

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

**NEPR**

**Received:**

**Jan 5, 2022**

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**IN RE:**

**PUERTO RICO TEST FOR DEMAND  
RESPONSE AND ENERGY EFFICIENCY**

**CASE NO.:** NEPR-MI-2021-0009

**SUBJECT:** Motion Submitting Responses to Data Requests of Attachment A to December 14th Resolution and Order and Requesting Clarifications and Request for Confidential Treatment.

**MOTION SUBMITTING LUMA'S RESPONSES TO DATA REQUESTS OF  
ATTACHMENT A TO DECEMBER 14<sup>TH</sup> RESOLUTION AND ORDER AND  
REQUESTING CLARIFICATIONS AND REQUEST FOR CONFIDENTIAL  
TREATMENT**

**TO THE PUERTO RICO ENERGY BUREAU:**

**COME NOW LUMA Energy, LLC<sup>1</sup>, and LUMA Energy ServCo, LLC<sup>2</sup>** (jointly referred to as "LUMA") and respectfully state, submit and request the following:

1. On August 13, 2021, this honorable Energy Bureau issued a Resolution and Order in the instant case ("August 13<sup>th</sup> Resolution") requesting LUMA and PREPA to, by August 18<sup>th</sup>, 2021, provide the Energy Bureau responses to a request for information included as Attachment A to the August 13<sup>th</sup> Order (the "August 18<sup>th</sup> Attachment A").

2. On August 17, 2021, LUMA filed before the Energy Bureau a motion requesting that the Energy Bureau stay the August 13<sup>th</sup> Resolution and schedule a Technical Workshop "to present the need for an avoided cost study in this proceeding, and, if such study is required, the acceptance of the [m]arginal [c]ost [s]tudy as part of the [proceeding *In Re: the Unbundling of the*

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<sup>1</sup> Register No. 439372.

<sup>2</sup> Register No. 439373.

*Assets of the Puerto Rico Electric Power Authority*, in NEPR-AP-2018-004 (the “Marginal Cost Study”)] for use within the avoided cost study and/or the proposed approach to develop the avoided cost study, the methodology thereof, alignment with the Marginal Cost Study, the cost effectiveness of having the Energy Bureau perform this study, and any other matters relevant to the information requests in Attachment A of the August 13<sup>th</sup> Order.” See *LUMA’s Motion Requesting Energy Bureau to Stay Resolution and Order of August 13, 2021 and Schedule Technical Workshop* of that date at page 6.

3. On October 27, 2021, the Energy Bureau issued a Resolution and Order (“October 27<sup>th</sup> Order”) ordering LUMA to attend a Virtual Technical Conference “to address the question on the request for information regarding avoided costs included as part of the August 13 Resolution and to clarify the scope, process and schedule for such work effort.” See October 27<sup>th</sup> Order, page 1. The Energy Bureau added that the discussion during such Technical Conference would include, but not be limited to: “1. The need for an avoided cost study in the PR Test Proceeding, 2. LUMA’s suggestion to utilize aspects of their marginal cost study to inform the avoided costs, and 3. clarify the Energy Bureau’s request for information to LUMA regarding input data to the avoided cost modeling.” See *id.*

4. The Technical Conference was held on November 18, 2021. Energy Bureau consultants offered a presentation. Collaborative discussions were had on data requested by the Energy Bureau consultants and LUMA representatives offered explanations on data that LUMA may provide. Additionally, LUMA representatives and consultants offered suggestions and considerations for this proceeding.

