GOVERNMENT OF 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**: Motion Submitting Response to Request for Information No. 18 of the Second Set of Post- Filing 2025 IRP Request for Information in Further Compliance with Resolution and Order of February 13, 2026

MOTION SUBMITTING RESPONSE TO REQUEST FOR INFORMATION NO. 18 OF THE SECOND SET OF POST- FILING 2025 IRP REQUEST FOR INFORMATION IN FURTHER COMPLIANCE WITH RESOLUTION AND ORDER OF FEBRUARY 13, 2026

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COME NOW LUMA Energy, LLC ("ManagementCo"), and **LUMA Energy ServCo, LLC** ("ServCo"), (jointly referred to as "LUMA"), and respectfully state and request the following:

1. On October 17, 2025, LUMA filed the *Motion Submitting the 2025 Integrated Resource Plan (IRP) and Request for Confidential Treatment*, Puerto Rico Energy Bureau's (Energy Bureau) review of the 2025 IRP. In its filing, along with that Motion, LUMA submitted the 2025 IRP Report, along with the workpapers and models relied upon in its development.

2. On October 29, 2025, LUMA filed a *Memorandum of Law in Support of Request for Confidential Treatment of Revised 2025 IRP and Submission of Public Version and Confidential Version of Revised 2025 IRP*. LUMA submitted a revised, redacted version of the 2025 IRP Report, along with the workpapers and models relied on in its development, for public

disclosure.[1] Moreover, pursuant to this Energy Bureau's Policy on Confidential Information, LUMA filed the corresponding memorandum of law stating the legal basis for the request to treat certain portions of the revised version of the 2025 IRP and the workpapers and models relied on in developing the 2025 IRP confidentially.

3. Thereafter, on November 21, 2025, LUMA filed a *Motion Submitting the Transmission Needs Studies Report, Request for Confidential Treatment, and Memorandum in Support of Confidentiality*. LUMA submitted the Transmission Needs Studies Report in compliance with the portion of Regulation 9021 that requires LUMA to test the Preferred Resource Plan to determine any implications for the transmission and distribution system. It also filed a revised version of the pre-filed direct testimony of Dr. Ajit Kulkarni, Grid Modernization Manager, in support of the Transmission Needs Studies Report.

4. On December 3, 2025, the Energy Bureau issued a Resolution and Order directing LUMA to respond to the *First Set of 2025 IRP Post-Filing Request for Information* within fifteen business days ("December 3 Order"). The *First Set of 2025 IRP Post-Filing Request for Information* addresses 2025 IRP completeness, including the need for LUMA to provide further clarity on some aspects of the 2025 IRP Report and to provide further explanation and workpapers in support of the material filed.

5. On December 22, 2025, LUMA filed a *Motion Submitting Responses to the First Set of 2025 IRP Post Filing Request of Information in Compliance with Resolution and Order of December 3, 2025*. Therein, LUMA submitted narrative responses to all questions, except those that required the data referenced in question four of the *First Set of 2025 IRP Post-Filing Request*

[1] The revised version differed from the version filed on October 17, 2025, in that it addressed some grammatical errors and formatting issues, and revised the data presented in Tables 66, 67, and 68, specifically the values in the second column labeled "PR100 Cost Scaling Factor." It also revisited some of the confidential designations originally made.

for Information. LUMA requested an extension to submit no later than January 15, 2026, the hourly data requested in question four of the *First Set of 2025 IRP Post-Filing Request for Information*, along with detailed responses to questions 4b, 4c, 4d, and 8d, which are directly related to that data.

6. On December 23, 2025, the Energy Bureau issued a Resolution and Order granting LUMA until January 15, 2026, to submit the hourly data of all Scenarios along with detailed responses to questions 4b, 4c, 4d, and 8d, which are directly related to that data.

7. On January 15, 2026, LUMA filed a *Motion Submitting Supplemental Responses to the First Set of 2025 IRP Post Filing Request for Information, Request for Confidential Treatment, and Memorandum in Support of Confidentiality*. Therein, LUMA submitted detailed responses to questions 4b, 4c, 4d, and 8d of the *First Set of 2025 IRP Post-Filing Request for Information*, along with the hourly data requested in question four.

8. On February 13, 2026, the Energy Bureau issued a Resolution and Order deeming LUMA's 2025 IRP filing complete for meeting Regulation 9021 requirements ("February 13th Order"). However, the Energy Bureau determined that additional material from LUMA is needed to ensure a comprehensive record from which to continue the review of the 2025 IRP and LUMA's proposed Preferred Resource Plan. Accordingly, the Energy Bureau directed LUMA to submit the information required in Appendix A of the February 13th Order within the next fifteen business days, by March 9, 2026.

