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

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| **IN RE:**<br>ENERGY EFFICIENCY AND DEMAND RESPONSE TRANSITION PERIOD PLAN | **CASE NO.:** NEPR-MI-2022-0001<br><br>**SUBJECT:** Submittal of Reply Comments required in Orders of October 12, 2022 and November 2, 2022 |

**MOTION TO SUBMIT REPLY COMMENTS REQUIRED IN ORDERS OF OCTOBER 12, 2022 AND NOVEMBER 2, 2022**

**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 June 21, 2022, LUMA, filed with the Puerto Rico Energy Bureau ("Energy Bureau"), in the proceeding NEPR-MI-2021-0006, *In Re: Demand Response Plan Review, Implementation, and Monitoring*, a proposed Energy Efficiency ("EE") and Demand Response ("DR") Transition Period Plan for the launch of quick-start EE and DR programs ("Proposed EE and DR TPP") in attention to the Energy Bureau's requirements and the provisions of the Energy Bureau's Regulation for Demand Response ("DR Regulation")[1] and Regulation for Energy Efficiency ("EE Regulation")[2].

2. On June 28, 2022, the Energy Bureau issued a Resolution and Order initiating the instant proceeding for the review of LUMA's Proposed EE and DR TPP.

[1] Regulation Number 9246, effective December 21, 2020.
[2] Regulation Number 9367, effective March 25, 2022.

3. After other procedural events, on September 29, 2022, the Energy Bureau issued a Resolution and Order scheduling a Technical Conference for November 4, 2022, informing that it would be issuing questions to the public and LUMA regarding the Proposed EE and DR TPP, and establishing a deadline of November 14, 2022 to submit reply comments (the "Reply Comments") following the Technical Conference.

4. On October 12, 2022, the Energy Bureau issued a Resolution and Order ("October 12th Order") requesting responses by October 28, 2022 to two sets of requests for information- one directed to all stakeholders and LUMA, included in Appendix A to the October 12th Order ("Appendix A"), and the other directed only to LUMA, included in Appendix B to the October 12th Order ("Appendix B").

5. After other procedural events, on November 2, 2022, the Energy Bureau issued a Resolution and Order ("November 2nd Order") extending the deadline to submit responses to Appendix B until November 4, 2022 and to submit responses to Appendix A until November 9, 2022, scheduling a Technical Conference for November 16, 2022, and establishing a new deadline to submit Reply Comments of November 30, 2022. The Energy Bureau also determined to hold a workshop on November 4, 2022 to discuss the questions in Appendix A, which was held at the specified date and time.

6. On November 4, 2022, LUMA submitted to the Energy Bureau its responses to Appendix B. *See* LUMA's *Motion to Submit Responses to Requests for Information in Appendix B of Resolution and Order of October 12, 2022*, of that date.

7. On November 9, 2022, LUMA submitted to the Energy Bureau its responses to Appendix A. *See* LUMA's *Motion to Submit Responses to Requests for Information in Appendix A of Resolution and Order of October 12, 2002*, of that date.

8. On November 16, 2022, the Energy Bureau held a Technical Workshop ("November 16th Workshop") regarding the EE and DR TPP in which the Energy Bureau's consultants gave a presentation and led a discussion on the responses received by the Energy Bureau to Appendix A. During the Technical Workshop, the Energy Bureau consultants highlighted certain issues or questions which it requested LUMA address in its Reply Comments.

9. On November 23, 2022, LUMA requested this honorable Energy Bureau to grant LUMA a brief extension of two (2) days (that is, by December 2, 2022) to submit its Reply Comments to the Energy Bureau. *See* LUMA's *Motion to Request Extension to Submit Reply Comments Required in Orders of October 12, 2022 and November 2, 2022* filed on November 23, 2022 ("Extension Request").

10. As required by the September 29th Order, as revised by the November 2nd Order, and in accordance with the Extension Request, LUMA hereby submits its Reply Comments. *See Exhibit 1*. LUMA's attached Reply Comments address matters discussed during the November 16th Workshop, including questions seeking additional input raised by Energy Bureau consultants during the workshop.

