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

| | |
|---|---|
| **IN RE:**<br><br>THE PERFORMANCE OF THE PUERTO RICO ELECTRIC POWER AUTHORITY | **CASE NO.:** NEPR-MI-2019-0007<br><br>**SUBJECT: Submission in Response to Resolution and Order of August 18, 2022** |

**SUBMISSION IN RESPONSE TO RESOLUTION AND ORDER OF AUGUST 18, 2022, ON LUMA'S PERFORMANCE, LUMA'S OBJECTIONS AND REQUESTS FOR CORRECTIONS OR CLARIFICATIONS**

**TO THE PUERTO RICO ENERGY BUREAU:**

**COMES NOW, LUMA ENERGY SERVCO, LLC** ("LUMA"), through the undersigned legal counsel and respectfully states and requests the following:

**I. Introduction and Background**

Since June 2021, LUMA has submitted quarterly reports on specified system data of the Puerto Rico Electric Power Authority ("PREPA") in compliance with the orders issued by this honorable Puerto Rico Energy Bureau ("Energy Bureau") on May 14, 2019, and December 30, 2020, in this proceeding. LUMA has submitted such quarterly reports in accordance with a Resolution and Order of May 21st, 2021, that itemizes in Attachments A, B, and D, the statistics to be included in the quarterly reports, as amended and clarified on July 2, 2021.

On August 18, 2022, this Energy Bureau issued a Resolution and Order with the subject "June 2021-May 2022, 12-Month Metric Summary" ("August 18th Order").[1] Attachments A and

[1] On August 24, 2022, this Energy Bureau amended *nunc pro tunc* the August 18th Order to correct Figure 5 of Appendix A.

B of the August 18th Order include a summary and analysis by this Energy Bureau of the system data that LUMA and PREPA reported from June 1, 2021, through May 31, 2022.

On page 7 of the August 18th Order, this Energy Bureau stated succinctly that for certain performance metrics, LUMA's and PREPA's performance had not improved when compared to the baseline that was previously set by this Energy Bureau. In what is relevant to this Motion, this Energy Bureau then directed LUMA and PREPA to file by September 1, 2022, "a motion explaining, to the extent possible, the causes of th[e] non-positive negative performance and the corrective measures that [LUMA and PREPA] will implement . . . .". Subsequently, on August 24, 2022, this Energy Bureau issued a Resolution and Order where it determined that from June 2021 through May 2022, "the performance of LUMA remained within the expected baseline target for approximately eighty four percent (84%) of the metrics evaluated . . . .".

On August 24, 2022, this Energy Bureau issued a Resolution and Order whereby it determined to extend its analysis on performance to PREPA's performance since June 2019 for comparison purposes on reliability ("August 24th Order"). Thus, this Energy Bureau directed that on or before September 1, 2022, PREPA should submit an analysis on its non-positive performance from June 19, 2019, through May 31, 2021. *See* August 24th Order at pages 1-2.

On August 26, 2022, LUMA filed a Motion entitled *Request for Extension of Time to Comply with Resolution and Order of August 18, 2022*, requesting additional time, until October 3, 2022, to submit explanations on system data and performance that spans twelve (12) months of operations and to outline corrective actions, as requested by this Energy Bureau. In an Order dated August 30, 2022, this Energy Bureau granted LUMA an extension until September 20, 2022, to file its submission in compliance with the August 18th Order.

On August 31, 2022, PREPA requested an extension up to and including October 6, 2022, to comply with the August 18th and August 24th Orders. In an order dated August 31, 2022, this Energy Bureau granted PREPA an extension until September 20, 2022, to file its submission in compliance with the August 18th and August 24th Orders.

In attention to the threatened passage of Hurricane Fiona through Puerto Rico, on September 16, 2022, LUMA urgently requested that this Energy Bureau extend the time to comply with the August 18th Order up to and including September 30, 2022. On September 17, 2022, PREPA also requested that the time to comply with the August 18th and August 24th Orders be extended up to an including September 30, 2022. Then, on September 21, 2022, PREPA filed a second urgent request for extension of the deadline to comply with the August 18th and August 24th Orders and moved this Energy Bureau to set the new deadline for October 14, 2022. On September 23, 2022, this Energy Bureau ruled that LUMA and PREPA should file their respective submissions in compliance with the August 18th Order by October 14, 2022. By October 14, 2022, PREPA shall also comply with the August 24th Order.

In compliance with the August 18th Order, LUMA hereby submits as **Exhibit 1** to this Motion, explanations on LUMA's performance data from June through May 2021 and proposed corrective actions for several performance metrics. It should be noted that the August 18th Order does not contain any explanation on the methodology used by this Energy Bureau to develop its analysis and develop the conclusions contained therein. As a result, LUMA is not in position to evaluate such methodology and express its position in connection thereto. As the Energy Bureau knows, during the Front-End Transition Period, LUMA was able to assess the state of the main categories of performance metrics, to wit: safety, reliability and customer services. As a result, LUMA concluded that PREPA's performance was well below acceptable industry standards.

*See*, Exhibit 3 of LUMA's *Motion Submitting LUMA's Comments on Performance Metrics Data Presented on January 19th, 2020, by the Energy Bureau and Submitting Proposed Performance Metrics and Baselines* filed on January 29, 2021 in this proceeding. Consequently, LUMA proposed that benchmarks be used for illustrative purposes. Despite the reality of PREPA's performance, LUMA was able to promptly implement the necessary measures to improve such performance as most of the findings in the August 24th Order make clear.

Further, LUMA respectfully requests that this Energy Bureau correct or clarify several portions of Appendix A and Attachment A of the August 18th Order, particularly, its analyses and determinations on the data submitted by LUMA on several performance metrics. *See* **Exhibit 2.** Further, LUMA respectfully requests that this Energy Bureau reconsider or correct several portions of Attachments A and B of the August 18th Order, particularly, its analyses and determinations on the data submitted by LUMA on several performance metrics that involve areas that are not within LUMA's purview or control and thus, the performance data cannot be attributable to LUMA's performance. *See* **Exhibit 3.**

**II. Submission of Explanations and Corrective Actions**

In **Exhibit 1** to this Motion, LUMA includes explanations on its reported performance as well as current and proposed corrective measures for the following performance metrics:

- CAIDI
- Percent of bills estimated vs. read
- SAIDI
- SAIFI
- Cash recovered on theft
- Percent of customers on AMI
- Timely submission of Monthly Operating Report
- Total available vehicles in service - T&D

**III. Requests to Correct Data of Appendix A and Attachment A of the August 18th Order.**

In Appendix A of the August 18th Order, this Energy Bureau referenced performance trends that it identified from the data submitted by LUMA and PREPA in this proceeding. To wit, Appendix A references several reliability, customer service, human resources and Distributed Generation metrics. As explained in **Exhibit 2**, LUMA respectfully requests that this Energy Bureau review and amend several of the conclusions included in Appendix A and Attachment A of the August 18th Order that were drawn from the data filed by LUMA in this docket.

**IV. LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics**

In Attachment A of the August 18th Order, this Energy Bureau included an analyses of the system data that LUMA submitted in its Quarterly Performance Metrics Reports from June 2021 through May 2022. For several metrics, this Energy Bureau determined that LUMA's conclusions on LUMA's performance fell below the baseline or that LUMA was "non-performing." On **Exhibit 3** to this Motion, LUMA outlines its disagreement with or objections to this Energy Bureau's conclusions for several of the metrics that it deemed "non-performing."

**V. Clarification by LUMA**

It is hereby clarified that the data that was submitted to this Energy Bureau regarding the performance metrics on "Annual savings from government energy efficiency program – Legislature" and "Annual savings from government energy efficiency program – Municipalities," is PREPA's performance data.

**WHEREFORE,** LUMA respectfully requests this Honorable Bureau **take notice of the** aforementioned; **deem** that LUMA complied with that portion of the August 18th Order that

requires explanations on LUMA's performance in response to the Energy Bureau's summary of specified metrics included in Attachments A and B of the August 18th Order; and **issue** the amendments, corrections and clarifications requested in this Motion.

**RESPECTFULLY SUBMITTED.**

In San Juan, Puerto Rico, this 14th day of October, 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 the attorneys for PREPA, Joannely Marrero-Cruz, jmarrero@diazvaz.law; and Katiuska Bolaños-Lugo, kbolanos@diazvaz.law, and the Independent Consumer Protection Office, Hannia Rivera, hrivera@jrsp.pr.gov.

**DLA Piper (Puerto Rico) LLC**
500 Calle de la Tanca, Suite 401
San Juan, PR 00901-1969
Tel. 787-945-9107
Fax 939-697-6147

/s/ Margarita Mercado Echegaray
Margarita Mercado Echegaray
RUA NÚM. 16,266
margarita.mercado@us.dlapiper.com

*Exhibit 1*

LUMA

# Response: RFI-LUMA-MI-2021-0007-220818-PREB-1

## SUBJECT

**Percent of bills estimated vs. read**

## REQUEST

A) **Explanation**

B) **Measures to improve performance**

## RESPONSE

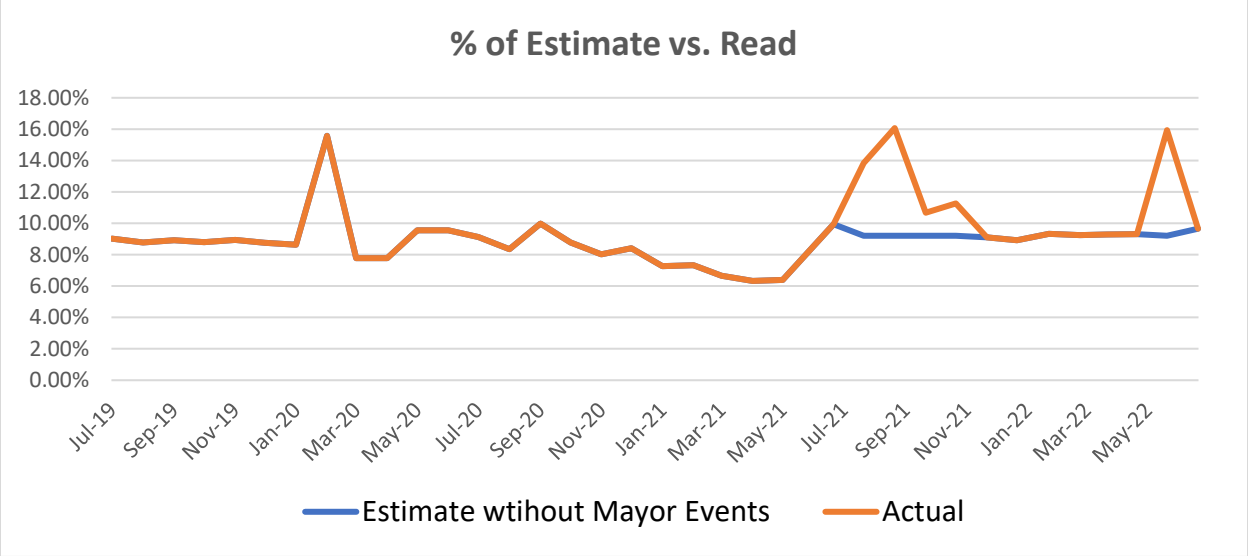
A) LUMA has worked diligently to bring back on line substations technology for both readings and service. Since before commencement of operations there were 50 substations that were either out of service or whose metering communications devices were not communicating reads. LUMA worked to resolve and bring this equipment back into service within the first 90 days operating the T&D System.