9. On March 9, 2026, LUMA filed a *Motion Submitting Responses to Further Requests for Information in Compliance with Resolution and Order of February 13, 2026, Request for Confidential Treatment, and Memorandum in Support of Confidentiality*. LUMA submitted its responses to the requests for information included in Appendix A of the February 13th Order. It

also requested a brief extension of time until Wednesday, March 11, 2026, to submit its response to Request for Information No. 18 of Appendix A of the February 13th Order

10. In further compliance with the February 13th Order, LUMA hereby submits its responses to Request for Information No. 18 of the Appendix A of the February 13th Order, as *Exhibit 1* to this Motion.

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the above information; **accept** the responses to Request for Information No. 18 of the Appendix A of the February 13th Order as *Exhibit 1* of this Motion, ***and*** **deem** LUMA to have complied with the February 13th Order.

WE HEREBY CERTIFY that this Motion was filed using the electronic filing system of this Energy Bureau and that electronic copies of this Motion will be notified to the Puerto Rico Electric Power Authority: Alexis Rivera, alexis.rivera@prepa.pr.gov, and through its counsel of record, Natalia Zayas Godoy, nzayas@gmlex.net, Richard Cruz Franqui, rcruzfranqui@gmlex.net, and Mirelis Valle Cancel, mvalle@gmlex.net, and Genera PR, LLC, through its attorney of record Luis R. Román Negrón, lrn@roman-negrom.com.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, on March 11, 2026.

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Exhibit 1

2025 Integrated Resource Plan

(2025 IRP)

Attachment A Response to Question 18 of the Second Set of 2025 IRP Post-Filing Request for Information (RFI)

LUMA

Attachment A
NEPR-AP-2023-0004

INTRODUCTION

On March 9, 2026, LUMA filed its Responses to the Second Set of 2025 IRP Post Filing RFIs issued by the Puerto Rico Energy Bureau in its February 13, 2026, Resolution and Order[1], and requested an extension until Wednesday, March 11, 2026, to submit the response to Questions 18 regarding DER.

LUMA hereby submits its response to Question 18 of the Second Set of 2025 IRP Post Filing RFIs.

[1] Id.

List of Acronyms

ACRONYM	DEFINITION
DER	distributed energy resources
IEEE	Institute of Electrical and Electronics Engineers
FY	fiscal year
DPV	distributed solar photovoltaic
MW	megawatt
MWh	megawatt-hour
IRP	Integrated Resource Plan
PV	solar photovoltaic
RFI	request for information
R&O	resolution and order

Attachment A
NEPR-AP-2023-0004

Response: RFI-LUMA-AP-2023.0004-20251203-PREB-0018

SUBJECT

Appendix 1 Transmission and Distribution Plan; 2.03 (J) (1) (e); Planned Distribution Facilities Description- The IRP shall provide a detailed narrative description of any planned changes in approach, standard practice, or broadly applicable substation, circuit, or feeder design for PREPA's distribution system for the next ten years. This description shall address any changes in distribution facilities that impact the ability to accommodate incremental penetration of distributed generation, including intermittent distributed generation, and the ability to receive new loads over time. PREPA shall submit a substantiation of distribution development plans, including, if available.

REQUEST

18.1 LUMA needs to provide a much fuller description of how the distribution system can accommodate incremental penetration of distributed generation – as opposed to just documenting the concerns that DERs bring, especially concerning voltage issues. There are references to distribution upgrades but there is no concise distillation that describes how LUMA is proactively planning for such an updated system to accommodate more DERs. The distribution section seems to indicate that LUMA envisions DERs as a reliability burden, as opposed to planning to accommodate the resources, given that they are currently being installed at roughly 240 MW per year (e.g., PV) with additional small battery systems.

18.2 Provide a further explanation, with specificity, of what LUMA is proactively planning to do to accommodate incremental penetration of distributed generation.

RESPONSE

18.1 Current regulations allow customers to automatically connect DERs, regardless of whether that connection results in a violation of equipment ratings, because no studies are performed prior to the interconnection. Coupled with policies limiting collection of fees to subsequently perform necessary impact studies and the absence of a mechanism to fund required upgrades, execution of investments and other initiatives to upgrade the system to accommodate incremental DER installations is severely hindered.

