

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

IN RE: IMPLEMENTATION OF THE PUERTO RICO ELECTRIC POWER AUTHORITY INTEGRATED RESOURCE PLAN AND MODIFIED ACTION PLAN

CASE NO.: NEPR-MI-2020-0012

SUBJECT: Renewable Energy Generation and Energy Storage Resource Procurement Plan – First Tranche Projects for Phase III Contract Negotiation and Final Interconnection Plan Approvals

RESOLUTION AND ORDER

The Energy Bureau of the Puerto Rico Public Service Regulatory Board (“Energy Bureau”) conducted a meeting with the Puerto Rico Electric Power Authority (“PREPA”) on February 3, 2022. Discussions during the meeting included aspects of Tranche 1 renewable energy and battery storage procurement submittals from respondents, and PREPA’s evaluation of those submittals. During that meeting, PREPA indicated its willingness to provide additional information further to discussion at the meeting and to supplement certain aspects of its confidential responses to Energy Bureau questions filed under seal on January 31, 2022.

The Energy Bureau **ORDERS** PREPA to respond to the following questions 1 through 5, including subparts, on or before April 19, 2022, including submittal of attachments in Excel format as requested. The Energy Bureau further **ORDERS** LUMA¹ as operator of the Transmission and Distribution system to answer questions 6 and 7, including subparts, on or before April 19, 2022.

Questions for PREPA

1. The threshold used by PREPA’s Evaluation Committee to evaluate the levelized cost of storage (“LCOS”) metric for respondent submittals to the Tranche 1 RFP for battery storage resources was \$120/MWh.² PREPA further stated in its responses to Energy Bureau questions that an update to this threshold value was being considered.³
 - a. Provide PREPA’s Evaluation Committee update to the LCOS threshold value. Include a specific value in \$/MWh and clearly explain how this threshold value was determined by PREPA or PREPA’s Evaluation Committee.
 - b. Provide in Excel file format all workpapers and computations used, including all assumptions and with all formulae intact, for PREPA’s derivation of the updated threshold value. Include the specific source of all input assumptions used.
2. On November 9, 2021, PREPA filed the levelized cost evaluation information for all solar PV and battery energy storage proposals received by PREPA for Tranche 1

¹ LUMA Energy, LLC and LUMA ServCo, LLC (collectively, “LUMA”).

² Motion Submitting 733 MW of PV Renewable Energy Draft Power Purchase and Operating Agreements Offered in Tranche 1 of the PREPA’s Renewable Generation and Energy Storage Resources RFP for Energy Bureau Evaluation and Approval, *In re. Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012, December 16, 2021.

³ Motion in Compliance with the January 28 Order Submitting Responses to Attachment A of the December 28 Order and Memorandum of Law Requesting Confidential Treatment, Attachment A, question 3b) response, *In re. Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012, January 31, 2022.



battery energy storage procurement.⁴ On January 31, 2022, PREPA filed as "Confidential Attachment A" an excel file with the data summaries, levelized cost of energy discussion, and levelized cost of energy calculations for the solar PV projects offered into the Tranche 1 RFP.⁵

- Jmr*
- a. Using PREPA's current best and final offer information for all battery energy storage projects submitted in response to the Tranche 1 RFP, file a data summary and levelized cost of storage calculation for all battery energy storage projects, in the same or an equivalent excel file structure as used for the January 31, 2022 Attachment A submission of information for the solar PV projects.
 - b. Confirm or explain otherwise this information reflects in part the information on screen and discussed during the February 3, 2022 meeting, regarding battery energy storage project costs and ranking, and other considerations if or as relevant.
- SMH*
3. Confirm or explain otherwise that the information provided in response to question 2 above reflects best and final offer information received (if applicable) after PREPA's request of respondents during February 2022 to provide such best and final offer information.
- M*
4. PREPA indicated that "Facility Studies: POI Upgrades" information would be filed on March 15, 2022. As of March 30, 2022, the Energy Bureau has yet to receive that information. Provide that information or otherwise explain the status of the facility studies POI upgrade analysis.
 5. PREPA has received two respondent offers for potential virtual power plants (VPP). A template Grid Services Agreement was filed in association with one offering, "Proponent 1", on March 1, 2022.⁶ PREPA stated in a filing in mid-March that other concerns exist.⁷
 - a. Provide a draft grid services agreement for the second of the two VPPs, for "Proponent 2".
 - b. Provide a status update on the LUMA operating procedure and testing protocols for VPPs, referenced in the March 17 Informative Motion.
 - c. For the second of the two VPPs, "Proponent 2", for which a GSA has not yet been submitted (but will be, in response to subpart a of this question), provide additional information on PREPA's concerns regarding the overall availability of the potential VPP resource to provide energy during times of need, in comparison with utility scale battery resources, specifically addressing overall availability limitations in place for the VPP resource and also effectively in

⁴ Motion Submitting Pricing Information Per Technology Group Regarding the Tranche 1 RFP and Request to Lift Imposition of Sanctions, including Annex A. *In re. Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012, November 9, 2021. Annex A contained separate Excel files for the evaluation of solar PV and battery energy storage submissions, with all formulations and input data.

