencement of some of the transmission analysis work required under Regulation 9021 as early as the July-October 2022 timeframe. Table 2 also shows current ongoing efforts at transmission system planning. In LUMA’s presentation at the Third Pre-Filing Period Technical Conference, LUMA illustrated its understanding of key transmission-related issues the Energy Bureau had identified from Regulation 9021 for consideration in

¹⁴ Transformer and line incidents over the past year have also contributed to significant customer outages.

¹⁵ LUMA June 28 Motion, page 5 and Exhibit 1, page 10.



this IRP.¹⁶ In numerous filings about the structure and sequencing of IRP resource analysis, LUMA has indicated an interdependency between resource plan modeling, and transmission system analysis of such resource plans, including iterative steps that seek to make sure the ultimately chosen preferred resource plan is supported by a reliable transmission system.¹⁷

LUMA's "Second Revised 2024 IRP Schedule" (June 28 IRP Motion, Table 4) also indicates parallel activities of scenario modeling, and transmission modeling during 2023 and 2024.

The Energy Bureau appreciates the challenges that LUMA described in its June 7 IRP Motion and in its June 28 IRP Motion about the complexity of electric system modeling.¹⁸ However, the Energy Bureau notes that LUMA has generally indicated it is planning parallel analytical activities in the resource modeling and transmission modeling spheres. Separate from IRP resource plan modeling, LUMA has continuing responsibilities for transmission system planning, and rebuild and repair of the system following the extensive damage done by extreme weather events.

LUMA has not shown in its June 28 IRP Motion any urgency to accelerate and streamline its modeling processes even though it has had its technical contractor on board for more than 10 months, even though it has been conducting preliminary IRP work since the beginning of 2022,¹⁹ and even though it is moving forward with its ongoing transmission system operation, planning, and repair obligations.

The Energy Bureau **DETERMINES** that LUMA's request to file a full IRP in May of 2025 does not reflect the urgency required of the Puerto Rico electric power system planner and system operator for an updated Puerto Rico resource development plan. To address the need to produce an updated resource development plan promptly, the Energy Bureau **DETERMINES** that a hybrid filing timeline will be used to address resource plan development and certain transmission system considerations under Regulation 9021.

The Energy Bureau **ORDERS** LUMA to file all IRP-related requirements associated with development of a Preferred Resource Plan, and some transmission and distribution system documentation requirements this calendar year. The Energy Bureau **ALLOWS** additional time into calendar year 2025 for LUMA to finalize certain aspects of its planned transmission and distribution system documentation and analysis under Regulation 9021, as follows.

The Energy Bureau **ORDERS** LUMA to file its IRP inclusive of the identification of a Preferred Resource Plan **by November 29, 2024**. LUMA's filing in November 29, 2024 is to focus on the capacity expansion and production cost modeling efforts undertaken by Black and Veatch as LUMA's technical contractor, and the development of a Preferred Resource Plan, and follow all Regulation 9021 requirements except for certain subsections of Section 2.03 J), Transmission and Distribution Planning. The Energy Bureau **ORDERS** LUMA to include the essence of Section 2.03 J) 1) a) through c), associated with the existing transmission and distribution system, in its **November 29, 2024** submission.

The Energy Bureau **EXPECTS** LUMA and its technical contractor to use honed professional judgement in analyzing resource development modeling results for both base case and

¹⁶ LUMA presentation, slides 13-39, January 30, 2024.

¹⁷ See, for example, LUMA December 17 Motion, Exhibit 1, at slide 5; LUMA January 25, 2022 Technical Conference presentation at slides 5-7; LUMA June 28 IRP Motion, at ¶ 26, page 6.

¹⁸ LUMA June 7 Motion, Exhibit 1, pages 6-8. June 28 IRP Motion at ¶¶ 19-21, page 5.

¹⁹ Table 2 of LUMA's Exhibit 1 of the June 28 IRP Motion lists an entire multi-tasked item (#3) of "Completed input assumptions and forecasts required for the 2024 IRP study" than spans the March 2022 to June 2024 time period.



alternative case scenarios in the next four months, even without the benefit of additional time to potentially iterate solutions in consideration of transmission reliability concerns. The Energy Bureau is not separating into two timeframes the filing of results for core scenarios and supplemental scenarios as ordered in the March 13 Resolution. The Energy Bureau **ORDERS** LUMA to file resource development plan results for all ten scenarios in the **November 29, 2024** filing.

The Energy Bureau recognizes this requires LUMA and B&V to streamline and expedite its resource plan development analysis, to determine a Preferred Resource Plan from among the options. The Energy recognizes that while Regulation 9021 requires LUMA to use the minimization of present value of revenue requirements as the primary selection criteria for considering a Preferred Resource Plan, the guidance in Regulation 9021 allows LUMA and B&V to discuss and consider other criteria in making its final determination of a plan. The Energy Bureau **EXPECTS** LUMA and B&V's testimony filings supporting the choice of a Preferred Resource Plan to expressly include all underlying logic and rationale supporting the Preferred Resource Plan.