5. On December 13, 2021, LUMA filed with the Energy Bureau a *Motion Submitting LUMA's Comments and Suggestions* (“LUMA’s December 13<sup>th</sup> Motion”) providing comments, proposals, recommendations, and concerns for consideration of this Energy Bureau in this proceeding, included in an Exhibit A to LUMA’s December 13<sup>th</sup> Motion. Among others, LUMA proposed an approach to advancing Energy Efficiency and Demand Response programs that included integrating the activities of six active dockets that involve distributed energy resources (DER); detailed its concerns that multiple studies on benefit-cost analyses and avoided costs are being conducted across different Energy Bureau proceedings subject to different types of procedural guarantees (e.g., adjudicatory v. regulatory proceeding), and recommended that if a different avoided cost study was to be adopted in this proceeding, an adjudicative proceeding be convened; and commented on the comparisons made by the Energy Bureau consultants during the November 18<sup>th</sup> Technical Conference between marginal and avoided cost studies. *See* LUMA’s December 13<sup>th</sup> Motion at pages 3-4 and Exhibit A.

6. On December 14, 2021, the Energy Bureau issued a Resolution and Order determining that “the Avoided Cost Study continues to have merit and should proceed on the originally planned timeframe.” December 14<sup>th</sup> Resolution and Order at page 1. The Energy Bureau further “reiterated its intention to share the methods and initial results of the Avoided Cost Study and schedule[d] a Technical Conference for that purpose” (*id.*) which was scheduled for February 8, 2022 at 10:00 a.m. (the “February 8<sup>th</sup> Technical Conference”) (*id.* at page 2). The Energy Bureau also ordered PREPA and LUMA to attend the February 8<sup>th</sup> Technical Conference and invited stakeholders to attend.

7. The Energy Bureau further indicated in the December 14<sup>th</sup> Resolution and Order that:

The Energy Bureau intends to complete the Avoided Cost Study in spring 2022. Since LUMA's energy efficiency programs during the two-year Transition Program Plan period are not required to be cost-effective using the Puerto Rico Test . . . it is unnecessary for the Avoided Cost Study to be complete before LUMA files its Transition Program Plan in March 2022.

*Id.*

8. In the December 14<sup>th</sup> Resolution and Order, the Energy Bureau also included data requests in Appendices A and B thereof, which the Energy Bureau indicated “were updated to reflect the discussion in the November 18<sup>th</sup> Technical Conference” (*id.*), and ordered LUMA to submit on or before January 5, 2022, the responses to the data requests in Appendix A (the “December 14<sup>th</sup> Appendix A”) and PREPA to submit the responses to the data requests in Appendix B on or before the same date (*id.*)

9. The December 14<sup>th</sup> Resolution and Order makes no mention of LUMA's December 13<sup>th</sup> Motion.

10. LUMA respectfully seeks clarification from this honorable Energy Bureau regarding certain aspects of the December 14<sup>th</sup> Resolution and Order. First, LUMA respectfully requests the Energy Bureau to confirm whether its determinations in the December 14<sup>th</sup> Resolution and Order took into consideration LUMA's comments, proposals, recommendations, and concerns in LUMA's December 13<sup>th</sup> Motion. Furthermore, LUMA respectfully requests that this Energy Bureau consider the comments and issue a ruling.

11. Second, LUMA seeks clarification on the Energy Bureau's statement in the December 14<sup>th</sup> Resolution and Order regarding a two-year Transition Program Plan to be

submitted by LUMA in March 2022 in connection with LUMA's energy efficiency programs. LUMA is unaware of a regulatory requirement for the submission of a two-year Transition Program Plan in March 2022. The foregoing would appear to be a matter to be covered in the Regulation for Energy Efficiency, but this regulation has not been approved in final yet. Therefore, it is LUMA's understanding that it is currently not required to submit the mentioned plan in March 2022.