The situation LUMA inherited at commencement from the prior operator impacts these numbers in several ways. The lack of investment and routine maintenance of the Two-Way Automatic Communication System (TWACS) meant the system was unsupported and had not been upgraded for many years resulting in inaccuracies and inefficiencies. Additionally, the condition of the electric grid is extremely fragile and there is limited or no redundancy to cover critical system functions such as meter reading. Furthermore, LUMA inherited metering devices operating on 3G cell communications which was not upgraded and needed to be replaced. Upon replacement of cell cards, the reading system for these meters (NES) also required an upgrade which had not been performed since 2015. Notably, more than 80,000 meters monthly were estimating since prior to June 2019 and have been unresolved for many years. The current Automatic Meter Reading (AMR) system is obsolete and powerline communications parts and equipment are not readily available. LUMA is undertaking efforts to address powerline communication with substations to improve remote reading effectiveness.

One reason for the constant estimating meters, as LUMA identified post-commencement, was due to certain daily processes that had not been executed since Hurricane Maria. Furthermore, LUMA inherited a billing system which rejects valid meter reads and estimates accounts with configuration and parameters that are unclear or are not performing as required. These configurations are necessary to be addressed for both estimated an unbilled account issue. LUMA has had to incur in extensive efforts and has invested substantial resources in simply maintaining the extremely fragile and mismanaged programs and processes inherited at commencement.

A number of major system events have impacted the ability for meter reads to be gathered and transmitted to Oracle CC&B for billing purposes. These issues resulted in a higher-than-expected number of estimated bills. Further, the LUMA team is working to optimize CC&B to improve the overall efficiency of the system to evaluate meter reads. The graph below shows the impacts of

the major events experienced in June 2021 and April 2022. For the 6 months, October 2021 – March 2022 the average of estimated bills was 9.2%. If we assume that average for July 2021 – September 2021, April 2022 and June 2022 as shown in the chart below, LUMA would have had an FY22 estimated percentage of approximately 9.24% (Estimate referenced in the below graph), compared to almost 11% of actuals.




**B)** Corrective measures to improve performance are already being executed. A Meter Read and Replacement team was established in Spring 2022. Several initiatives of the Meter Read and Replacement team are listed below in addition to System Remediation Plan activities previously defined.

LUMA has been working to address the systemic and long-standing issues with respect to estimating meters. The efforts underway in LUMA are transformative to the energy grid and supporting systems. At commencement LUMA began repairing non-functioning substations and as a result improve the overall meter reading efficiency for those customers. LUMA also began repairing communications devices related to meter reading in other substations around the island. These communications devices are necessary for gathering and transmitting readings into to TWACS. The TWACS system was unsupported and needed to be updated at commencement. This system has been initially updated but still requires significant investment to maintain. After commencement, LUMA has uncovered that a necessary synchronization process to maintain records between Oracle CC&B and TWACS has not been run since hurricane Maria. This lack of synchronization has created additional steps that are underway and has required additional support from a vendor to develop the pathway to synchronize systems.

After commencement LUMA began detailed work in meter inventory, meter assessments and overall improvements in meter reading. In the initial stages of this effort, it was obvious that long term solutions for AMI replacement are a longer-term opportunity and that the near-term improvement opportunities needed to be addressed. A meter sampling team was formed, and an effort is underway now to replace meters to assess the issues and document a complete business case for a larger effort to replace meters in the near term especially for commercial and

industrial accounts. This meter sampling effort is also supportive of the requirements for the System Remediation Plan (SRP) regarding forming a meter shop and completing evaluations.

Additionally, efforts to improve meter reading efficiency and continuity have been undertaken. For example, the technology for reading some of the Echelon (current AMI meters) meters needed to be changed from 3G to 4G cellular communications technology. This replacement occurred after commencement and required time and effort to complete. The other technology issues are related to technology such as the application for manual meter reading including training employees and evaluating functionality to ensure the availability of meter reads into the system is at peak performance.

As discussed above, LUMA inherited a billing system which rejects valid meter reads and estimates accounts with configuration and parameters that are unclear or are not performing, as necessary. These configurations are necessary to address both the estimated and the unbilled account issue. The Billing Accuracy & Back Office SRP project is specifically intended to address this, and related issues and those efforts are underway.

More details about the ongoing efforts to improve performance of the percent of bills estimated vs. read can be found in the Billing Accuracy & Back Office Improvement Program as part of the SRP.

LUMA

## Response: RFI-LUMA-MI-2021-0007-220818-PREB-2

### SUBJECT

**Cash recovered on theft**

### REQUEST

A) **Explanation**

B) **Measures to improve performance**

### RESPONSE

A) In FY22 LUMA faced challenges due to the significantly dilapidated grid and systems inherited. The operations team completes field investigations, elimination of irregularities and diverted meters. The staff designated to complete these investigations also completes connections, disconnections, meter exchanges, net metering meter changes and street light repairs. This team established themselves first with safety training and then moved on to completing field work. At commencement, this team inherited more than 200,000 service orders that needed to be either worked or cancelled. Priorities needed to be established and thus energy irregularities work was deprioritized temporarily.

The workload across the teams was prioritized to ensure safety and customer connections and other similar work. These decisions impacted the timing to begin training these staff in energy irregularities. Additionally, the dramatic changes in the approach for addressing irregularities required further legal analysis to clarify processes and procedures. This additional analysis was necessary as customer rights, protections and individual due process of law is important to LUMA. Governmental policies prohibiting disconnection of service for non-payment also impacted performance in this area. Because of the COVID crisis efforts to stem non-technical losses at PREPA did not include disconnection and most efforts during the COVID crisis were suspended.

B) LUMA has changed the overall organizational structure of the teams that complete work regarding the detection, investigation and related customer contact and billing of non-technical losses suspected or found. Customers who are diverting around a meter, tampering and modifying metering equipment and related forms of energy irregularities or theft are being detected, investigated, and pursued. LUMA's strategy is to reduce the overall number of non-technical losses first and foremost in focusing on unbilled and underbilled issues. These efforts across non-technical losses are directly connected to the efforts in reducing theft.

In order to redeploy a utility standard process LUMA has reviewed and evaluated how to effectively reduce irregularities while maintaining customer rights. LUMA is coordinating with relevant authorities to finalize key customer procedures and processing of energy irregularities and theft. LUMA currently anticipates completing the remaining procedural requirements to finalize the approach by the end of December. LUMA has developed multiple procedures, documented these and trained personnel. Leadership within Utility Transformation, Customer

Experience and Operations also needed additional time to align goals and functions to provide for necessary oversight.

More details about the ongoing efforts to improve performance of the cash recovered on theft can be found in the Billing Accuracy & Back Office Improvement Program as part of the SRP.

LUMA

# Response: RFI-LUMA-MI-2021-0007-220818-PREB-3

## SUBJECT

**Percent of customers on AMI**

## REQUEST

A) **Explanation**

B) **Measures to improve performance**

## RESPONSE

A) LUMA does not have an Advanced Metering Infrastructure (AMI). LUMA has conducted a series of discussions with the Puerto Rico Department of Housing (Vivienda), the US Department of Housing, and COR3 regarding funding for AMI Projects. Throughout the discussions, LUMA has provided detailed documentation of the AMI projects including an overview of existing conditions, the goals and approach for the project, potential impact, risks, issues, project budget, timeline, and benefit cost analysis. Through ongoing discussions with COR3, LUMA provided the AMI project description, scope, and costs. Upon review of the project documentation, COR3 stated that there is currently no mechanism to fund the AMI project, resulting in the project being placed in "hold" status until a funding source can be identified. COR3 is actively evaluating funding sources available. LUMA has a production Automated Metering Reading (AMR) system. The production AMR system is past its useful life and replacement meters need to be specially produced in order for them to be read by the AMR power line communication system. Currently, LUMA has a limited amount of meters (from Echelon) that were installed for testing purposes. The Echelon meters were never selected to be used as part of an AMI system and therefore, the number of meters has not been expanded. Importantly, Echelon is no longer in the business of selling advanced meters.

B) The deployment of additional AMI meters in Puerto Rico depends on future investments in technology and metering infrastructure. Those investments are a significant future project potentially to be funded through federal funding or at a cost for all customers to cover. Further deployment of AMI in Puerto Rico requires significant infrastructure investment not just in meters but in communications networks that are not currently in place and the systems broadly into billing infrastructure. During the fall of 2021, LUMA initiated discussions with Vivienda regarding the installation of AMI as an unmet need associated with electrical system resilience. An overview of the AMI project is included in the publicly available document published by Vivienda titled, Puerto Rico Disaster Recovery Action Plan for the Use of CDBG-DR Funds for Electrical Power System Enhancements and Improvements, accessible at this link (at page 58). LUMA has also prepared a detailed Unfunded Needs Summary, shared with various agencies. LUMA is currently waiting for the results of the CDBG DR evaluation of funding sources. LUMA is continuing to develop the business proposal for the implementation of AMI and explore additional funding options. LUMA's Roadmap for Deploying AMI has been included as Attachment 1 of Exhibit 1.

More details about the ongoing efforts to improve performance of the percent of customers on AMI can be found in the Billing Accuracy & Back Office Improvement Program as part of the SRP.

## Response: RFI-LUMA-MI-2021-0007-220818-PREB-4

---

**SUBJECT:**

**Timely submission of Monthly Operating Report**

**REQUEST:**

A) **Explanation**

B) **Measures to improve performance**

**RESPONSE:**

A) The reason for LUMA's delays in the submissions of the Monthly Operating Report in FY22 are largely due to inherited gaps in PREPA's financial systems, lack of established processes and procedures, and data quality issues.