**WHEREFORE,** LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned and accept LUMA's reply comments, attached herein as *Exhibit 1*, in compliance with the October 12th Order, as revised by the November 2nd Order.

**RESPECTFULLY SUBMITTED.**

In San Juan, Puerto Rico, this 2nd day of December 2022.

We hereby certify that we filed this Motion using the electronic filing system of this Energy Bureau and that we will send an electronic copy of this Motion to agraitfe@agraitlawpr.com; info@sesapr.org; elevin@veic.org; the attorneys for PREPA at jmarrero@diazvaz.law,

kbolanos@diazvaz.law; and the Independent Office for Consumer Protection at hrivera@jrsp.pr.gov.

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**EXHIBIT 1**

LUMA's Reply Comments

# Reply Comments on Proposed Transition Period Plan (TPP)

NEPR-MI-2022-0001

December 2, 2022

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# 1.0 Introduction

On November 16, 2022, the Energy Bureau hosted the second technical workshop on the Energy Efficiency and Demand Response Proposed Transition Period Plan (TPP) filed on June 21, 2022. In the technical workshop, the commissioners, stakeholders, and LUMA discussed the filed Appendices A and B in compliance with the October 12 Resolution and Order as revised by the November 2, 2022, Order. LUMA makes reference to the responses filed on November 4, 2022, and November 9, 2022.

LUMA reiterates its appreciation to the Energy Bureau for the opportunity provided to LUMA and stakeholders to participate in the workshops hosted in this proceeding and provide comments on the filed TPP.

# 2.0 Request for Information Appendix A Question 6

Regarding residential demand response, Solar and Energy Storage Association of Puerto Rico ("SESA-PR") indicates in its comments that there is a substantial untapped residential battery energy storage resource, and that the lack of a Demand Response ("DR") program is resulting in underutilization of this resource. Based on this finding, the Energy Bureau is considering the replacement of the proposed residential battery demand response program with a scheduled dispatch program for both residential and commercial customers. For example, the batteries could charge during the solar peak between 10:00 am and 2:00 pm daily and discharge between 6:00 pm and 10:00 pm. No dispatch would be required or expected when a storm warning is issued. The Energy Bureau would particularly value answers to these questions from potential battery aggregators, such as the firms that have leased many of the distributed batteries deployed in Puerto Rico.

**RESPONSE**

LUMA believes that a scheduled dispatch program could be attractive for some customers to accept a reduction in resiliency benefits provided by their batteries in exchange for an incentive for scheduled dispatch. However, LUMA does not recommend that the Energy Bureau replace the proposed program with a scheduled dispatch program. LUMA cautions against applying program design principles from HECO's Battery Bonus scheduled dispatch program (or similar programs) as a model for LUMA's program design as these programs have very different objectives and the utilities are in different circumstances. HECO's program was designed to provide a large up-front payment to incentivize the purchase of ***new*** batteries (in the absence of net energy metering), to address an emergency generation shortage. In exchange for this incentive, the program requires a 10-year commitment to scheduled dispatch. The batteries are "hard-scheduled" to dispatch during the 2-hour scheduled period (without customer ability to opt-out). LUMA's DSM program does not have the funding to provide incentives for new battery purchase and was designed to leverage the large fleet of ***existing*** batteries, which already receive an installation incentive in the form of NEM credits (unlike Hawaii). Furthermore, LUMA and other participating stakeholders have unanimously agreed that requiring long-term commitments associated with schedule dispatch programs would be detrimental and not well received by customers.

Responses to the various sub-questions are provided below:

## 2.1 Should the program be open to both residential and commercial customers?

LUMA believes this program should focus initially on residential customers, with a decision regarding possible expansion and modification for the commercial market coming at a later date. Opening the program to both residential and commercial customers would require more time and effort given the differences between residential and commercial. Offering the program to both sectors would essentially require developing, launching, and administering two programs simultaneously, as the program design and delivery parameters are different for each sector. It would be difficult to launch both at once so LUMA suggests starting with the residential sector first (which makes up the majority of installed batteries) then expanding to the commercial sector.