12. Regarding the timing of the energy efficiency programs and plans, LUMA has made recommendations to this Energy Bureau in dockets NEPR-MI-2021-0005 (*In Re: Regulation for Energy Efficiency*) and NEPR-MI-2021-0006 (*In Re: Demand Response Plan Review, Implementation and Monitoring*) regarding the timing and coordination of the Three-Year Plans for both Demand Response and Energy Efficiency and proposing phased and integrated approaches. *See, Motion Submitting Comments to Proposed Regulation for Energy Efficiency* filed by LUMA on June 28, 2021 in Case No. NEPR-MI-2021-0005 and *Motion Submitting Presentation for Technical Conference Scheduled for June 15, 2021* filed by LUMA on June 11, 2021 in Case No. NEPR-MI-2021-0006. As of this date, this honorable Energy Bureau has not ruled on these proposals.

13. In compliance with the December 14<sup>th</sup> Resolution and Order, LUMA is hereby submitting the responses to the December 14<sup>th</sup> Appendix A in the document included herein as Exhibit A. Exhibit A makes reference to the following seven (7) Exhibits containing raw data, which due to their size and format and for the reasons stated below are being submitted today separately via email to this Energy Bureau: Exhibit 1 – Refiled MCOS Workpapers; Exhibit 2- Raw Hourly Feeder Data; Exhibit 3 - Raw Hourly Substation Data; Exhibit 4 – LUMA District

Mapping; Exhibit 5- Hourly Generation for the Entire System; Exhibit 6- AES Fuel Price Forecast; and Exhibit 7- Historical Regulation Up/Down Actuals for 2020.

14. LUMA respectfully submits that Exhibits 1 to 7 contain raw data to be examined internally by Energy Bureau consultants for purposes of their research to prepare the Avoided Cost Study and may or may not be used for such study. It is respectfully submitted that until such study is prepared, all raw data be kept confidentially. This approach helps protect the integrity of the research and data that may not be necessary or relevant for such study, thereby ensuring clarity of the record.

15. In addition, whether used or not for the Avoided Cost Study, LUMA hereby requests the Energy Bureau to receive and maintain **Exhibits 2, 3, 4 and 6** under seal of confidentiality, as Critical Energy Infrastructure Information (“CEII”), *see e.g.*, 6 U.S.C. §§ 671-674; 18 C.F.R. §388.113 (2020) and sensitive commercial information pursuant to the Energy Bureau’s Policy on Management of Confidential Information, CEPR-MI-2016-0009, issued on August 31, 2016, and partially amended on September 16, 2016

16. Within the next ten days, LUMA will submit a memorandum of law to support this request for confidential treatment of the aforementioned exhibits.

**WHEREFORE**, LUMA respectfully requests the Energy Bureau to **take notice** of the aforementioned, **accept** LUMA’s responses to the data requests in Appendix A of the December 14<sup>th</sup> Resolution and Order in compliance thereof, **consider** the requests for clarification and related comments set forth herein, and **issue the requested clarification** to the December 14<sup>th</sup> Resolution and Order accordingly.

**RESPECTFULLY SUBMITTED.**

In San Juan, Puerto Rico, this 5<sup>th</sup> day of January 2022.

We certify that we filed this motion using the electronic filing system of the Puerto Rico Energy Bureau.



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*Exhibit A*  
*[Exhibits 1 – 7 To be submitted by Email]*





# PR Cost Test Response to Questions 1-6

NEPR-MI-2021-0009

January 5, 2022

# 1.0 Responses to Questions

## Response: Question 1

### REQUEST

Please provide the following hourly data and discuss the extent to which each could be useful for the Avoided Cost Study. This request includes, but is not limited to, any files that LUMA has in its possession equivalent to those provided by PREPA at the time of its filing of the 2019 Integrated Resource Plan and which reflect the terms of Section VII.C of the September 23rd Final Order in Case No. CEPR-AP-2015-0002 (the first IRP case). For example, the Energy Bureau is aware of the existence of a set of “Hourly Generation Reports” filed in PDF format but apparently generated from Excel files that resided at locations similar to “M:\AREA\_OPERACIONES\CCE\1GD2019\201906.xls” (with different file names based on the date of the files). The Energy Bureau has also seen a file named “Comportamiento-generacion-3.xlsx” (Load forecast, FCA/PPCA) containing hourly generation profiles from July 2020 through September 2021 associated with Case No. NEPR-MI-2020-0001 and available at [https://energia.pr.gov/wp-content/uploads/sites/7/2021/09/Comportamiento-generacion\\_values-NEPR-MI-2020-0001.xlsx](https://energia.pr.gov/wp-content/uploads/sites/7/2021/09/Comportamiento-generacion_values-NEPR-MI-2020-0001.xlsx)