PREPA did not have well documented financial close processes and procedures in place at commencement to assist in the transition to LUMA. As well, discrepancies in the inherited CC&B System have caused inaccurate data to require reconciliation which has also negatively impacted LUMA's ability to deliver the MOR within 21 days.

Additionally, June, July and August were specifically impacted by FY21 year-end close efforts activities. If those months are removed from the FY22 average, the average numbers of days to deliver the MOR is reduced from 40 to 27.

Discrepancies in the inherited CC&B system causing inaccurate data to require reconciliation has also negatively impacted LUMA's ability to deliver the MOR within 21 days.

B) LUMA is executing an improvement program to address the required modifications to the inherited financial systems. This program is part of the SRP and is designed to address the deficiencies identified in the Gap Assessment of PREPA's legacy financial systems and controls. LUMA is also working to document the necessary procedures.

LUMA has begun distributing a month-end calendar, highlighting key reports and approval deadlines, to LUMA and PREPA's finance teams. This supports greater accountability in meeting deadlines to assure the timely delivery of the MOR.

LUMA has also implemented a bi-weekly Finance Shared Services Coordination Meeting with PREPA to proactively address month-end items, escalate risks and issues, discuss any delays or

outstanding requests, and propose process improvement opportunities. This meeting has helped expedite month-end close and the delivery of the MOR.

More details about the ongoing efforts to improve performance of the timely submission of Monthly Operating Report can be found in the Critical Financial Controls Improvement Program as part of the SRP.

LUMA

## Response: RFI-LUMA-MI-2021-0007-220818-PREB-5

**SUBJECT:**

**Total available vehicles in service**

**REQUEST:**

**A) Explanation**

**B) Measures to improve performance**

**RESPONSE:**

**A)** Upon starting operations, LUMA kicked off the process of a proper identification of all the fleet assets received from PREPA. During the Front-End Transition period LUMA was not allowed access to the different locations to collect physical inventories and evaluate conditions of the vehicles. Our team was able to visually confirm less than half of the fleet assets that PREPA listed in the documentation that they provided during the Front-End Transition. LUMA had to wait until the start of operations to begin a proper and full process of evaluation and reconciliation.

It is important to note that during the evaluation stages of PREPA's fleet, LUMA repeatedly notified PREPA's Executive Leadership of the poor condition and lack of compliance with the US FMCSA (Department of Transportation), OSHA, and Puerto Rico CSP/NTSP safety regulations and the grave risk it posed to the public who shared the roadways with PREPA's vehicles, as well as to PREPA's employees operating equipment. This lack of compliance was so severe that 100% of PREPA's Heavy Duty and Aerial Equipment Fleet under use was non-compliant with safety regulations.

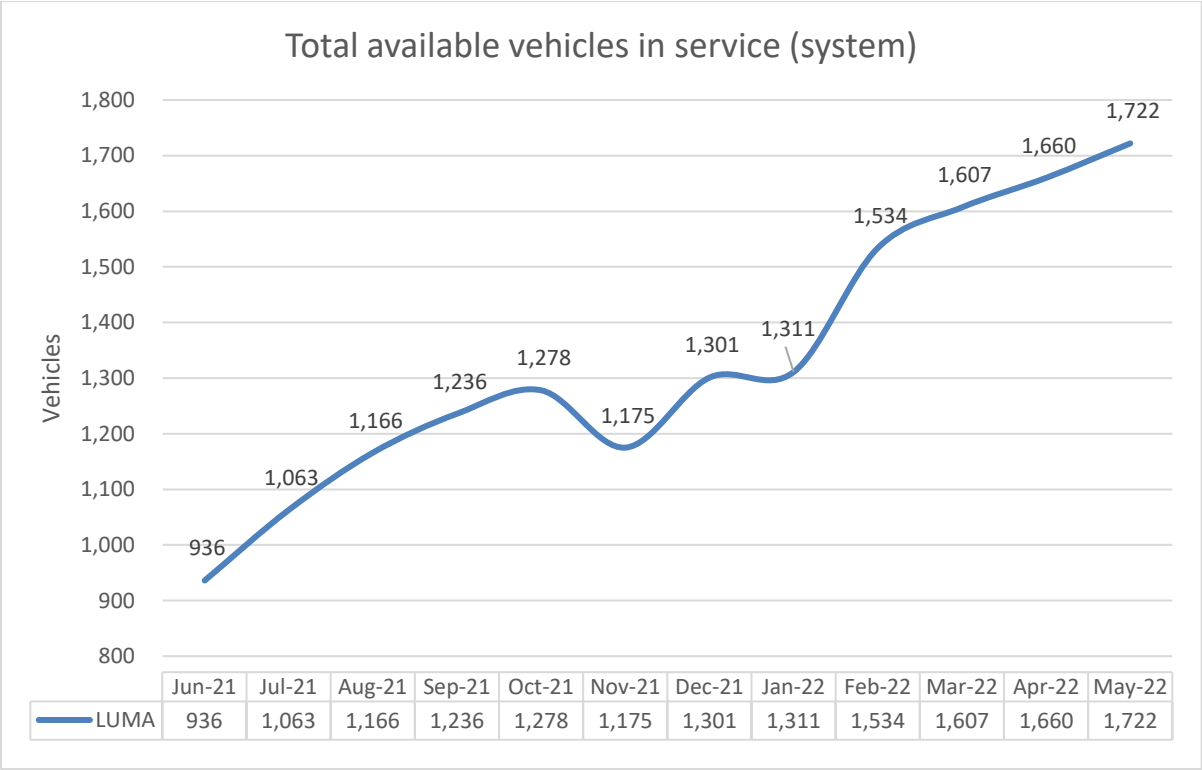
**B)** The fleet department developed and implemented several strategies necessary to properly certify a true inventory of active vehicles and equipment and to comply with LUMA's responsibilities under the T&D OMA. The fleet for the T&D System increased from 936 vehicles in June 2021 to 1722 in May 2022, an increase of 54% in Total Available Vehicles in Service. As a result of this process, we were able to identify several units that were abandoned in various locations on the island. These units were already in unusable conditions (effectively scrap material) under PREPA's responsibility. We also identified units that were not in safe operating condition which were either repaired as required for certification or were classified as scrap units that did not meet minimum standards. After several months LUMA was able to identify additional units, but there are a number of units on PREPA's list that have never been visually confirmed.

In order to increase the number of vehicles in the fleet, in the third quarter of FY22, 195 light and 55 medium duty units were incorporated to the fleet, and additional efforts were made during the first three quarters of operation in FY 2022 which represented a significant reduction in the number of unaccounted vehicles in the fleet from around 2,000 to 667 or about 66% of reduction in unaccounted vehicles.

All of the LUMA Heavy Duty and Aerial Equipment Fleet being utilized for operation and maintenance of the T&D System is fully compliant with applicable US FMCSA (DOT), OSHA,

ANSI and PR CSP/NTSP regulations. We are committed to having our employees operate safe equipment that also supports the safety of all drivers who share the roadways.

The following chart show the total available vehicles in service from June 2021 through May 2022.




LUMA is also undertaking efforts to complete the training of 40 mechanics in the repair of aerial systems by the manufacturer. This will help us to speed up the repair process. We are implementing processes of purchasing parts and work authorizations to speed up the repair process with our mechanics and external providers to increase the available units.

More details about the ongoing efforts to improve performance of the fleet for the T&D System can be found in the T&D Fleet Improvement Program as part of the SRP.

LUMA

## Response: RFI-LUMA-MI-2021-0007-220818-PREB-6

**SUBJECT:**

**SAIDI - System**

**REQUEST:**

A) **Explanation**

B) **Measures to improve performance**

**RESPONSE:**

A) During the period of July 2021 to May 2022, LUMA encountered significant challenges in maintaining and improving reliability. Aging infrastructure and system design all affected day-to-day system-wide reliability. The service restoration times, measured by the System Average Interruption Duration Index (SAIDI) worsened. Several factors contributed to this:

- Safety improvements - Safety is of paramount importance to LUMA. Given our capabilities in this critical area at commencement, a significant amount of time and effort was dedicated to training our field employees, thus ensuring safe practices are in place when work is performed on electrical systems. As this focus required changes in both practices and culture, the learning curve and subsequent effect on productivity were evident, resulting in extended repair and restoration times. This adversely affected the time of restoration; however, this is a temporary effect.

- Poor condition of critical equipment - LUMA inherited a significant number of out of service assets or equipment which require replacement. These include: distribution feeders, transmission lines, circuit breakers, transformers, reclosers, capacitor banks, and protection equipment. In fact, nearly 25 percent of the 1200 substation breakers were out of service when LUMA began operations, over a third of which have now been repaired or replaced. Though these out of service assets have all been assessed and/ prioritized based on their effect on reliability, long-lead times to order replacements and conduct repairs have had a significant impact on system flexibility. Rather than having the ability to simply back feed substations (i.e.., shorter restoration times), returning service to customers required more extensive repairs, thus extending service restoration times.
- Work methods improvements – As stated above, LUMA modified past approaches to restoration by making permanent repairs that address the root cause of a service outage. LUMA field crews are not just repairing existing damaged poles, wires, and fuses, but upgrading damaged facilities, taking the time necessary to correct any malfunctioning equipment, replacing old and worn hardware, and configuring the electrical circuits to industry standards. Maintaining the previous practices, though quicker, is unsustainable, will result in repeat outages, and is contrary to Prudent Utility Practice.

The situation at commencement (June 2021) warrants discussion as several ancillary factors, outside of those experienced in normal utility operations, affected the length of time required for restoration:

- Several facilities were blocked and operationally unavailable. This required crews to work out of alternate locations, resulting in reduced local coverage and subsequently extended travel.
- The number of fleet vehicles turned over from PREPA at commencement was significantly lower than expected. As a result, crews did not have the vehicles required to perform their work, and/or were less efficient.
- Delays in gaining approval of vegetation maintenance contracts significantly reduced the availability of vegetation crews, a significant item when one notes that vegetation is the leading cause of outage events across the island.
- The Palo Seco facilities were blocked with protests until June 5th, restricting access to transmission and central distribution inventory for the company, and thus delaying material management activities and warehouse replenishment across the island.