## 2.2 Should the program be open to individual battery owners, or only through aggregators?

As with many of the other programs proposed in the TPP, LUMA would use the Implementation Contractor to implement the program but notes that the Implementation Contractor will not likely have an existing relationship with the battery owners. Given that the current battery suppliers have an ongoing relationship with the battery owners and would have access to the battery usage data, LUMA believes there is merit in the concept of the current battery suppliers serving as aggregators in a scheduled dispatch program, as LUMA does not currently have these capabilities. However, LUMA is aware that most other programs involving aggregators involve a uniform offer to aggregators from the utility with each aggregator, in turn, offering a unique, aggregator-specific offer to potential customers. In the interest of fairness and equity, LUMA believes that the customer offer from all aggregators must be the same. Additionally, for simplicity of administration, the terms (excepting the financial terms) and conditions of the aggregation agreement between LUMA and the aggregator must also be the same across aggregators.

## 2.3 Should the program provide a monthly payment (proportional to daily energy charge/discharge in kWh) instead of an upfront payment to better align payments with savings?

LUMA believes a monthly payment proportional to the daily charge / discharge in kWh is better aligned with savings and so would be appropriate and preferred over an upfront payment.

## 2.4 Should the payment amount be based on estimated system-level fuel cost savings from daily arbitrage?

LUMA believes that the customer incentive should be based on the difference in marginal costs between the charge and discharge period of the scheduled dispatch.

## 2.5 Should the program provide a larger payment for batteries in critical facilities, or which serve more vulnerable customers?

LUMA believes it would be best to offer all eligible customers the same incentive, regardless of what the customers' batteries would otherwise be used for. Customers in critical facilities or which serve more vulnerable customers would be free to decide whether or not they want to participate in the program. More importantly, batteries in critical facilities should be dedicated to supplying energy to those facilities. It would not be advisable to encourage battery installation in critical facilities for resilience purposes, only to then reduce the availability of those critical batteries by committing them to a scheduled dispatch program.

## 2.6 How many years' commitment should be required to participate in the program?

To maximize attractiveness by allowing flexible enrollment terms, at least during the initial stages of the program, LUMA believes that customers should have the flexibility to cancel their participation in the program at any time. Additionally, LUMA believes that customers should also be able to opt-out of scheduled dispatch intermittently at their discretion – recognizing that the incentive available to such customers would be reduced. The customer needs to overcome an initial confidence barrier before committing to specific timeframes. Establishing a time commitment requirement from the very beginning may result in less participants enrolling which is not a desirable consequence for a program just being

deployed. A time commitment requirement could be implemented once the program reaches a mature stage and the trust of the customer in the program is increased. From feedback during the workshop and discussions with battery suppliers, LUMA believes that a strong value proposition and strong program delivery should serve as a sufficient incentive for customers to extend their participation in the program.

# 3.0 Request for Information Appendix B Question 1

Regarding residential demand response, SESA-PR stated that there is a substantial untapped residential battery energy storage resource, and that the lack of a DR program is resulting in underutilization of this resource. The Energy Bureau is considering requiring the replacement of the proposed residential battery demand response program with a scheduled dispatch program for both residential and commercial customers. The batteries could charge between 10:00 am and 2:00 pm daily and discharge between 6:00 pm and 10:00 pm. No dispatch would be required or expected when a storm warning is issued.

a. Can daily dispatch be accomplished with currently installed hardware and customer lease contracts? Why or why not?

b. Can LUMA use metering and communications in the batteries? Why or why not?

c. Can LUMA use a scheduled approach rather than DERMS dispatch? Why or why not?

d. How can daily dispatch be verified?

e. Can LUMA develop, pilot, and launch such a program in Year 1 rather than Year 2? Why or why not?

f. Can LUMA enroll a portion of a given battery in the program?

g. Can LUMA estimate fuel cost savings from the programmatic load shift to quantify savings to fuel costs?