- a. Hourly load shape data used as inputs into the MCOS Study.
- b. Hourly generation data used as inputs into the MCOS Study.
- c. Any other sources of hourly load or generation data for the period from 2017 to the present.

### RESPONSE

- a. LUMA has included the following relevant data from the MCOS filed workpapers as Exhibit 1. The MCOS Study was performed by PREPA and their consultant Guidehouse and filed on May 10, 2021 in Case No. NEPR-AP-2018-0004. The MCOS workpapers were refiled on July 21, 2021 by LUMA. LUMA reviewed the above data request for hourly load data with the Guidehouse consultants that performed the MCOS work earlier this year and identified the following relevant hourly data. References to relevant data in the MCOS workpapers and context about data that was included or not included in the MCOS is also provided below.
  - System hourly load (July 2018 – June 2020): included in “IN\_System Hourly Load” tab of MCOS filed workpapers.
  - System hourly load forecast from Aurora (2020 – 2024): included in “IN\_Aurora” tab of MCOS filed workpapers.

While the system hourly load data was reviewed and included in the MCOS workpapers, historical load was not used as an input to the MCOS because the MCOS was a forward-looking study, and the Aurora forecast was analyzed but not ultimately used to calculate marginal costs because of inconsistencies between forecasted system hourly load and marginal energy prices as described in the MCOS.

Hourly consumption data was also not provided by class. Instead, load factors and coincident factors by class from the IRP were applied to annual load forecast data by class to calculate NCP and CP by class and for the system for the MCOSS. Historical hourly load by substation and transmission-level customer were not relied on in the MCOS and therefore were not included in the workpapers.

Guidehouse was also provided the following non-hourly load data from PREPA as part of the unbundling proceeding, Case No. NEPR-AP-2018-0004.

- Annual consumption by rate schedule (FY 2017 – FY 2030): included in “IN\_Load\_Forecast” tab of MCOS filed workpapers.
- Annual consumption by class and gross generation (FY 2021 – 2025): included in “IN\_PREPA\_Cons” tab of MCOS filed workpapers.
- Class load factors and class coincident factors from PREPA's 2019 IRP: included in “CLC\_Class\_Loads” tab of MCOS filed workpapers.

b. Guidehouse was provided the following hourly generation data from PREPA:

- System hourly marginal generation cost forecast from Aurora (2020 – 2024): included in “IN\_Aurora” tab of MCOS filed workpapers.

c. For other sources of hourly load or generation data, LUMA has included the following Exhibits 1-4. Hourly consumption data by customer class is not available. The hourly substation and feeder data provided in Exhibit 2 and 3 is considered raw data. LUMA is not able to confirm the quality of this data.

- Exhibit 2 is available raw hourly feeder data from 2020. The data is collected from the SCADA system which monitors feeder ampere single phase readings at the head end of each feeder (distribution substation). Data has not been verified and does not include all feeders or substations. It only includes those feeders that have connectivity to the SCADA system.
- Exhibit 3 is available raw 2018-2020 substation data from the MV-90 Meters. The data is in hourly intervals (kw, kvar delivered and received, volts and amps). The substation dataset is organized by Districts (one file for each district).
- Exhibit 4 identifies the substations to the corresponding Region and District and provides some basic information such as Substation Number, Name, Voltage, Region, District and Town.
- Exhibit 5 is 2016-2021 hourly generation for the total system provided in Case No. NEPR-MI-2020-0001 and referred to as “Comportamiento Generacion.” There is no breakout by customer class.