**B)** In addition to improved operational performance as crews execute using enhanced procedures, LUMA is executing infrastructure improvement programs to address the underlying challenges. LUMA's corrective actions are addressed in part within the System Remediation Plan (SRP), where specific improvement programs were developed to improve LUMA's delivery of safe, reliable, and resilient electric service, including:

- Transmission and Distribution Pole & Conductor Repair: The effect of high-risk findings during the high-level assessment of the distribution poles, hardware, and conductors, continues to be mitigated. After the completion of required repairs and replacements of distribution poles, structures, and conductors, LUMA will have established a system that is more resilient to severe weather with higher service reliability and has assets with an extended life span.
- Transmission and Distribution Line Rebuild: This program replaces damaged or ineffective overhead and underground lines. Line rebuilds increase service continuity and reliability to customers by replacing and upgrading facilities that have poor reliability performance and adding and completing facilities that allow for alternate feeds. LUMA is developing loop schemes to increase backups where possible.
- Transmission and Distribution Substation Reliability Improvements: This program reinforces and upgrades the existing and aging system infrastructure to improve system reliability. This program continues to facilitate safety improvement by replacing equipment prone to failure and enhancing protection systems to properly de-energize failed equipment. This reduces safety risks for both employees and reduces the impacts of major forced outages due to aged equipment.
- Distribution Automation: This program addresses equipment for distribution automation, including the deployment of intelligent switches, such as single-phase and three-phase reclosers. Distribution automation deployment is being prioritized based on reliability performance. These efforts include the installation of technologies to serve as line segmentation and/or protection devices, midline, cutout mounted protective devices, and fault indicators, aimed at enabling the rapid isolation of system faults and isolation of customers not directly on the faulted section of the line.
- LUMA Vegetation Strategic Approach: LUMA is shifting from the largely reactive approach of clearing vegetation to allow repairs that was necessary when LUMA operations began to a

more systematic reclamation of the right-of-way, thus reducing the frequency of tree-caused outages. This transition is happening as the frequency of unplanned outage events continues to decrease, allowing vegetation management to adopt a more proactive stance.

The following programs are not included in the System Remediation Plan, but are in process of implementation to improve reliability performance during FY 2023:

- Improved asset monitoring: LUMA is deploying incremental capabilities, including thermography, to identify failing equipment, whose proactive repairs will lead to improved SAIDI. This capability will be deployed on drones that will prioritize inspections for reliability improvement.
- Increased focus: LUMA is shifting how crews carry out work so that crews can devote more time to service restoration, leading to reduced outage durations without compromising public and employee safety.

LUMA continues with extraordinary efforts to improve reliability, focusing on costumer minutes interrupted and outage reduction. The following initiatives are in the process of being executed for short-term project solutions that will improve outage response:

- Onboard and deploy experienced workers for reliability work and Outage Response
- Onboard Local Line Contractors
- Onboard and Deploy Contractors for Reconstruction Work
- Conduct Accelerated Vegetation Management of Top Critical Lines.
- Onboard and Deploy Contractor Workers
- Install new state-of-the-art automation devices

Utility employees are working hard to advance projects and implement reliability improvements to Puerto Rico's electric grid to reduce the frequency and duration of outages experienced by customers.

LUMA

## Response: RFI-LUMA-MI-2021-0007-220818-PREB-7

---

**SUBJECT:**

**System SAIDI (by district)** for districts of Arecibo, Manatí Quebradillas, Bayamón, Corozal, Palo Seco, Vega Baja, Caguas, Humacao, Canóvanas, Fajardo, Aguadilla, Mayagüez, San Germán, San Sebastián, Guayama, Santa Isabel, Yauco, Guaynabo, Monacillos y Rio Piedras.

**REQUEST:**

A) **Explanation**

B) **Measures to improve performance**

**RESPONSE:**

A) Please refer to the LUMA provided explanations for its performance in SAIDI-System as described in RFI-LUMA-MI-2021-0007-220818-PREB-6.The basis for the performance affects all the municipalities in its service territory and should be considered on a system-wide basis.

B) LUMA's corrective actions for areas described are similar to the plan described on RFI-LUMA-MI-2021-0007-220818-PREB-6 and are addressed within the SRP, where specific improvement programs were developed to improve LUMA's delivery of safe, reliable, and resilient electric service.

LUMA

## Response: RFI-LUMA-MI-2021-0007-220818-PREB-8

---

**SUBJECT:**

**System SAIFI (by district)** for the districts of Arecibo, Bayamon, Vega Baja, Aguadilla, Guayama, Yauco, Monacillos, and Rio Piedras.

**REQUEST:**

A) **Explanation**

B) **Measures to improve performance**

**RESPONSE:**

A) System Average Interruption Frequency Index (SAIFI), measuring the number of sustained outages experienced by the average customer across the Island according to IEEE 2.5 beta standards, improved by 30 over percent over as compared to the PREPA baseline. LUMA continues to make performance improvements, including the following:

- Continued focus to repair and / or replace key grid assets,
- Concentrated effort to effect permanent repairs when restoring service during unplanned outages, and
- Well-targeted vegetation management interventions in responding to tree-caused outages and / or clearing of right-of-way.

The basis for the performance affects all the municipalities in its service territory and should be considered on a system-wide basis. As we continue to execute island-wide efforts to improve reliability and resiliency, we expect to see improvements in the above districts as well.

Factors affecting SAIFI include:

- Poor condition of critical equipment - LUMA inherited a considerable number of out of service assets and/ equipment. The list totaled 816 items ranging across the full gamut of the T&D system assets including distribution feeders, transmission lines, circuit breakers, transformers, reclosers, capacitor banks, and protection equipment. In fact, nearly 25 percent of the 1200 substation breakers were out of service, increasing the number of customers affected and system outages.
- Delays in gaining approval of vegetation maintenance contracts significantly reduced the availability of vegetation crews, a significant item when one notes that vegetation is the leading cause of outage events across the island.

**B)** LUMA's corrective action plan across the whole island is addressed within the SRP, where specific improvement programs were developed to improve LUMA's delivery of safe, reliable, and resilient electric service, including:

- Transmission and Distribution Pole & Conductor Repair: The effect of high-risk findings during the high-level assessment of the distribution poles, hardware, and conductors, continues to be mitigated. After the completion of required repairs and replacements of distribution poles, structures, and conductors, LUMA will have established a system that is resilient to severe weather with higher service reliability and operates assets with an extended life span, reducing customer affected and outages in the system.
- Transmission and Distribution Line Rebuild: This program replaces damaged or ineffective overhead and underground lines. Line rebuilds increases service continuity and reliability to customers by replacing and upgrading facilities that have poor reliability performance and adding and completing facilities that allow for alternate feeds, reducing customer affected and outages in the system. LUMA is deploying loop schemes to increase backups where possible.
- Transmission and Distribution Substation Reliability Improvements: This program reinforces and upgrades the existing and aging system infrastructure to improve system reliability. This program continues to facilitate safety improvement by replacing equipment prone to failure and enhancing protection systems to properly de-energize failed equipment. This reduces safety risks for both employees and Reduction of major forced outage impacts due to aged equipment LUMA's corrective action plan across the whole island are addressed within the System Remediation Plan, where specific improvement programs were developed to improve LUMA's delivery of safe, reliable, and resilient electric service, including:
- Transmission and Distribution Pole & Conductor Repair: The effect of high-risk findings during the high-level assessment of the distribution poles, hardware, and conductors, continue to be mitigated. After the completion of required repairs and replacements of distribution poles, structures, and conductors, LUMA will have established a system that is resilient to severe weather with higher service reliability and operates assets with an extended life span, reducing customer affected and outages in the system.

The following programs are not included in the System Remediation Plan, but are in process of implementation to improve reliability performance during FY 2023:

- Distribution Automation: This program (Distribution Automation) addresses equipment for distribution automation, including deployment of Intelligent switches, such as single-phase and three-phase reclosers Fault Location, Isolation, and Service Restoration (FLISR) system. Distribution automation deployment will be prioritized based on reliability performance. These efforts will include the installation of technologies to serve as line segmentation/ and/or protection devices, midline, cutout mounted protective devices, and fault indicators, aimed at enabling the rapid isolation of system faults and isolation of customers not directly on the faulted section of the line.
- LUMA Vegetation Strategic Approach: LUMA will affect a shift from the heretofore necessary reactive approach of clearing vegetation to allow repairs to a more systematic reclamation of the right-of-way, thus reducing the frequency of tree-caused outages. This will be a transition as the frequency of unplanned outage events continues to decrease, allowing the vegetation management focus to adopt a more initiative-taking stance.
- Enhanced Asset Monitoring: LUMA is deploying advanced technologies, including thermography to identify failing equipment, whose initiative-taking repairs will lead to

improved SAIFI. This capability will be deployed on drones that will prioritize inspections for reliability improvement. This program (Distribution Automation) addresses equipment for distribution automation, including deployment of Intelligent switches and a Fault Location, Isolation, and Service Restoration (FLISR) system. Distribution automation deployment will be prioritized based on reliability performance. These efforts will include the installation of line segmentation/ and/or protection devices, midline, cutout mounted protective devices aimed at enabling isolation of customers not directly on the faulted section of line. Adding protection devices results in fewer customers being impacted for faults.

- LUMA Vegetation Strategic Approach: LUMA will affect a shift from the here to fore necessary reactive approach of clearing vegetation to allow repairs to a more systematic reclamation of the right-of-way, thus reducing the frequency of tree-caused outages. This will be a transition as the frequency of unplanned outage events continues to decrease, affording the vegetation management focus to adopt a more proactive stance.

LUMA

## Response: RFI-LUMA-MI-2021-0007-220818-PREB-9

**SUBJECT:**

**CAIDI**

**REQUEST:**

A) **Explanation**

B) **Measures to improve performance**

**RESPONSE:**

A) Customer Average Interruption Duration Index (CAIDI) represents the ratio between the System Average Interruption Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI), which describes the average time required to restore service. As LUMA improvement over SAIFI has been extraordinary (30%), interruption duration has been facing challenges, consequently deteriorating CAIDI. Thus, SAIDI or SAIFI performance variability affects CAIDI on a positive or negative way accordingly.

B) LUMA's focus is on improving SAIDI and SAIFI performance. This will change CAIDI. Based on growing industry concerns, CAIDI is very limited as a performance metric.

