

**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 Revised 2024
IRP Scenarios and Characteristics

NEPR

Received:

Mar 11, 2024

10:31 PM

**MOTION SUBMITTING REVISED 2024 INTEGRATED RESOURCE PLAN
SCENARIOS AND CHARACTERISTICS**

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 December 20, 2023, this Puerto Rico Energy Bureau (“Energy Bureau”) issued a Resolution and Order (“December 20th Order”) in this proceeding whereby it ordered LUMA to attend the third in-person prefilings technical conference scheduled for January 30, 2024 (the “Third Prefiling Technical Conference”).

2. As directed by the Energy Bureau in the December 20th Order, on January 25th 2024 LUMA submitted a presentation to be used during the Third Prefiling Technical Conference and which included the various topics identified by the Energy Bureau for discussion during such conference.

3. In addition to the topics identified by the Energy Bureau, the presentation also included, for informational purposes only, an update to LUMA’s Solutions for the Energy Transformation of Puerto Rico (SETPR) process, a stakeholder collaboration initiative put in place by LUMA to gather insight and valuable data from multiple stakeholders with the intent of informing the initial determinations to be made by LUMA in connection with the development of its 2024 Integrated Resource Plan (2024 IRP) proposal.

4. Page 55 of the presentation included the Initial Selected Scenarios and Characteristics identified by LUMA to be modeled in connection with its 2024 IRP proposal. The Selected Scenarios and Characteristics were identified and developed by LUMA taking into account the results and feedback from the SETPR stakeholder collaboration initiative.

5. During the Third Prefiling Technical Conference the Energy Bureau, and its consultants, raised certain concerns regarding the Initial Selected Scenarios and Characteristics displayed by LUMA in the presentation.

6. Based on the Energy Bureau's, and its consultants' feedback, and continuing to take into account the results and feedback from the SETPR process and meetings, LUMA hereby submits the 2024 IRP Revised Scenarios and Characteristics incorporating the feedback from the Energy Bureau and its consultants. *See* Exhibit 1 to this Motion. It is LUMA's understanding that the 2024 IRP Revised Scenarios and Characteristics include the preferences and priorities of the Energy Bureau, as such preferences and priorities were expressed to LUMA.

7. LUMA is currently carrying out the time-sensitive work needed to develop and file a robust 2024 IRP proposal by June 28, 2024, the filing date established by the Energy Bureau in its December 20th Order.

8. With the intent of meeting the June 28th filing deadline, prior to the Third Prefiling Technical Conference, LUMA had already begun working with its technical consultant in modeling to develop the 2024 IRP proposal. In light of the Energy Bureau's, and its consultants' feedback, LUMA delayed part of the modeling work necessary for the 2024 IRP to revise the scenarios. To achieve the June 28th filing deadline, LUMA is proceeding with the critical and time-consuming modeling exercise under the assumption that the 2024 IRP Revised Scenarios and Characteristics are final and that no further modifications by the Energy Bureau will be forthcoming. Confirmation by this Energy Bureau of its agreement with the 2024 IRP Revised Scenarios and Characteristics included in *Exhibit 1* to this Motion, will allow LUMA to continue its modeling exercise while still being able to achieve the June 28th filing deadline.¹

WHEREFORE, LUMA respectfully requests the Energy Bureau to **take notice** of the foregoing and **confirm** that LUMA can continue with the critical modeling exercises necessary to develop its 2024 IRP proposal based on the 2024 IRP Revised Scenarios and Characteristics listed in *Exhibit 1* to this Motion.

RESPECTFULLY SUBMITTED.

¹ While finalizing the submission of 2024 IRP Revised Scenarios and Characteristics, LUMA received earlier today a Resolution and Order whereby this Energy Bureau issued a Second Set of IRP Prefiling Period Requests for Information ("Second Prefiling ROI") and directed that LUMA shall file its responses by April 1, 2024 at 5:00pm. *See* Resolution and Order of March 11, 2024. LUMA will submit its responses to the Second Prefiling ROI as requested. LUMA notes that it anticipates that the 2024 IRP Revised Scenarios and Characteristics that are submitted as *Exhibit 1* to this Motion include information relevant to questions 5, 6, 7 and 11 of the Second Prefiling ROI and thus, LUMA may use the Second Prefiling ROI to respond to those questions on or before April 1st.