## Response: Question 2

### REQUEST

Referring to the confidential workpapers named “PREPA Fuel Forecast 06032019\_FINAL\_with formulas.xlsx” provided by PREPA in Case No. CEPR-AP 2018-0012 please provide the most updated fuel price forecasts for the AES coal plant between 2021 - 2027. Please indicate the units for the fuel price forecasts. If the entire period is not available, please provide data for the years that are available.

### RESPONSE

Please see Exhibit 6 for the AES coal fuel price forecast as of April 2021. The forecast data was developed by Siemens and has not been confirmed or checked by AES. A fuel price forecast for the AES coal plant was compiled by PREPA as a part of the fuel cost forecast provided to the FOMB. This is part of the process for submission of PREPA's annual budget. Any additional questions about the fuel price forecast for AES, EcoElectrica or the PREPA generation units would be best directed to PREPA.

## Response: Question 3

### REQUEST

Referring to the confidential workpapers named “PREPA Fuel Forecast 06032019\_FINAL\_with formulas.xlsx” provided by PREPA in Case No. CEPR-AP 2018-0001, please answer the following questions regarding current plant operations:

- a. Excluding the New Fortress Energy contract that pertains to the San Juan plants (#5 & #6) and the renewed Gas Sales and Purchase Agreement (GSPA) that pertains to Costa Sur and EcoEléctrica, please confirm that the forecasting methodology and adders used for delivered fuel prices at all plants are still applicable. If there are any differences, please provide the most recent update to this referenced spreadsheet to reflect the new adders and forecasting methodologies.
- b. On tab “No.6 Regression” of this spreadsheet, please provide the data source for NY Spot No. 6 0.5% (dollars per gallon). The current data source on this tab links to the NY Harbor Ultra-Low Sulfur No 2 Diesel Spot Price and does not match the values provided in column E of this tab.
- c. Please also indicate if the adders in the referenced fuel forecast workpaper are consistent with the current contractual agreement for No. 6 residual fuel oil purchases, namely, the extended Fuel Oil Purchase Contract with Freeport and any other applicable contracts with other suppliers. If not, please provide any updated adders to reflect recent contractual agreements for No.6 fuel oil.
- d. Please also indicate if the adders in the referenced fuel forecast workpaper are consistent with the current contractual agreement for diesel, namely, the Puma Energy Caribe LLC, and/or any other applicable contracts with other suppliers, if not, please provide any updated adders to reflect recent contractual agreements for diesel.

### RESPONSE

Under the Transmission and Distribution Operating and Maintenance Agreement, LUMA is responsible for presenting the FCA and PPCA process to the Energy Bureau, however, PREPA retains all responsibility for fuel sourcing, delivery, forecasting and reporting. LUMA works with PREPA to compile and report fuel related data to the Energy Bureau on a periodic basis but the source of the information, including relevant contract terms requested above, are handled by PREPA. PREPA also manages all historic and forecasted pricing including contract adders, market prices and other requests identified above. Questions about the fuel forecast should be referred to the fuel team at PREPA.

## Response: Question 4

### REQUEST

Please provide the following ancillary service information:

- a. Historical Regulation Up/Down requirements for PREPA's system for 2020.
- b. Forecasted Regulation Up/Down requirements for PREPA's system for years 2021-2038. If data does not exist for the entire period, please provide data for the period for which it is available.
- c. Please provide a description of how the regulation up/down requirements are derived/established. If these values are derived formulaically, provide any relevant worksheets with formulae intact.
- d. Referring to regulation up/down requirements, please provide variation in requirements due to seasonality or other expected differences in the pattern of regulation up/down across the year.
- e. A description of which facilities operate with automatic generation control (AGC), as opposed to manual generation control (such as by phone calls).