## RESPONSE

LUMA's proposal to shift home load from grid to batteries during DR event periods in the TPP reflects LUMA's concern about battery owners' willingness to use their batteries for scheduled dispatch (or regular load shifting). It is LUMA's understanding that the primary reason residential customers install batteries is to provide resiliency and reliability in the event of loss of power from the grid. Due to the recent reported power outages, the consequence of not maintaining the battery fully charged at all times may become a significant concern for customers. Additionally, battery owners (either aggregators, battery suppliers or customers) may be concerned about degradation of battery life associated with multiple charge and discharge cycles as part of daily scheduled dispatch and roundtrip efficiency losses.

LUMA cautions against applying program design elements from HECO's Battery Bonus scheduled dispatch program as a model for LUMA's program design as these programs have very different objectives and the utilities are in different circumstances. HECO's program was designed to provide a large up-front payment to incentivize the purchase of ***new*** batteries (in the absence of net energy metering), to address an emergency generation shortage. In exchange for this incentive, the program requires a 10-year commitment to scheduled dispatch. The batteries are "hard-scheduled" to dispatch during the 2-hour scheduled period (without customer ability to opt-out). LUMA's DSM program does not have the funding to provide incentives for new battery purchase and was designed to leverage the large fleet of ***existing*** batteries, which already receive an installation incentive in the form of NEM credits (unlike Hawaii). Furthermore, LUMA and other participating stakeholders have unanimously agreed that requiring long-term commitments would be detrimental to LUMA's program.

Responses to the various sub-questions are provided below:

## 3.1 Can daily dispatch be accomplished with currently installed hardware and customer lease contracts? Why or why not?

LUMA believes that, subject to confirmation by the various battery suppliers, scheduled dispatch could be provided by most of the existing Battery Management Systems (BMS) currently deployed at residential customer facilities across Puerto Rico.

As stated in LUMA's response for network connected batteries, daily dispatch can be accomplished by scheduling the battery's operations via communication with the battery through a Wi-Fi network. Regardless of the hardware installed, LUMA's understanding is that customers will need to be registered in the program, as their existing lease agreements do not deliberately state that the customer agrees to be automatically enrolled in future programs. While some existing lease contracts may have fine-print provisions that auto-enroll customers in future programs such as this, there is a potential for customer backlash if they discover that their batteries have been dispatched without their express consent.

## 3.2 Can LUMA use metering and communications in the batteries? Why or why not?

As stated in LUMA's previous response filed on November 4, 2022, LUMA requires revenue grade metering data to measure the amount of energy consumed or dispatched, for billing and verification purposes. It is possible to obtain this metering data directly from the batteries to avoid installing a separate meter, as discussed previously. The challenge lies with obtaining, collecting, and managing the metering data from batteries to verify dispatch. One alternative is to enroll customers into a Distributed Energy Resources Management System (or equivalent), which would provide LUMA with direct access to the battery metering data. Alternatively, even without a DERMS it is technically possible to obtain the battery metering data directly from the Original Equipment Manufacturers (OEMs). However, obtaining this data would still require a process of enrolling customers to obtain their consent as most OEM's will not provide customer data to utilities without explicit consent from the customer. Any such information would also need to be independently verified on a regular basis through a rigorous Evaluation, Measurement and Verification (EM&V) process.

## 3.3 Can LUMA use a scheduled approach rather than DERMS dispatch? Why or why not?

As stated in LUMA's previous response filed on November 4, 2022, regardless of which approach is used to operate the batteries (passive or active), a DERMS or equivalent is still required to collect and manage the metering data from the battery for settlement, unless an arrangement can be made to obtain the data directly from OEMs as described above.

Again, we caution against applying concepts from HECO's Battery Bonus program here. HECO's program "hard-schedules" the battery so the customer cannot opt-out of dispatch events. Customers are not allowed to opt-out of HECO's program because, in order to justify the large upfront incentive for new battery installations, the program requires a 10-year mandatory commitment to scheduled dispatch. LUMA's program does not need to require this type of commitment and is structured as a pay-for-performance program, which we believe will generate higher participation levels. LUMA's program could still incentivize customers to schedule daily dispatch, but the ability to opt-out means that LUMA must verify event participation and only pay customers for the events they participate in. This need for

verification means that LUMA must receive data from the battery inverter, whether through a DERMS, an aggregator or directly from OEMs.