I 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: lionel.santa@prepa.pr.gov and through its attorneys of record González & Martínez, Mirelis Valle-Cancel, mvalle@gmlex.net; and Alexis G. Rivera Medina, arivera@gmlex.net; and Genera PR, LLC: brannen@genera-services.com; kbolanos@genera-pr.com; regulatory@genera-pr.com .

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, on March 11, 2024



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Exhibit 1



Exhibit 1
LUMA 2024 IRP
Revised Scenarios and Characteristics

NEPR-AP-2023-0004
March 11, 2024

2024 INTEGRATED RESOURCE PLAN REVISED SCENARIOS AND CHARACTERISTICS

1. INTRODUCTION

LUMA is committed to supporting and advancing the transformation of Puerto Rico's current energy system into a more resilient, cleaner, and sustainable system for everyone. LUMA recognizes its responsibility as a transmission and distribution system operator to develop a 2024 Integrated Resource Plan (2024 IRP) that maps out the transformation of the island's energy resources over the next two decades to achieve a shared goal of a brighter energy future for Puerto Rico.

LUMA is developing a 2024 IRP that is pragmatic, based on the best available data of the current system and that aims to meet the goals of Puerto Rico's public energy policy and applicable regulations. To date, LUMA has facilitated open dialogue and fostered collaboration among stakeholders to address the priorities of customers and gather ideas on how to best define Puerto Rico's clean energy future for a more reliable, modern and economically affordable service that can drive Puerto Rico's economic development for decades to come. LUMA has also taken in constructive feedback from the Puerto Rico Energy Bureau.

2024 INTEGRATED RESOURCE PLAN REVISED SCENARIOS AND CHARACTERISTICS

2. BACKGROUND

As part of LUMA's efforts to develop a more transparent and inclusive 2024 IRP for Puerto Rico, in October 2023 LUMA launched Solutions for the Energy Transformation of Puerto Rico (SETPR). SETPR is a stakeholder collaboration initiative put in place by LUMA to gather insight and valuable data from stakeholders on the objectives and plans for the development of the 2024 IRP and to gather feedback on the results of the 2024 IRP prior to its filing with the Energy Bureau. As of the date of this filing, LUMA has completed a total of 22 stakeholder workshops with over 165 participants across eight different municipalities in Puerto Rico. Participating stakeholders included private companies, governmental agencies, professional and commercial associations, community groups, and individuals. The main objective of these SETPR meetings and workshops was to discuss the general requirements of the 2024 IRP under Regulation 9021 and invite a broad range of stakeholders to recommend objectives and future scenarios that they would like to see included in the 2024 IRP. LUMA identified a set of scenarios for the 2024 IRP that incorporated recommendations received during these workshops. These scenarios were presented to stakeholders during meetings held from January 15 to February 8, 2024. During these meetings, participating stakeholders agreed with the scenarios presented, recognizing that their recommendations and concerns were addressed.

On January 30, 2024, the Energy Bureau held the Third Prefiling IRP Technical Conference (*January 30th Technical Conference*) to discuss certain elements of Regulation 9021 regarding the features of the transmission system. During the January 30th Technical Conference, LUMA chose to provide an update on the SETPR initiative and stakeholder engagements. As part of the discussion, LUMA presented on page 55 of the presentation the Initial Selected Scenarios and Characteristics identified by LUMA to be modeled in connection with its 2024 IRP proposal. These scenarios and characteristics were identified and developed by LUMA taking into account the results and feedback from the SETPR initiative and stakeholder engagements. The Energy Bureau expressed concern about the presented scenarios, specifically regarding: 1) the percentage of energy efficiency included, 2) the percentage of customer batteries that would be modeled as flexible demand resources, and 3) the number of scenarios proposed by LUMA. LUMA explained that the matrix of scenarios reflected a range of plausible and realistic scenarios selected and developed based on feedback from stakeholders and current information regarding Puerto Rico's economic and infrastructure conditions and as requested by the Energy Bureau, and its consultants.