### RESPONSE

- a. Please see Exhibit 7 for the actual spinning and control reserve outputs for the year 2020. This shows the hourly amounts of control and spinning reserve requirement, and the difference from one hour to the next is what we interpret as the actual "regulation up down requirements" requested.
- b. Forecasted regulation up/down requirements for 2021 – 2038 does not exist. LUMA does not currently forecast Regulation Up/Down requirements. Regulation services are provided as needed by System Operations during the day on a real-time basis.
- c. Historically, regulation was used reactively to maintain system frequency and voltage as required on an hour-to-hour basis. PREPA did not maintain written procedures or processes as to how regulation services were forecast or how they were to be provided. LUMA has written System Operation Principles (SOP) procedures describing how regulation services are applied, including SOP Procedure 14, "Policy on Reserves," filed on December 23, 2021 as part of Energy Bureau Case No. NEPR-MI-2021-0001.<sup>1</sup>
- d. LUMA has not analyzed regulation requirements or how these could be forecasted or variation for seasonality or other reasons. SOP Procedure 14 describes how reserve requirements are established and implemented.

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<sup>1</sup> <https://energia.pr.gov/wp-content/uploads/sites/7/2021/12/20211223-MI20210001-Motion-Submitting-SOP-Procedures-and-Request-for-Confidential-Treatment.pdf>

- e. Automated generation control (AGC) capability exists for Aguirre, Costa Sur and EcoElectrica. All other plants are manually dispatched via telephone or email communications.

## Response: Question 5

### REQUEST

Please provide the following reserve requirement information:

- a. Historical operating reserve (including spinning and non-spinning reserve) for the Puerto Rico electric system for any period or periods in 2020 or 2021 for which data are available.
- b. Forecasted operating reserve requirements for the Puerto Rico electric system for years 2021-2038. If data does not exist for the entire period, please provide data for the period for which it is available.
- c. Please describe how the operating reserve requirements are derived/established. If these values are derived formulaically, provide any worksheets with formulae intact. If the values are derived based on operator experience, rules of thumb, or other non-formulaic approaches, please summarize the approach(es) used.
- d. Referring to operating reserves, please provide or summarize the variation in requirements due to seasonality or other expected differences in the pattern of operating reserve across the year.

### RESPONSE

- a. In the recently developed operating procedures in Case No. NEPR-MI-2021-0001, LUMA defined reserve requirements as 300 MW control reserves and 450 MW spinning reserves. This results in a total targeted reserve requirement of 750 MW. The spinning reserve requirement is actually the reserves required to replace the largest generator on the system which is nominally 450 MW but could vary from day to day depending on which particular units were operating and what the rated capacity of the largest unit was at any given hour.
- b. For planning purposes, LUMA utilizes 750 MW as the targeted total reserve requirements.
- c. Please refer to above response a.
- d. As described in response b, the actual reserve requirements will change from hour to hour depending on which units are online and their rated capacity at those specific hours. Puerto Rico's climate is fairly consistent throughout the year so there is not substantial seasonal variation. Seasonality impacts may be analyzed, to the extent they are relevant, in future load forecasts.

Similar to the request 4, a meeting to clarify the context and procedures would be helpful. LUMA can describe reserve requirements as well as a summary of all operating procedures and how they are used to manage the system. This will include policy on reserves, managing frequency of voltage, and interconnected facility capabilities among other topics. Additional information could be provided describing the operations of the Puerto Rico grid today and the constraints that exist today and how these affect reserve requirements and regulation requirements, as well as other questions in the data request.



## Response: Question 6

### REQUEST

**Please provide any additional relevant data, analysis, or information available to LUMA which LUMA believes could be useful in the development of avoided costs for energy efficiency and demand response.**

LUMA believes that it would be constructive to conduct site visits with the Energy Bureau commissioners and consultants in early 2022 so that further context can be provided on the requests of the Energy Bureau and LUMA can provide relevant background about the system and availability of data.