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

IN RE: OPTIMIZATION PROCEEDING OF MINIGRID TRANSMISSION AND DISTRIBUTION INVESTMENTS	**CASE NO.:** NEPR-MI-2020-0016 **SUBJECT:** LUMA's Presentation for the Minigrid Optimization Technical Workshop of February 23, 2021.

MOTION SUBMITTING LUMA' S PRESENTATION GIVEN AT THE MINIGRID OPTIMIZATION TECHNICAL WORKSHOP OF FEBRUARY 23, 2021

TO THE PUERTO RICO ENERGY BUREAU:

COME NOW, LUMA ENERGY SERVCO, LLC and **LUMA ENERGY, LLC** (collectively, LUMA), through the undersigned legal counsel and respectfully submit the following:

1. In a Resolution and Order dated December 22, 2020, this honorable Energy Bureau initiated this Optimization Proceeding in accordance with the Resolution and Order approving the Integrated Resource Plan, Case No. CEPR-AP-2018, to first "develop[] a set of guiding principles and concepts which will be used to analyze various options for either the entire island (e.g., DER solutions), or for each Minigrid region (e.g., for specific transmission solutions)." *See* December 22nd Resolution and Order at page 4. The Bureau further explained that it would "develop[] . . . parameters . . . to measure and quantify the benefits and costs when comparing transmission and substation (new or existing) hardening options with distributed resiliency options." *Id.*

2. In the December 22nd Resolution and Order, the Bureau announced that it would hold two initial technical workshops. The two initial technical workshops were held on January

21st and 22nd, 2021, to develop optimization plans for all of the minigrid regions. *See* February 11, 2021 Resolution and Order at page 1, Case No. NEPR-MI-2020-0016.

3. On February 11, 2021 the Bureau issued a Resolution and Order to, among others, schedule a Technical Workshop "to focus on the examination of the San Juan-Bayamón region transmission options". *Id.* at page 2. The Bureau also indicated that it "will continue further examination of how the economics of Distributed Energy Resources alternatives for resiliency influence the overall consideration of transmission options." *Id.* The Technical Workshop was scheduled for February 23, 2021. *Id.*

4. On February 23, 2021, LUMA representatives appeared before the Energy Bureau for the Technical Workshop that was held via videoconference.

5. With leave from the Energy Bureau, Lee Wood and Shay Bahramirad, PhD offered a Power Point™ presentation. The presentation included an exposition on LUMA's commitment to collaborate with the Bureau and stakeholders to develop and implement infrastructure investment plans to repair, replace and harden existing infrastructure to meet public policy goals. LUMA also offered procedural and technical comments for consideration by the Bureau, including its recommendation on the need to address and resolve technical questions and considerations that have been raised by stakeholders and by the Bureau's consultants in this proceeding. Additionally, LUMA offered proposals on standards, guidelines, planning tools and models that may assist the Bureau in achieving the goal stated in the December 22nd Resolution and Order: "to establish the guiding principles and criteria that will be used to select the most cost-effective options for achieving resiliency solutions across Puerto Rico." *See* December 22nd Resolution and Order at pages 6-7.

6. During the Technical Workshop, the honorable Bureau requested that LUMA file for the record a copy of the Power Point™ presentation that was offered during the proceedings.

7. In compliance with the verbal order given by the Bureau during the Technical Workshop, LUMA hereby submits a copy of the February 23rd Power Point™ presentation in pdf format.

WHEREFORE, it is respectfully requested that the Energy Bureau **accept** the filing of a copy of LUMA's Power Point™ presentation offered during the Technical Workshop of February 23, 2021 and **deem** that LUMA complied with the verbal order issued by the Bureau in the Technical Workshop.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 3rd day of March 2021.

I hereby certify that I filed this motion using the electronic filing system of the Puerto Rico Energy Bureau and that on this date, I will send an electronic copy of this motion to counsel of record for the Puerto Rico Electric Power Authority, Joannely Marrero-Cruz, jmarrero@diazvaz.law; and Katiuska Bolaños-Lugo, kbolanos@diazvaz.law.

/s/ MARGARITA MERCADO ECHEGARAY
Margarita Mercado Echegaray
DLA Piper (Puerto Rico) LLC
PR Bar No. 16,266
Suite 401
500 Calle de la Tanca
San Juan, PR 00901-1969
787-945-9101
margarita.mercado@us.dlapiper.com

Minigrid Optimization Workshop

Lee Wood
Shay Bahramirad, PhD

February 23, 2021

NEPR-MI-2020-0016 – Optimization of Mini-Grids

1. Introduction
2. Procedural Comments
3. Technical Comments

Introduction

LUMA is committed to working with PREB and stakeholders to develop and implement infrastructure investment plans that:

- ensure that any T&D hardening investments move us closer to (not away from) the IRP goals
- consider opportunities for using distributed energy resources as non-wires alternatives to the extent feasible, reliable and cost-effective
- avoid further delays in FEMA-funded recovery projects by quickly identifying “no-regrets” projects in the near-term
- develop a robust, technically sound approach to determine when and where to deploy various resiliency solutions to achieve objectives

Procedural Comments

Guiding Principles – define and discuss before applying

- The Resolution and Order stated that "the primary purpose of the initial workshop was to establish the guiding principles and criteria that will be used to select the most cost-effective options for achieving resiliency solutions across Puerto Rico."
- The stated objective of today's workshop is to review specific San Juan / Bayamon transmission projects/categories and *determine which are reasonable to proceed.* In order to ensure an effective process, workshop participants should be presented with proposed guiding principles, selection criteria and projects to evaluate.
- LUMA would like an opportunity to review and discuss proposed guiding principles and understand how they will be used to ensure the most cost-effective resiliency solutions for Puerto Rico.