## 3.4 How can daily dispatch be verified?

As stated in LUMA's previous response filed on November 4, 2022, verification is needed to ensure that the customer did in fact dispatch the battery when requested. Customers generally have the option to "opt-out" of events by overriding the schedule. However, if they do opt-out of an event, they cannot be compensated for that event. This is the reason LUMA needs to obtain metering data for verification: to determine if the customer actually participated in the event and how much energy they need to be compensated for. Even if participants are compensated via a flat-fee or fixed amount (instead of per kWh dispatched), LUMA still needs metering data to verify that they actually dispatched the batteries and did not override the schedule.

Verification of dispatch requires metering and/or communications between hardware and software. Most LUMA customers do not currently have meters capable of logging and communicating 15-minute interval data necessary to verify daily dispatch. However, as discussed above, the battery telemetry provides an alternative to this metering requirement, which can be communicated via a network connected inverter.

LUMA will also need some form of third-party verification of battery data, to ensure the data provided to LUMA is accurate and has not been modified. This is the same approach taken to measure and verify savings in other Demand Response and Energy Efficiency programs.

## 3.5 Can LUMA develop, pilot, and launch such a program in Year 1 rather than Year 2? Why or why not?

LUMA does not believe this program could be developed, piloted and launched in FY23. LUMA's EE/DR TPP anticipated deployment of the proposed Battery Demand Response Program in FY24. If the PREB wishes for LUMA to shift its residential battery program design efforts to a scheduled dispatch program instead of the proposed Battery Demand Response Program, LUMA anticipates a similar planning and design timeframe with a program launch in FY24. Given that FY23 is close to halfway through, LUMA does not expect to be able to complete all the necessary planning and design work in time to launch a scheduled dispatch program in FY23. Proper planning and design includes considerations around the logistics of obtaining metering or battery data and processing incentive payments. LUMA also needs time to develop program design elements such as incentive structure, and to develop program materials for customers. If these program design details are not carefully designed and planned, LUMA runs the risk of launching a program that creates frustration and confusion among customers and contractors. If these programs fail, customers and contractors could lose their trust in EE/DR programming and other services. To prevent a potential failure, we intend to develop these details during year 1 of the TPP with the assistance of an expert implementation contractor and/or aggregator. As an example, HECO's Battery Bonus did not generate desired levels of participation when it was first launched and had to be redesigned to improve program design shortcomings. While there will always be unforeseen circumstances that require the program to be adapted to lessons learned, LUMA recommends allowing sufficient time to plan and design a successful program up front, to reduce the need for course-corrections to the extent possible. These are the reasons most utilities offer pilot programs at a smaller scale first, to learn from mistakes and adapt before scaling up.

## 3.6 Can LUMA enroll a portion of a given battery in the program?

LUMA expects that, given the primary purpose of the residential batteries is resiliency, participating customers would only enroll a portion of their batteries in a scheduled dispatch program and would reserve the remainder of the battery for 24/7 resiliency.

## 3.7 Can LUMA estimate fuel cost savings from the programmatic load shift to quantify savings to fuel costs?

The estimated fuel cost savings from scheduled dispatch would be based on underlying fuel costs which are largely reflected in the forecast hourly marginal costs. The fuel costs savings for scheduled dispatch would be relatively low in the short term given the forecast marginal costs but would be expected to increase in future years as more solar capacity is added to the grid.

LUMA could estimate fuel cost savings for the purpose of developing rough estimates of program savings, for planning purposes. However, LUMA does not recommend a “deemed savings” approach to estimating customer savings for incentive payment (if that is the intent of this question). Deemed savings approaches are used for mature programs that have been extensively evaluated, with a high degree of confidence in expected savings. Savings for this program in its early stages should be measured and verified directly and incentives should be paid based on actual participation, not deemed savings estimates.