As discussed above, efforts including requiring the workforce to follow safer procedures have led to temporary increases in response times, and policy changes including focusing on root-cause fixes have led to increases in response times that will eventually result in reliability improvements. Furthermore, programs included in the System Remediation Plan will help improve performance. Elements to improve performance specifically include improved operational efforts, where specific improvement programs were developed to improve LUMA's delivery of safe, reliable, and resilient electric service while improving restoration times to customers affected, including:

- Distribution Automation: This program addresses equipment for distribution automation, including deployment of line fault indicators, aimed at enabling the rapid identification of faults to improve restoration times.
- Increase the focus of the workforce in responding to outages: LUMA is shifting how crews carry out work so that crews can devote more time to service restoration, leading to reduced outage durations without compromising public and employee safety. LUMA continues with extraordinary efforts to improve reliability metrics, focusing on customer minutes interruptions and outage reduction.
- The following initiatives are in process for short-term project solutions that will improve outage response:

Distribution Automation: This program (Distribution Automation) addresses equipment for distribution automation, including deployment of Intelligent switches and a Fault Location, Isolation, and Service Restoration (FLISR) system. Distribution automation deployment will be prioritized based on reliability performance. These efforts will include the installation of line fault indicators, aimed at enabling the

rapid isolation of system faults and isolation of customers not directly on the faulted section of line identification of faults to improve restoration times.

LUMA Vegetation Strategic Approach: LUMA will affect a shift from the here to fore necessary reactive approach of clearing vegetation to allow repairs to a more systematic reclamation of the right-of-way, thus reducing the frequency of tree-caused outages. This will be a transition as the frequency of unplanned outage events continues to decrease, allowing the vegetation management focus to adopt a more proactive stance.

LUMA continues with extraordinary efforts to improve reliability metrics, focusing on costumer minutes interruptions and outage reduction. The following initiatives are in process for short-term project solutions that will improve outage response:

- Onboard and deploy experienced workers for reliability work and Outage Response
- Onboard Local Line Contractors
- Onboard and Deploy Contractors for Reconstruction Work
- Conduct Accelerated Vegetation Management of Top Critical Lines.
- Top Critical Lines
    - Onboard and Deploy Contractor Workers up to 450
- Install new state-of-the-art automation devices

Utility employees are working hard to advance projects and implement reliability improvements to Puerto Rico's electric grid to reduce the frequency and duration of outages experienced by customers.

- Mechanics' tools, and equipment at fleet shops.

- Assessment of all fleet shops to identify deficiencies and perform facility and structural improvements at all fleet shops.

- Ensure compliance with DTOP, CSP, US DOT, OSHA, and ANSI standards, along with recommended inspection and maintenance requirements from the equipment manufacturers.

- Deployment of an FMIS to track maintenance records for all fleet vehicles and preventative maintenance programs.

- Removal from fleet ships of end-of-life fleet, obsolete inventory, all other non-functional equipment, hazardous waste, and other detritus.

- Rebranding of PREPA fleet to identify it as part of LUMA, as specified by US DOT (i.e., that commercial motor vehicles display the company name and US DOT number).

Installation of double-walled fuel tanks at all 25 fleet shops to serve as an emergency supply for day-to-day operations, aimed at improving efficiency for line workers, as well as reducing the risk of theft at the retail. This will also allow for additional fuel to be stored for use during storm seasons.


# Roadmap for Deploying Advanced Metering Infrastructure (AMI) in Puerto Rico

October 12, 2022

# Roadmap for Deploying AMI in Puerto Rico

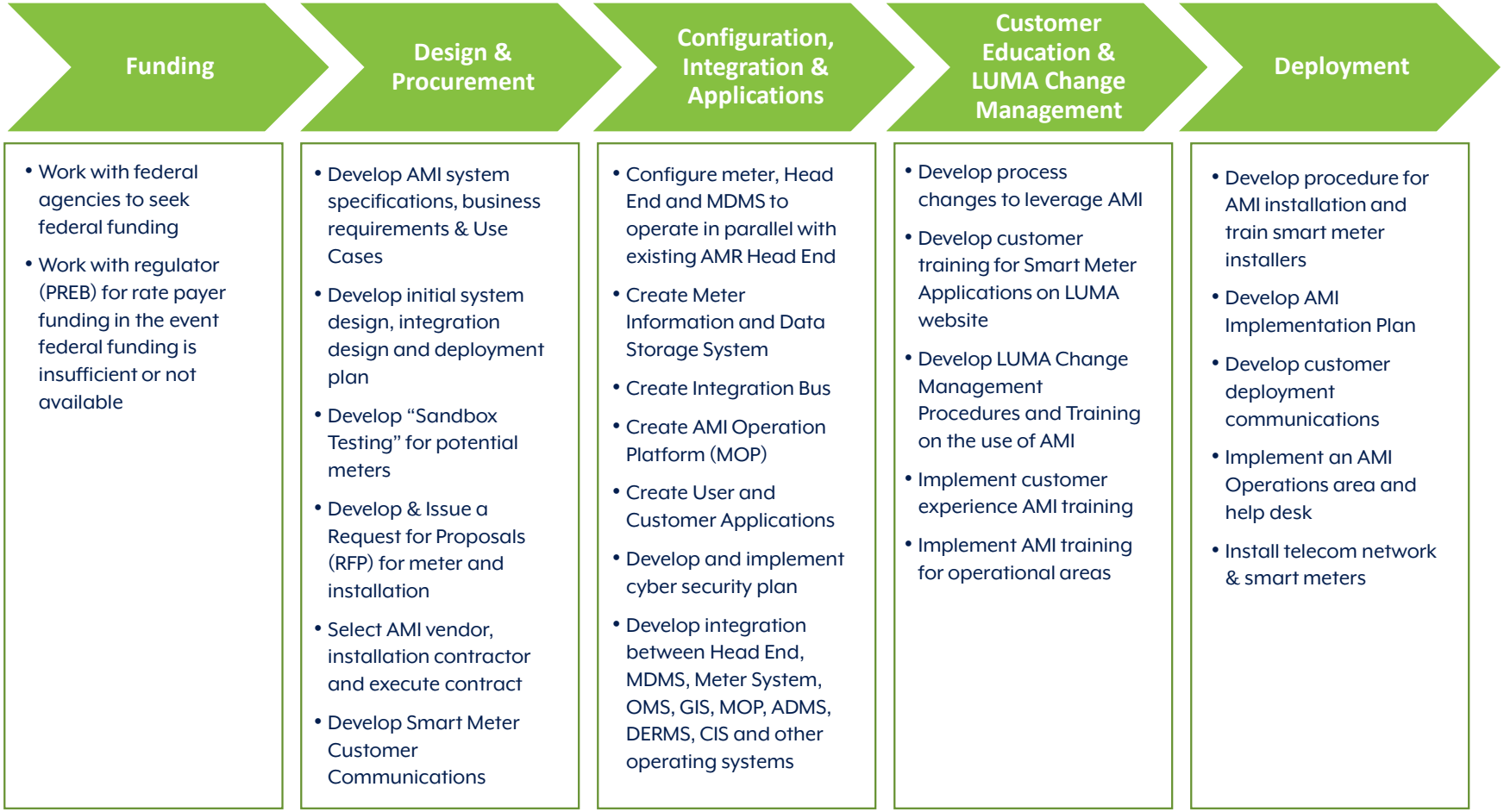


*Exhibit 2*

# Metrics Needing Correction on August 18th, 2022, R&O



## 1. Number of customer complaints closed by class (Act 57 Claims). August 18th, 2022, R&O Appendix A, Customer Service Section.

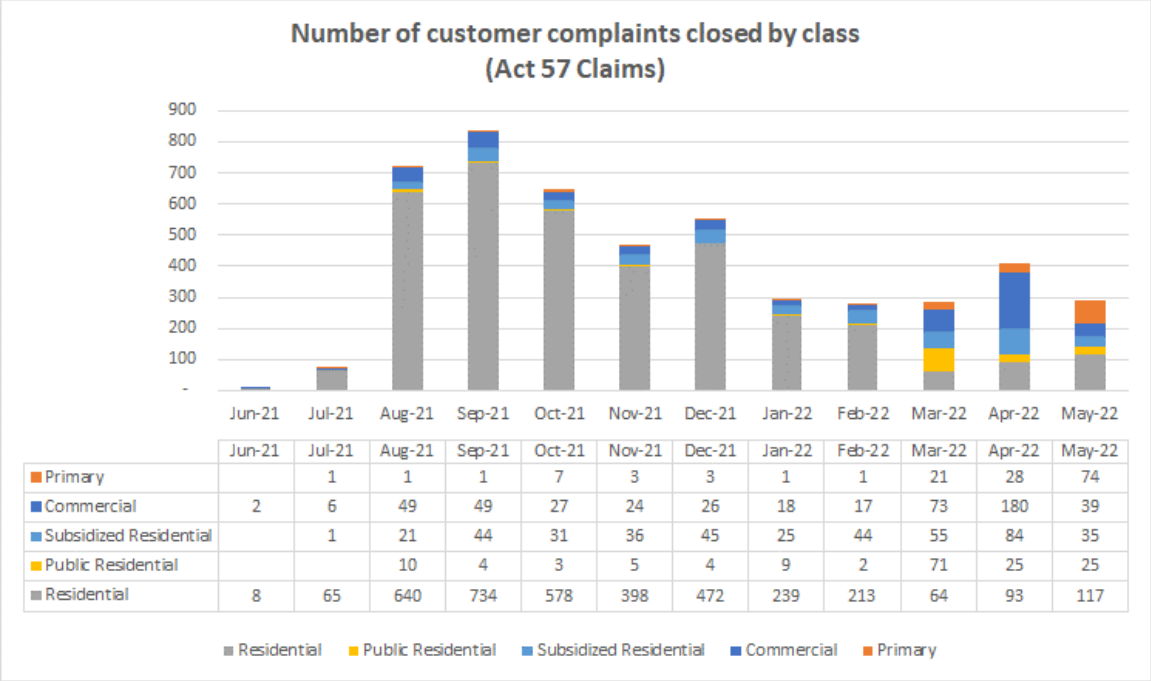
August 18th, 2022, R&O data from Appendix A, Customer Service section, for the last quarter (Mar-2022 - May 2022 quarter) does not coincide with LUMA's data on filing of July 29th, 2022. Data highlighted for the quarter of Mar-2022 to May-2022 varies significantly from the data in the August 18th, 2022, R&O (see table below) due to a correction submitted with the filing of July 29th, 2022, Performance Metrics Report for June 2022.