Procedural Comments (cont.)

Process to define no regrets projects and alignment with guiding principles

- The Resolution and Order stated that the second step of this proceeding will be to "apply the framework with no-regrets expenditures in which the cost and the specific projects are identified for each MiniGrid region."
- LUMA shares the goal of avoiding delays in beginning FEMA-funded recovery projects by identifying "no-regrets" projects in the near-term. LUMA recommends that the no regrets also align with the guiding principles.
- LUMA suggests beginning today's workshop with review and discussion of the criteria for defining and selecting no-regrets projects prior to determining which are "reasonable to proceed."
- We also emphasize the need for this analytical approach to evolve into a more rigorous, comprehensive, data-driven planning and evaluation process over the course of this proceeding.

Procedural Comments (cont.)

Alignment with FEMA Requirements

- The $10.7 billion obligated by FEMA so far is primarily intended to repair, replace and/or harden existing infrastructure that was damaged by the storm.
- These funds may potentially be approved for alternative projects, such as distributed resilience solutions, on a case-by-case basis, pending FEMA's evaluation of whether the project is an appropriate use of funding.
- We would like to better understand PREB's criteria and timelines established in this Optimization Plan, so LUMA can ensure our projects align with both criteria for reviewing and approving alternative projects.
- Any approval processes and procedures used to administer this plan need to be streamlined to prevent administrative delays, duplication of effort and conflicting requirements.

Procedural Comments (cont.)

Scope of Proceeding – focus on one pilot minigrid region

- Many excellent technical questions and considerations have been raised by PREB's consultant and stakeholders about the complexities underlying this proceeding and its analytical approach.
- LUMA believes it is important to spend sufficient time resolving these technical issues, as many were identified by PREB's consultant as critically important to the success of this approach.
- We recommend focusing the activities of this proceeding, in the near term, on one minigrid pilot region as ordered in the IRP, to further refine the guiding principles, analytical approach, data inputs, administrative processes, and pilot evaluation approach, before scaling this approach to all other regions.
- LUMA also suggests identifying at least one "alternative" distributed resiliency project within this initial proceeding to submit through FEMA's approval process for alternative projects to gain a better understanding of that process.

Technical Considerations

We encourage the PREB to establish the following standards and guidelines:

- Define resilience criteria that will be needed to support the process
- Define the resilience metrics/standards for the optimization process – for example, quantify what "minimum interruption or no interruption to critical load 'at essential facilities'" means; is it one-day-in-10-years?
- If a differentiated resilience level is allowed for different type of loads (Critical, Priority, and Balanced, alternatively as essential or non-essential), the metrics/standards should be explicit to drive a consistent outcome in the minigrid design.
- Define the Critical/Priority/Balanced loads with details at substation and feeder level in the planning process and assign proper resilience level to each type of the loads.
- Establish performance measure and track all types of resources including central generation, distributed DERs, and demand response during "blue sky" days and severe weather events as well as post event participation in restoring load services.
- Require a certain level of flexible resources to maintain system stability and operating flexibility to properly address the impact of intermittent resources (e.g., impact of inverters) in structuring minigrid control areas.
- Developing effective analytical tools and checks and balances in the optimization process

Technical Considerations (cont.)

Consider using state of the art planning tools and models in the planning process. Specifically:

- Analytical tools and procedures that have been demonstrated useful and effective in valuing the grid as well as valuing the DER and handling integrated T&D planning with DERs should be adapted and used in the minigrid analysis.
- Existing and proven concept and practices such as controlled grid separation during severe weather events or major system disturbances should be adopted in the planning optimization to truly enhance the “anticipate, absorb, adapt to, and rapidly recover” aspects of the resilience.
- The analysis should be detailed enough to ensure the economic and reliable integration of large amounts of inverter-based renewable resources (IBRs) to consider system operational requirement such as frequency and voltage controls, dynamic balances between load and generation, and system inertial response, ramping capacity requirements. The outcome can be in the form of spatial and temporal limits on IBR resources and/or modification to interconnection standards such as the required for grid forming inverters, or the need for synchronous condensers.
- In the analysis, it is important for the analytical tools to be able to adaptively serve the Critical load under all system conditions and resource mix as well as time and duration needs.
- Address integrated planning of T&D assets to optimize investments, as required with larger penetration of DER and storage.

Closing

LUMA appreciates the substantial and valuable work that has been done so far in this docket and others. We support a robust and collaborative process and look forward to providing technical expertise and the operator perspective.