# 4.0 Requests to LUMA

## 4.1 Timeline

LUMA must provide a detailed timeline, relative to the date on which a customer can submit a rebate application, for EE Rider approval and implementation, such that the EE Rider is not billed until after the rebate program is open.

**RESPONSE**

The Energy Bureau seems to be assuming that the readiness and availability of programs is going to reduce the potential for a negative backlash from the introduction of a Rider. Even after the programs are made available, it may take months if not years before all customers are fully aware of the program and its benefits and thus see the value of an EE Rider. Furthermore, regardless of customer awareness of the merit of these programs there will be a vocal minority who will oppose the Rider no matter when it is activated. So, while well intentioned, this effort to carefully choreograph the timing of the Rider with program announcements is unlikely to have the desired effect. The Bureau should instead look to activate the Rider at a time when there would be an overall net decrease in rates.

In its initial response to the Appendix A RFI filed on November 9, 2022, LUMA proposed a roadmap for program launch. Below is the program launch roadmap with a GANTT chart. LUMA estimates that the rebate programs will be ready for launch in June-July 2023.

1. **PREB Approval and Order.** PREB approves TPP and orders LUMA to file an EE Rider factor under Permanent Rate. Prior to filing EE Rider factor, LUMA will be required to achieve pre-launch milestones 2a-2d below to demonstrate readiness to launch widely available programs.
2. **LUMA Pre-Launch Milestones.** LUMA completes the following key milestones to be ready for program launch:
    a. Contract in place with Implementation Contractor (IC).
    b. Implementation contractor has Application Intake, Validation and Payment systems and processes in place to begin receiving customer applications and issuing rebate checks.
    c. Marketing materials are ready for advertising campaign announcing program launch (e.g., LUMA's EE programs will be receiving applications on X date).
    d. Implementation contractor begins outreach to major local contractors (and other key stakeholders) to provide orientation of program (e.g., participation process, terms & conditions, incentive amounts, etc.).
    e. LUMA Billing department is ready to introduce a line item for the Rider on the bill.
    f. LUMA notifies PREB that activities A-D have been completed and submits EE Rate Rider filing to PREB for PREB approval.
3. **PREB Rider Approvals.** PREB approves the EE Rider Factor within Permanent Rate docket to ensure funding is available when programs are ready to launch. If PREB does not approve the EE Rider Factor or other appropriate and predictable funding, then Step 4 does not occur.
4. **Program Launch**. Program launch strategy begins with marketing campaign:
    a. Launch new LUMA webpage with information about program, measures, and participation process, with "coming soon" messaging.

b. Announce the program through multiple channels (media release, news articles, etc.) to notify customers/contractors that LUMA will begin receiving applications in one month.

c. Once program officially opens, LUMA begins accepting and processing applications and mailing checks. LUMA media announcements of first checks approved, highlight projects.

**Table 4-1: Program Launch Roadmap Gantt Chart**

| Task | Description | Start Date | End Date | Dec | Jan | Feb | Mar | Apr | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **PREB Approval and Order** | **12/1** | **12/15** | | | | | | | |
| **2** | **LUMA Pre-Launch Milestones** | | | | | | | | | |
| 2a | IC contracting process | 12/1 | 3/1 | | | | | | | |
| 2b | Rebate application systems in place | 3/1 | 6/1 | | | | | | | |
| 2c | Marketing materials ready | 3/1 | 6/1 | | | | | | | |
| 2d | Initial contractor outreach | 4/1 | 7/1 | | | | | | | |
| 2e | Billing system programmed for Rider | 1/1 | 4/1 | | | | | | | |
| 2f | EE Rider application filing | 4/1 | 6/1 | | | | | | | |
| **3** | **PREB Rider Approvals** | **6/1** | **7/1** | | | | | | | |
| **4** | **Rebate Program Launch** | **6/1** | **7/1** | | | | | | | |

## 4.2 Performance Targets

The Energy Bureau Consultants urged LUMA to provide details on performance targets for the Transition Period Plan. LUMA incorporates by reference its response to Appendix B filed on November 4, 2022, under Question 5.