| | | | | | | | | | | LUMA | | | August 18th R&O | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MONTH** | **Jun-21** | **Jul-21** | **Aug-21** | **Sep-21** | **Oct-21** | **Nov-21** | **Dec-21** | **Jan-22** | **Feb-22** | **Mar-22** | **Apr-22** | **May-22** | **Mar-22** | **Apr-22** | **May-22** |
| **Primary** | | 1 | 1 | 1 | 7 | 3 | 3 | 1 | 1 | 21 | 28 | 74 | 1 | 6 | 2 |
| **Commercial** | 2 | 6 | 49 | 49 | 27 | 24 | 26 | 18 | 17 | 73 | 180 | 39 | 26 | 17 | 28 |
| **Subsidized Residential** | | 1 | 21 | 44 | 31 | 36 | 45 | 25 | 44 | 55 | 84 | 35 | 23 | 12 | 28 |
| **Public Residential** | | | 10 | 4 | 3 | 5 | 4 | 9 | 2 | 71 | 25 | 25 | 6 | 1 | 2 |
| **Residential** | 8 | 65 | 640 | 734 | 578 | 398 | 472 | 239 | 213 | 64 | 93 | 117 | 160 | 89 | 160 |

# Metrics Needing Correction on August 18th, 2022, R&O

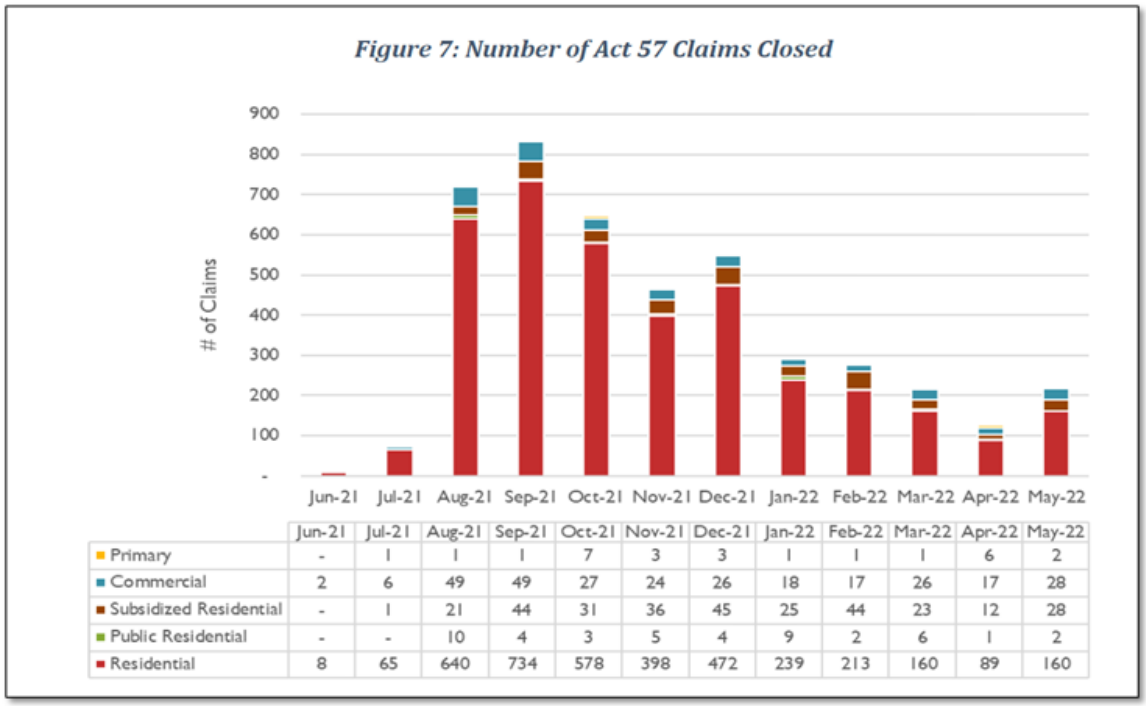


***Figure 7: Based on LUMA's Performance Metrics Quarter Report filing.***




| | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 | Jan-22 | Feb-22 | Mar-22 | Apr-22 | May-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | | 1 | 1 | 1 | 7 | 3 | 3 | 1 | 1 | 21 | 28 | 74 |
| Commercial | 2 | 6 | 49 | 49 | 27 | 24 | 26 | 18 | 17 | 73 | 180 | 39 |
| Subsidized Residential | | 1 | 21 | 44 | 31 | 36 | 45 | 25 | 44 | 55 | 84 | 35 |
| Public Residential | | | 10 | 4 | 3 | 5 | 4 | 9 | 2 | 71 | 25 | 25 |
| Residential | 8 | 65 | 640 | 734 | 578 | 398 | 472 | 239 | 213 | 64 | 93 | 117 |

***PREB August 18th, 2022, R&O Appendix A, Customer Service, Figure 7: Number of Act 57 Claims Closed***




| | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 | Jan-22 | Feb-22 | Mar-22 | Apr-22 | May-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | - | 1 | 1 | 1 | 7 | 3 | 3 | 1 | 1 | 1 | 6 | 2 |
| Commercial | 2 | 6 | 49 | 49 | 27 | 24 | 26 | 18 | 17 | 26 | 17 | 28 |
| Subsidized Residential | - | 1 | 21 | 44 | 31 | 36 | 45 | 25 | 44 | 23 | 12 | 28 |
| Public Residential | - | - | 10 | 4 | 3 | 5 | 4 | 9 | 2 | 6 | 1 | 2 |
| Residential | 8 | 65 | 640 | 734 | 578 | 398 | 472 | 239 | 213 | 160 | 89 | 160 |

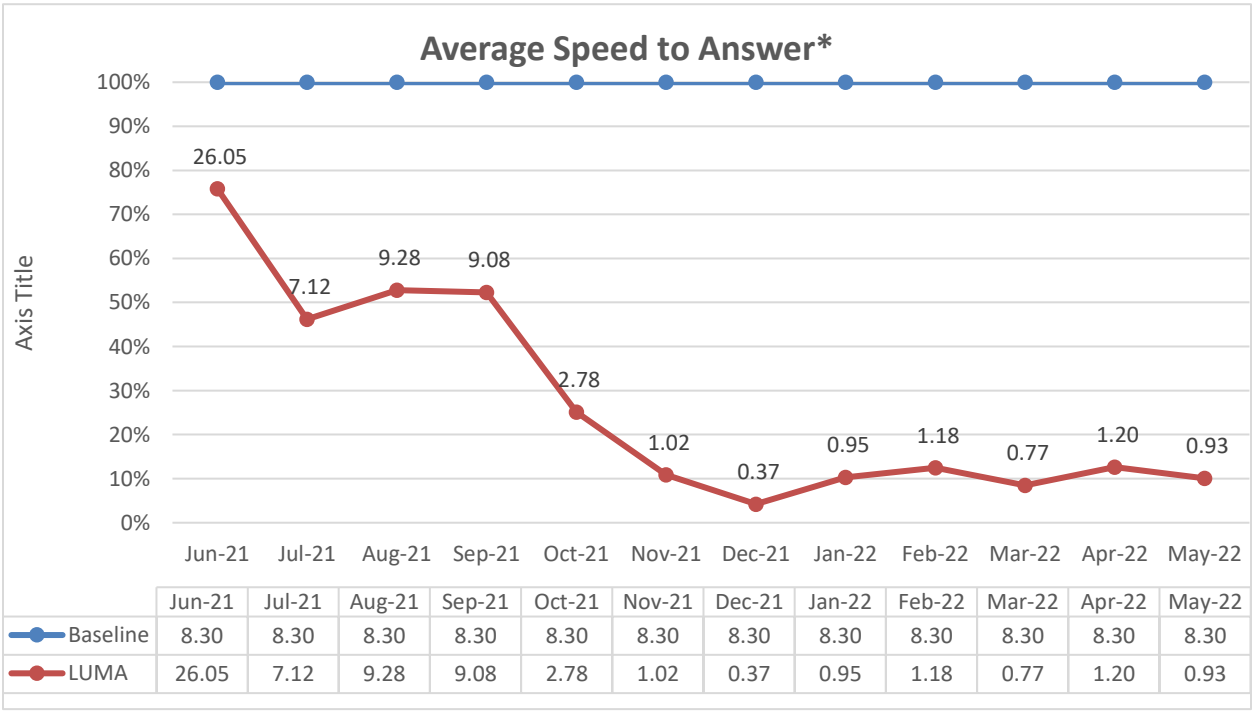
# Metrics Needing Correction on August 18th, 2022, R&O

## 2. Average speed to answer: August 18th, 2022, R&O, Appendix A, Customer Service section. Also referred to as Attachment B, R&O Metric #81.

PREB's Data differs significantly, as no data points match (highlighted) the information reported by LUMA on performance metrics quarterly reports. According to LUMA's records of the data filed between June 2021 and May 2022, and the data shown in the August 18th, 2022, R&O, Appendix A, Customer Service section, Figure 9.

| Month | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 | Jan-22 | Feb-22 | Mar-22 | Apr-22 | May-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Baseline** | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 |
| **LUMA** | 26.05 | 7.12 | 9.28 | 9.08 | 2.78 | 1.02 | 0.37 | 0.95 | 1.18 | 0.77 | 1.20 | 0.93 |
| **August 18th R&O** | 1.30 | 1.10 | 0.40 | 0.60 | 0.30 | 1.10 | 0.40 | 1.00 | 0.10 | 0.10 | 0.60 | 0.80 |