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The Energy Bureau **ORDERS** LUMA to file the remaining Regulation 9021 requirements associated with Section 2.03 J) 1) d) through e) – that is, planned transmission and distribution facilities description, and Section 2.03 J) 2) Transmission and Distribution System Analysis, by **February 28, 2025** ("February 2025 Filing"). Notwithstanding the Energy Bureau's allowance for LUMA to file these aspects of the IRP requirements in 2025, the Energy Bureau **EXPECTS** LUMA to provide **at least** a summary qualitative description of how it expects planned transmission facilities will support its Preferred Resource Plan when it files the resource plan development components of the IRP on **November 29, 2024**.

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The Energy Bureau recognizes that Regulation 9021 transmission requirements, while listed sequentially, are not necessarily separable from each other, as there is overlapping and interactive aspects of different parts of the Regulation. The Energy Bureau **GRANTS** LUMA considerable leeway to include salient aspects of transmission analysis and development requirements of Regulation 9021 in the February 2025 Filing, even if those requirements may fall under the earlier subsections of Section 2.03 J). However, the Energy Bureau also **EXPECTS** LUMA to include aspects of planned transmission and distribution system development in the **November 29, 2024** filing if it is able to do so.

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LUMA is furthered **ORDERED** to respond to the Fifth Set of ROIs included as **Attachment A** to this Resolution and Order. LUMA **SHALL** file responses to these ROIs **on or before fifteen (15) business days after the notice of this Resolution and Order**.

III. Conclusion

1
The Energy Bureau **DENIES** LUMA's request to adopt its "2024 IRP Second Revised Schedule" filed in Exhibit 1 of the June 28 IRP Motion to allow for a full IRP filing on May 16, 2025.

The Energy Bureau has defined a hybrid timeline for filing requirements for the 2024 IRP. The Energy Bureau **ORDERS** LUMA to file the Preferred Resource Plan and salient components of Regulation 9021 requirements as described above in this Resolution and Order **by no later than Friday, November 29, 2024**.

The Energy Bureau further **ORDERS** LUMA to file certain transmission and distribution related requirements of Regulation 9021 **by no later than February 28, 2025**.

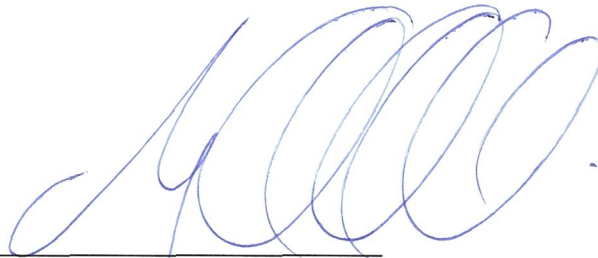
The Energy Bureau **WARNS** LUMA that:

- (i) noncompliance with this Resolution and Order, regulations and/or applicable laws may carry the imposition of fines and administrative sanctions of up to \$25,000 per day;

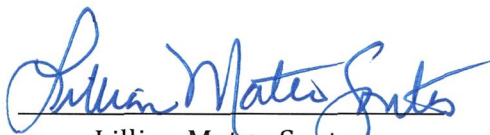


- (ii) any person who intentionally violates Act 57-2014, as amended, by omitting, disregarding, or refusing to obey, observe, and comply with any rule or decision of the Energy Bureau shall be punished by a fine of not less than five hundred dollars (\$500) nor over five thousand dollars (\$5,000) at the discretion of the Energy Bureau; and
- (iii) for any recurrence of non-compliance or violation, the established penalty shall increase to a fine of not less than ten thousand dollars (\$10,000) nor greater than twenty thousand dollars (\$20,000), at the discretion of the Energy Bureau.

Be it notified and published.



Edison Avilés Deliz
Chairman



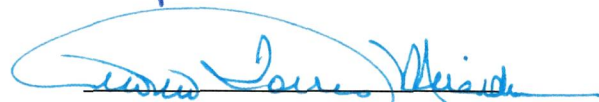
Lillian Mateo Santos
Associate Commissioner



Ferdinand A. Ramos Soegaard
Associate Commissioner



Sylvia B. Ugarte Araujo
Associate Commissioner



Antonio Torres Miranda
Associate Commissioner

CERTIFICATION

I certify that the majority of the members of the Puerto Rico Energy Bureau agreed on August 20, 2024. Also certify that on August 20, 2024, I have proceeded with the filing of this Resolution and Order and was notified by email to mvalle@gmlex.net; arivera@gmlex.net; margarita.mercado@us.dlapiper.com; Yahaira.delarosa@us.dlapiper.com; lrn@roman-negron.com; regulatory@genera-pr.com.

I sign this in San Juan, Puerto Rico, today, August 20, 2024.


Sonia Seda Gaztambide
Clerk

ATTACHMENT A

Fifth Request of Information (ROIs) to LUMA – 2024 IRP

1. File the base case scenario results, all input assumptions, and all related workpapers, with all quantitative materials that exist in Excel file format with formulas intact. This must include all transmission transfer capabilities modeled in PLEXOS between the eight transmission planning areas.
2. File all PLEXOS parameters used in the capacity expansion and production cost modeling exercise for the base case scenario.