2024 INTEGRATED RESOURCE PLAN REVISED SCENARIOS AND CHARACTERISTICS

Table 1 below shows LUMA's Initial Selected Scenarios and Characteristics that were presented to Stakeholders in various workshops held between January 15 to February 8, 2024, and to the Energy Bureau at the January 30th Technical Conference.

2024 INTEGRATED RESOURCE PLAN REVISED SCENARIOS AND CHARACTERISTICS

3. LUMA'S REVISED SCENARIOS AND CHARACTERISTICS

Based on the feedback from the Energy Bureau, and its consultants, LUMA made modifications to the Initial Selected Scenarios and Characteristics, while continuing to take into account feedback and recommendations provided by stakeholders. These modified scenarios are shown as the 2024 IRP Revised Scenarios and Characteristics in Table 2 and Table 3 below.

The 2024 IRP Revised Scenarios and Characteristics are divided into two separate filings: 1) Six (6) Core Scenarios results that will be included with the 2024 IRP report complying with all Regulation 9021 requirements filed by June 28, 2024; and 2) up to four (4) Supplemental Scenarios results that will be filed after June 28, 2024.

The 2024 IRP Revised Scenarios and Characteristics were developed incorporating the Energy Bureau's priorities and preferences, while also retaining the recommendations provided by the stakeholders and LUMA's goal to produce scenarios that offer broad and plausible views of future conditions that will provide analytically meaningful results.

LUMA believes that the 2024 IRP Revised Scenarios and Characteristics represent reasonable and prudent scenarios for the 2024 IRP and offer several advantages:

- 1) They are aligned with the input received from stakeholders during the SETPR workshops;
- 2) The first six (6) Core Scenarios provide sufficient coverage of possible characteristics enabling LUMA to execute a comprehensive portfolio analysis; and
- 3) The scenarios are effectively segmented into two planned filings, that retain LUMA's confidence in its ability to file the 2024 IRP by June 28, 2024, and allow for additional time to complete and file the Supplemental Scenarios.

In order to achieve the June 28, 2024 filing deadline, LUMA is proceeding to model the 2024 IRP Revised Scenarios and Characteristics. Further modifications to the scenarios being analyzed will inevitably affect LUMA's capacity to meet the 2024 IRP filing deadline of June 28, 2024.

2024 IRP REVISED SCENARIOS AND CHARACTERISTICS

Table 1: LUMA’s Initial Selected Scenarios and Characteristics

| # | Scenario Name | Characteristics | | | | | | | | | | |
|---|---|-----------------|---------|------------|-------------------------------|--------------|-----------------------|------------------|---------------------|----------------------|----------------------------|------------------|
| | | Load Growth | PV Cost | DER Growth | % Distributed Storage Control | Storage Cost | New Gas Units Allowed | Fossil Fuel Cost | Biodiesel Fuel Cost | EV Growth | Energy Efficiency Forecast | Land Use |
| 1 | Base Assumptions | Base | Base | Base | 0% | Base | Yes | Base | Base | Adjusted PR100- Base | PR100- Base | PR100- More Land |
| 2 | Plentiful Biodiesel at Cost of Diesel | Base | Base | Base | 0% | Base | Yes | Base | Low | Adjusted PR100- Base | PR100- Base | PR100- More Land |
| 3 | High Distributed Solar and Storage Growth | Base | Base | High | 20% | Low | Yes | Base | Base | Original PR100- High | PR100- Base | PR100- More Land |
| 4 | Accelerated Load Loss | Low | Base | Base | 0% | Base | No | High | Base | Adjusted PR100- Base | PR100- Base | PR100- More Land |
| 5 | Optimistic load growth and costs | High | Low | High | 20% | Low | Yes | Low | Base | Original PR100- High | PR100- Base | PR100- More Land |
| 6 | Less Ag land use | Base | Base | Base | 0% | Base | Yes | Base | Base | Adjusted PR100- Base | PR100- Base | PR100- Less Land |
| 7 | Act 17 EE | Base | Base | Base | 0% | Base | Yes | Base | Base | Adjusted PR100- Base | PR100 Act 17 | PR100- More Land |
| 8 | Marine Cable | Base | Base | Base | 0% | Base | Yes | Base | Base | Adjusted PR100- Base | PR100- Base | PR100- More Land |