***Figure 9: Based on LUMA's Performance Metrics Quarter Report filing.***

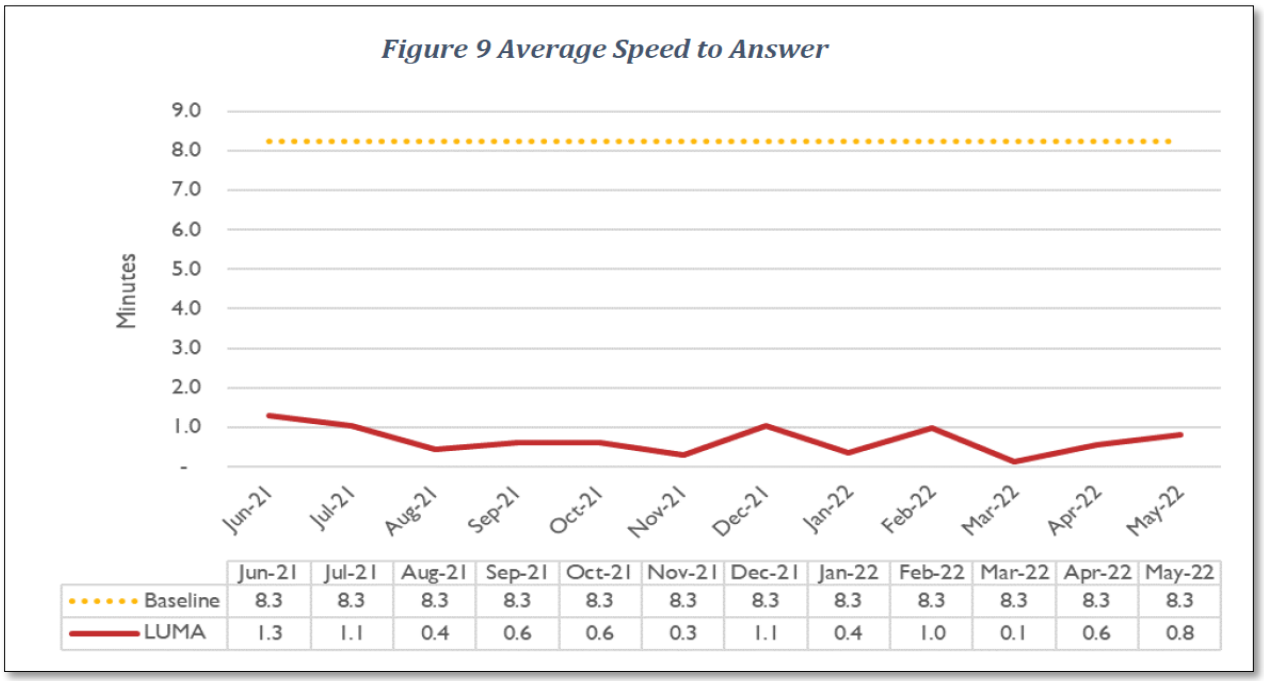



| | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 | Jan-22 | Feb-22 | Mar-22 | Apr-22 | May-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Baseline | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 | 8.30 |
| LUMA | 26.05 | 7.12 | 9.28 | 9.08 | 2.78 | 1.02 | 0.37 | 0.95 | 1.18 | 0.77 | 1.20 | 0.93 |

# Metrics Needing Correction on August 18th, 2022, R&O



***PREB R&O August 18th, 2022: Appendix A, Customer Service section, Figure 9***




| | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 | Jan-22 | Feb-22 | Mar-22 | Apr-22 | May-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Baseline | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 |
| LUMA | 1.3 | 1.1 | 0.4 | 0.6 | 0.6 | 0.3 | 1.1 | 0.4 | 1.0 | 0.1 | 0.6 | 0.8 |

## 3. LUMA Employee Headcount: PREB R&O August 18th, 2022, Appendix A, Human Resources section.

R&O data for Figure 12 is not available as table, but in graphic form only, as shown in the chart below. The metrics displayed for headcount (Budgeted and Actuals) are not reported on LUMA's Performance Metrics Quarter Report filing.

The workforce data reported by LUMA is showed on the table below and cannot be used to calculate budget headcount or actual headcount as these metrics are not the same. LUMA's Performance Metrics Quarter Report filing for the 12-month period of the August 18th, 2022, R&O contains Total Workforce and Open Positions for Exempt and Non-Exempt.

According to December 22nd, 2021, LUMA's Submission, Headcount was substituted by Total Workforce and Total Open Positions. In that submission, it was noted that was not available between Jun-21 and Aug-21 for Workforce, and for Open Positions between Jun-21 to Oct-21.

LUMA is unable to determine the data used to create the chart below, Figure 12, shown in the August 18th, 2022, R&O, Appendix A, Human Resources section.

Please note that LUMA's workforce is composed of both exempt and non-exempt workers. Exempt employees receive a salary, while non-exempt employees earn an hourly wage. The total workforce is the

# Metrics Needing Correction on August 18th, 2022, R&O

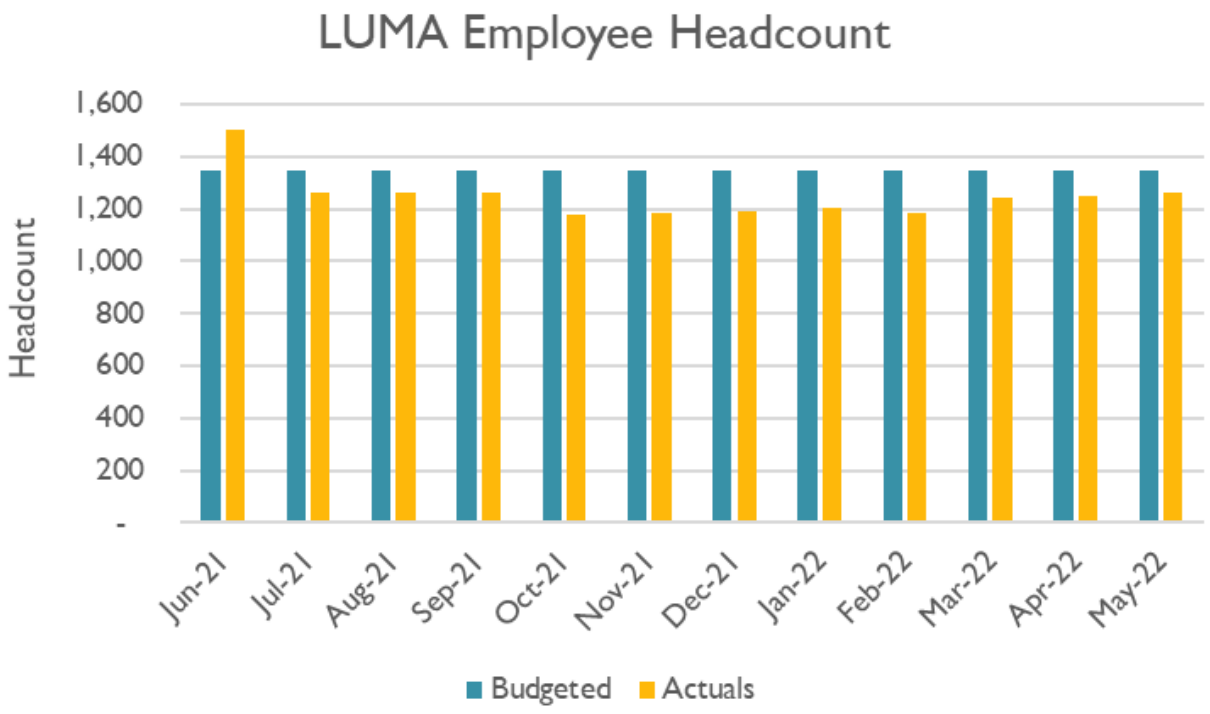


sum of Total Workforce – Exempt and Total Workforce – Non-exempt. Consequently, **LUMA's total workforce for May 2022 was 3,336 employees** (the sum of 1,207 and 2,156).

**Based on LUMA's Performance Metrics Quarter Report filing**

| LUMA | Sep-21 | Oct-21 | Nov-21 | Dec-21 | Jan-22 | Feb-22 | Mar-22 | Apr-22 | May-22 |
|---|---|---|---|---|---|---|---|---|---|
| Total Workforce - Exempt | 1,014 | 1,046 | 1,084 | 1,101 | 1,137 | 1,152 | 1,171 | 1,189 | 1,207 |
| Total Workforce - Non-Exempt | 2,128 | 2,219 | 2,277 | 2,295 | 2,292 | 2,209 | 2,179 | 2,162 | 2,156 |
| Open Positions - Exempt | | | 126 | 148 | 142 | 123 | 51 | 16 | 47 |
| Open Positions - Non-Exempt | | | 67 | 228 | 221 | 83 | 18 | 29 | 63 |

**PREB R&O August 18th, 2022, LUMA Employee Headcount, Appendix A, Human Resources section, Figure 12**



## 4. Percent of customer calls answered August 18th, 2022, R&O, Performance Metrics #85

The data from PREB differs from LUMA's reported data. No variances or restatements were made by LUMA during the 12-month period. The Percent of customer calls answered is 77.3% instead of the 71% (Highlighted) reported in the August 18th, 2022, R&O. The percentage of answered call is equal to the quotient of calls answered divided by total calls received, however this metric is not reported on LUMA's Performance Metrics Quarter Report filing. It can be obtained by dividing the Number of customer calls answered by the Total number of calls received for each month from June 2021 until May 2021, and then obtaining the average value, in this case the data filed on July 29th, 2022, submission was used.

| **Total** | **June 2021 – May 2022** |
|---|---|
| **LUMA** | 77.3% |
| **August 18th R&O** | 71.0% |

*Exhibit 3*

# LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics



## 1.1 LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics

In Attachment A of the August 18th Order, this Energy Bureau included an analysis of the system data that LUMA submitted in its Quarterly Performance Metrics Reports from June 2021 through May 2022. For several metrics, this Energy Bureau determined that LUMA's conclusions on LUMA's performance fell below the baseline or that LUMA was "non-performing." LUMA hereby outlines its disagreement with or objections to this Energy Bureau's conclusions for several of the metrics that it deemed "non-performing."

## 1.2 Total installed distributed generation capacity- Wind – Santa Isabel; Incremental installed distributed generation capacity per month – Photovoltaic – San Juan; and Incremental installed distributed generation capacity per month- Wind – Total, Metrics 442, 444, and 475

Regarding the following metrics: "Total installed distributed generation capacity- Wind – Santa Isabel;" "Incremental installed distributed generation capacity per month – Photovoltaic – San Juan;" and "Incremental installed distributed generation capacity per month- Wind – Total," LUMA respectfully submits that it is incorrect to characterize these metrics as reflective of LUMA's performance. LUMA does not purchase, install, operate, or otherwise influence the number of Distributed Generation systems that are installed. As Mr. Lee Wood explained in his testimony in Case No. NEPR-AP-2020-0025, LUMA has little or no control over the primary drivers of distributed photovoltaic capacity metrics. "The primary driver of total installed distributed photovoltaic (PV) capacity is the rate at which customers purchase and install these facilities. LUMA is only responsible for managing the interconnection of these facilities, not purchasing and installing them. The rate, quantity, and capacity of customer purchase and installation will essentially depend on external factors such as price, equipment availability, contractors' marketing efforts, their ability to execute the distribution generation projects they have sold, and the economics of the distributed generation market. LUMA does not control any of these factors, so this metric does not measure LUMA's performance and progress but that of PV service providers." See Motion Submitting Additional Rebuttal Testimonies, Testimony of Lee Wood, lines 108-115, Case No, NEPR-AP-2020-0025, filed on February 17, 2022.