⁵ Motion in Compliance with the January 28 Order Submitting Responses to Attachment A of the December 28 Order and Memorandum of Law Requesting Confidential Treatment, Attachment A, *In re. Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012, January 31, 2022. Attachment A was an excel file.

⁶ Informative Motion Regarding Status of VPP Contract Negotiations and Delays in Finalizing Form of Interconnection Agreement. *In re. Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012, March 1, 2022 ("March 1 Informative Motion"). PREPA requested confidential treatment which is pending the Energy Bureau determination.

⁷ Informative Motion Identifying Concerns Regarding Pricing and Certain Commercial Terms Offered by Tranche 1 VPP Project Proponents and Request for Confidential Meeting to Discuss Selection of Tranche 1 VPP Proposals. *In re. Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012, March 17, 2022 ("March 17 Informative Motion"). PREPA requested confidential treatment which is pending the Energy Bureau determination.



place in different forms for the utility scale resource, and how these will affect PREPA's need for dispatchable capacity during normal peak periods.

- d. Provide and explain the specific pricing offers received by VPP proponents, including how the price offers are similar to or different from utility scale battery storage offers across all metrics that will serve as inputs to a leveled cost of storage computation, including annual pricing, escalation rates, degradation rates, interconnection costs, availability, and any other relevant parameters.
- e. For the VPP GSA templates for both VPP proponents, provide a summary excel file with all pricing parameters in similar format and content as that filed on January 31, 2022 for the solar PV offerings.
- f. Provide a status update on all ongoing negotiations with VPP proponents for availability parameters or other GSA terms.
- g. Confirm or explain otherwise that any concerns with VPP offerings do not include bulk system interconnection agreement concerns, since the resources would be connected at the distribution system level.

Questions For LUMA

- 6. PREPA received information from prospective battery energy storage respondents about technical details of minimum technical requirements (MTR) about the ancillary service capabilities and response times for certain battery energy resources.⁸
 - a. Provide LUMA's technical opinion on the requests made by certain proponents to change the threshold values associated with four MTRs for i) Response Time for Frequency Regulation, ii) Round Trip efficiency of battery storage, iii) Voltage regulation, and iv) Fast dynamic reactive power reserve and voltage support and short circuit ratio. As operator of the T&D system including generation supply dispatch responsibilities, what is the appropriate threshold values required for these separate MTRs, considering the potential for procurement savings under certain relaxation considerations for threshold values for MTRs.
- 7. Concerning interconnection agreements.
 - a. Provide specific rationale for LUMA's concerns⁹ that interconnection agreements on the Puerto Rico grid must meet the FERC¹⁰ large generator interconnection standard, rather than Puerto Rican specific standards that would provide sufficient reliability assurances.
 - b. Confirm or explain otherwise that any concerns with VPP respondent offerings do not include bulk system interconnection agreement concerns, since the resources would be connected at the distribution system level.

Be it notified and published.

⁸ Informative Motion Regarding Status of BESS Proposal Evaluations, VPP Proposal Negotiations and Interconnection Study Timeline, including Exhibits A-I, A-II, and A-III, *In re. Implementation of the Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, Case No. NEPR-MI-2020-0012, February 10, 2022. PREPA requested confidential treatment which is pending the Energy Bureau determination.

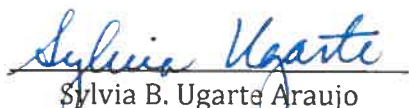
⁹ As expressed by PREPA in the March 1 Informative Motion.

¹⁰ Federal Energy Regulatory Commission.




Edison Avilés Deliz
Chairman


Lillian Mateo Santos
Associate Commissioner


Sylvia B. Ugarte Araujo
Associate Commissioner

CERTIFICATION

I hereby certify that the majority of the members of the Puerto Rico Energy Bureau has so agreed on April 11, 2022. Associate Commissioners Ángel R. Rivera de la Cruz and Ferdinand A. Ramos Soegaard did not intervene. I also certify that on April 11, 2022 a copy of this Resolution and Order was notified by electronic mail to the following: laura.rozas@us.dlapiper.com; margarita.mercado@us.dlapiper.com; mvazquez@diazvaz.law and kbolanos@diazvaz.law. I also certify that today, April 11, 2022, I have proceeded with the filing of the Resolution and Order issued by the Puerto Rico Energy Bureau.

For the record, I sign this in San Juan, Puerto Rico, today April 11, 2022.


Sonia Seda Gaztambide
Clerk