2024 INTEGRATED RESOURCE PLAN REVISED SCENARIOS AND CHARACTERISTICS

Table 2: 2024 IRP Revised Scenarios and Characteristics (Core Scenarios)

| Scenario | Scenario Name | Load Growth | DER Growth /PV/BESS | PV Cost | Agriculture Land Use | Storage Cost | Resource Capital Cost | Fossil Fuel Cost | Energy Efficiency | DBESS Control (%) | | | | |
|---|------------------------------------|-------------|---------------------|---------|----------------------|--------------|-----------------------|------------------|-------------------|-------------------|------|------|------|------|
| | | | | | | | | | | 2025 | 2030 | 2035 | 2040 | |
| Core Scenarios, to be Included in IRP Filing (June 28th) | | | | | | | | | | | 2025 | 2030 | 2035 | 2040 |
| 1 | Base Assumptions | Base | Base/ Base | Base | Less Land | Base | Base | Base | PR100-Base | 5 | 10 | 10 | 10 | |
| 2 | System Stress Scenario | High | Low/ Low | High | Less Land | High | High | Base | PR100-Base | 0 | 0 | 0 | 0 | |
| 3 | More Agriculture Land Use | Base | Base/ Base | Base | More Land | Base | Base | Base | PR100-Base | 5 | 10 | 10 | 10 | |
| 4 | Optimistic Load Growth and costs | High | High/ High | Low | More Land | Low | Low | Low | PR100-Base | 5 | 15 | 20 | 20 | |
| 5 | Accelerated Load Loss | Low | Base/ Base | Base | Less Land | Base | Base | High | PR100-Base | 5 | 15 | 20 | 20 | |
| 6 | Max DBESS Control Scenario-High EE | Base | High/ High | Low | More Land | Low | Low | Base | Act 17 EE hi ramp | 10 | 30 | 50 | 60 | |

Table 3: 2024 IRP Revised Scenarios and Characteristics (Supplemental Scenarios)

| Scenario | Scenario Name | Load Growth | DER Growth /PV/BESS | PV Cost | Agriculture Land Use | Storage Cost | Resource Capital Cost | Fossil Fuel Cost | Energy Efficiency | DBESS Control (%) | | | | |
|--|---|-------------|---------------------|---------|----------------------|--------------|-----------------------|------------------|-------------------|-------------------|------|------|------|------|
| | | | | | | | | | | 2025 | 2030 | 2035 | 2040 | |
| Additional Scenarios, to be Included in Supplemental Filing (After June 28th) | | | | | | | | | | | 2025 | 2030 | 2035 | 2040 |
| 7 | Less Ag land use - Max DBESS Control Scenario | Base | High/ High | Low | Less Land | Low | Base | Base | PR100-Base | 10 | 30 | 50 | 50 | |
| 8 | Accelerated Load Loss and High EE | Low | Base/ Base | Base | Less Land | Base | Base | High | Act 17 EE | 5 | 10 | 10 | 10 | |
| 9 | High Distributed Solar and Storage Growth | Base | High/ High | Low | More Land | Low | Low | Base | PR100-Base | 5 | 20 | 30 | 40 | |
| 10 | Marine Cable to Dominican Republic | Base | Base | Base | Less Land | Base | Base | Base | PR100-Base | 5 | 10 | 10 | 10 | |