Uncoordinated interconnection of DERs carry real risks and measurable impacts. Equipment ratings are safety measures; they identify the parameters at which it is safe to operate the equipment. If a significant number of customers connect DER to an overloaded location, the equipment can exceed its safety ratings, resulting in potential overheating, fire, transformer explosions as well as incrementally unreliable service from the grid. Individuals and structures in the area could be hurt, and the broader system damaged as the surge cascades across the lines.

The impacts of DER overloading are not limited to the distribution system. Aggregated DERs offset the use of conventional generation which typically provides inertia from the rotating masses of large turbines, which provide frequency response to grid disturbances. Without that

frequency regulation, a greater portion of the system can become unstable, heightening the risk of large-scale outages.

LUMA has identified a multi-step plan to address the issues to help increase DER integration, which is discussed below. These steps are necessary for that integration to occur safely and to maintain reliability. But to be effective, they require dedicated and predictable funding sources and changes in existing policies that enable system upgrades to catch up to current DER penetration levels and then to maintain an investment pace that supports continued growth of these resources.

18.2 LUMA's proactive planning for additional forecasted DER interconnections includes:

- Implementation of Smart-Inverter Volt/VAR and Volt/Watt Settings consistent with IEEE 1547-2018 – "Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces", which slow the pace at which voltage violations occur on the circuit to which the customer is connecting. This "can create additional headroom" to interconnect more DERs with fewer distribution upgrades, provided that all historically connected DG on that circuit adopt the Smart-Inverter Settings. However, LUMA has also identified circuits with such a high penetration of DERs, that implementation of Smart Inverter Settings on every inverter would improve circuit performance in the short-term and mid-term, but not allow future interconnections until infrastructure upgrades are implemented. LUMA submitted for approval recommended updated Smart Inverter Settings in June 2025.

- Implementation of Smart Inverter High and Low Voltage and Frequency Ride-Through Settings and Disconnect and Reconnect timeline settings. These settings are recommended primarily to respond to grid frequency issues (related to loss of large central-station generation) and transmission faults. This also has been widely documented and included in the standard to allow higher volumes of small DER connections while maintaining grid stability within defined limits.

- Investments in Advanced Metering Infrastructure deployments will provide direct time-stamped measurement of customer loads, generation injection, and voltages to help guide planning and investment decisions. Advanced Metering Infrastructure will allow for customers who experience high or low voltage to be identified, and pockets of the transmission and distribution system can be planned for infrastructure upgrades that improve the ability to connect future DERs.

- As identified in the 2025 IRP Report, further engagements with customer technologies to better align PV production (mid-day when load is lowest) with peak demands (late evenings when demand is highest) through customer battery energy sharing programs, and/or requirements for non-export systems that charge the battery in the mid-day and discharge every evening over peak have the potential to significantly align the value of DER with system needs, which also help drive decarbonization targets.

- LUMA's recent rate-case filing requested funding for upgrading distribution circuit infrastructure to first address the most urgent safety and reliability impacts when studies of already connected DPV systems identify that they cause thermal overloads (like home transformers) or voltage violations (that cause high voltage that can damage customer electronics and home equipment).

    - As of January 2026, LUMA performed feeder-level studies to better understand the impact of aggregate interconnections on a circuit. Over 771 feeders were studied, covering 123,000 DER installations, and the analysis revealed that 85% of feeders experience thermal or voltage violations.

- LUMA has developed publicly available hosting capacity and DER penetration maps for developers and customers to understand grid conditions and to understand where high penetrations exist and where upgrades are likely to be needed. However, this tool has not yielded the expected results for customers, developers, or LUMA as these systems continue to connect automatically regardless of feeder capacity. LUMA suggests process improvements that limit feeder interconnection where violations exist but have not been resolved.
- Over 6,000 pieces of equipment have been forecasted to require upgrade over the 3-year period covered in the Rate Case FY26 – FY28. Some of this equipment is already overloaded or at risk and will fail if not replaced, causing extended outages for all customers. Conversely – proactively addressing these items could yield better customer experience but require grid investments.

Table 8: Forecasted Grid Investments due to Increased DER penetration.

Equipment	Quantity
Transformer upgrades	3,316
Cap bank conversions	2,648
Feeder segment upgrade	69
Voltage regulators	62
Switch installations	14

LUMA remains committed to providing safe, reliable, and affordable service for all customers. This obligation necessitates identifying unsustainable technical and economic practices. LUMA remains committed to working collaboratively to establish sustainable policies and regulations, and provide solutions that drive safe, reliable and affordable service for all of Puerto Rico's customers.