Given the aforementioned, LUMA requests that this Energy Bureau amend Attachment A of the August 18th Order to remove its determination that LUMA did not comply with the baseline for these three metrics and strike the determination of "non-performing."

# LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics

## 1.3 Monthly system sales by customer class- Public Lighting and Monthly system sales by customer class – Others, Metrics 110 and 111

LUMA does not agree with the Energy Bureau's determination that the system data on "Monthly system sales by customer class- Public Lighting" and "Monthly system sales by customer "class – Others," is probative of LUMA's performance nor with the determination that performance below the baseline is negative. These metrics are policy driven to meet energy efficiency goals set forth in Acts 57-2014 and Act 17-2019. Public lighting is one of the areas where the deployment of measures to reduce consumption is currently more aggressive. After Hurricane María impacted the public lighting in service, PREPA and now LUMA, started an aggressive substitution of sodium and mercury lamps for LED, which lead to less consumption. Those reductions are shown in the metered services from the customer class.

## 1.4 Monthly Sales per Municipalities, Metrics 129, 134, 139, 140, 145, 159, 160, 175 and 187

As with the monthly sales by customer class Public Lighting and Monthly system sales by customer class – Others, these metrics are policy driven to meet energy efficiency goals set forth in Acts 57-2014 and Act 17-2019 and applicable regulations, including the Energy Efficiency Regulation which is specifically designed to ensure Puerto Rico reaches certain energy efficiency goals by 2040 "using an array of energy efficiency programs". See, Regulation for Energy Efficiency, Regulation No. 9367 of the Puerto Rico Energy Bureau.1 Specifically, as per section 2.02 of the Energy Efficiency Regulation, "PREPA is required to design programs and budgets with the goal of achieving first-year savings of at least 0.1%$ of annual sales…and at least .25% of annual sales in the second year." To that end, LUMA has been encouraging our customers to reduce their consumption by publishing energy conservation measures through Social Media (Facebook, Twitter, Instagram, LinkedIn, and YouTube) and on the LUMA web page and the new LUMA Model Bill. Also relevant are LUMA's efforts to integrate Distributed Generation systems which impacts consumption directly by enabling prosumers that use the energy that they produce and decrease their consumption. LUMA integrated more than 28 thousand customers into the net metering program and an additional 145 MW of capacity only in one year.

Given the aforementioned, LUMA respectfully submits that a reduction in sales cannot be attributable to LUMA for purposes of evaluating its performance on sales. Thus, LUMA respectfully disagrees with the conclusions of this Energy Bureau in the August 18th Order, Attachment B for the following performance metrics:

---

[1] The Energy Bureau published the final version of the Regulation for Energy Efficiency ("EE Regulation") on January 21, 2022. At the time, the regulation was assigned the number 9354 by the Puerto Rico State Department. Regulation number 9354 was subsequently annulled, and the EE Regulation was resubmitted to the State Department and approved by the Puerto Rico Department of State on March 25, 2022, being assigned number 9367.

- Monthly sales by Municipality – Carolina
- Monthly sales by Municipality – Cidra
- Monthly sales by Municipality – Dorado
- Monthly sales by Municipality – Fajardo
- Monthly sales by Municipality – Guaynabo
- Monthly sales by Municipality – Luquillo
- Monthly sales by Municipality – Manatí
- Monthly sales by Municipality – Sabana Grande
- Monthly sales by Municipality – Vega Baja

## 1.5 Monthly system peak – Total, Metric 192

Regarding this Energy Bureau's statement that LUMA's performance is considered "non-performing" for the "Monthly system peak-Total," performance metric, LUMA submits that this area should not be considered reflective of LUMA's performance for the purposes of a performance metric. This, because LUMA encourages customers to reduce the energy used, especially during the usual peak hours, but cannot control the consumption pattern of customers that influences monthly system peak.

## 1.6 Average revenue per kilowatt-hour sold, Metric 196

LUMA disagrees with the conclusion by this Energy Bureau that LUMA's performance should be considered "non-performing", with regards to the performance metric on "Average revenue per kilowatt-hour sold." This, because the main driver of the increase in the average revenues per kWh sold is the fuel costs which are not within LUMA's control. As this Energy Bureau's approval of quarterly reconciliations on fuel costs issued since August 2021 in Case "In re Tarifa Permanente de la Autoridad de Energía Eléctrica de Puerto Rico", NEPR-MI-2020-0001 show, rising global fuel prices have affected Puerto Rico which have led to increases in fuel prices that are recovered from customers through rates. Power plants in Puerto Rico are managed and operated by PREPA. LUMA does not own or operate generation facilities, nor does it purchase any fuel for generation. Furthermore, the Final Rate Order issued by this Energy Bureau and PREPA's tariff book require the calculation of three riders: Fuel Charge Adjustment (FCA), the Purchased Power Charge Adjustment (PPCA), and the Fuel Oil Subsidy (FOS), to assure the pass-through of fuel used in generation by PREPA and the power purchased from private generators, without any markup, profit or additional charges that would benefit PREPA.

Thus, LUMA respectfully requests that this Energy Bureau reconsider its determination that the metric on "Average revenue per kilowatt-hour sold," measures LUMA's performance and its concomitant determination that performance below the baseline is attributable to LUMA.

# LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics

## 1.7 Inventory Turns (annualized percent of value) - Warehouse T&D (Region and District), Metrics 350, 351, 352, and 353

LUMA does not agree with the determination that the metrics on "Inventory Turns (annualized percent of value) - Warehouse T&D (Region and District)," measure its performance. Inventory Turns is a measure of how often the company cycles through its inventory. A higher turns value translates to less inventory in warehouses and yards and typically represents a more just-in-time model. A lower turns value translates to more inventory in warehouses and yards and a more conservative model. LUMA's inventory turns will fluctuate depending on the needs of the business and are not a measure of performance. For instance, if the inventory includes slower moving material – such as major equipment, transmission towers and hardware and long lead materials that are critical to system repairs / replacements in substations, then the inventory turns will be lower. Additionally, more general inventory material such as poles, distribution transformers, and wire - materials that will be required to respond to a storm event – will also result in a lower Inventory Turns number.

It is respectfully submitted that inventory turns are and should be managed based on the needs of the business, timing of work, and foreseeable uncertainties and should not be considered a measure of LUMA's performance for the purposes of setting and tracking a performance metric.

## 1.8 Percent of automatically-generated NTL leads found to be occurrences of theft, Metric 315

LUMA respectfully requests that this Energy Bureau reconsider its determination that LUMA's performance is "non-performing" in connection with the performance metric on "Percent of automatically-generated NTL leads found to be occurrences of theft." As the record of this proceeding shows, as part of its June 20, 2022, Motion Submitting Quarterly Performance Metrics, LUMA requested a delay of the reporting of the metric on Percent of Automatically-Generated Non-Technical Losses found to be theft occurrences. The request for delay was made to allow for the training of the field operations team on technical investigations of energy irregularities. In the August 18th Order, this Energy Bureau approved LUMA's request to extend the deadline to report on the non-technical losses metric. At page 6 of its August 18th Order, the Energy Bureau ordered LUMA to file, on or before September 30, 2022, "a detailed timeline on when LUMA anticipates reporting the required metric and file bi-monthly progress from September 30, 2022, on the efforts to commence the reporting of this required metric." In compliance with the cited portion of the August 18th Order, on September 30, 2022, LUMA informed that it will commence reporting on the non-technical losses metric within the upcoming Quarterly Performance Metric Report due on October 20, 2022. Thus, LUMA did not report data for this metric during the period covered by the August 18th Order.

Given the aforementioned, LUMA respectfully requests that this Energy Bureau reconsider and amend that portion of Attachment of the August 18th Order regarding the "Percent of automatically-generated NTL leads found to be occurrences of theft," that concludes that LUMA did not meet the baseline for this metric. It is requested that the Energy Bureau delay consideration of LUMA's performance for this performance metric for a period when LUMA files relevant data as per the August 18th Order.

# LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics

## 1.9 Average capacity factor of RPS-eligible capacity, Windmar Cantera Martinó, San Fermín Solar Farm, Horizon Energy, and Average capacity factor of RPS-eligible capacity - Landfill Gas Technologies Fajardo (LFGT), Metrics 381, 382, 383, and 384

LUMA respectfully requests that this Energy Bureau reconsider its determination that Metrics 381, 382, 383 and 384, related to the "Average Capacity Factors" of photovoltaic projects are reflective of LUMA's performance and the conclusion that the data submitted for this metrics reflect a "non-performing" result. The capacity factor of a photovoltaic project is an indicator (expressed in %) that compares the actual energy output to the theoretical energy output this system could produce if operating at maximum capacity during a selected period of time. More specifically, the capacity factor is calculated by dividing the actual energy output (expressed in kWh) for the selected period by the theoretical energy output (also expressed in kWh) the project could generate if it were operating at maximum capacity during the whole selected period.

The energy output of photovoltaic projects depends mostly on availability of the solar resource which, by nature, is variable and cannot be controlled as it is highly dependent on the weather conditions. The three projects related to these metrics (Windmar Cantera Martinó, San Fermín Solar Farm and Horizon Energy) are operating under different Power Purchase and Operating Agreements (PPOA) between PREPA and the Independent Power Producers (IPPs) which have full responsibility for the operation, maintenance, and performance of their projects.

Similarly, the Fajardo Landfill Gas Technologies project, which generates energy using the biogas generated by the landfill, is operating under a Power Purchase and Operating Agreements (PPOA) between PREPA and the IPP. The IPP has full responsibility for the operation, maintenance, and performance of its project.

LUMA is administering the PPOAs for these projects as PREPA's agent and the corresponding capacity factors are calculated and reported by LUMA, but LUMA does not have control over the actual energy output generated by the IPPs. As such, LUMA does not have any control over the performance or non-performance of the associated capacity factors with the baseline.

## 1.10 Generation from RPS-eligible PPOA's (by unit) - San Fermín Solar Farm and Generation from RPS-eligible PPOA's (by unit) - Horizon Energy, Metrics 394 and 395

With regards to Metrics 394 and 395 related to GWh generation of the San Fermín Solar Farm and the Horizon Energy, LUMA also requests that this Energy Bureau reconsider its determination that the performance metrics is reflective of LUMA's performance and the conclusion that the data submitted for this metrics reflect a "non-performing" result. As explained above regarding metrics 381, 382, 383, and 384, LUMA does not have control over the actual energy output generated by these two IPPs and, as such, LUMA does not have any control over the performance or non-performance of the GWh output with the baseline.

# LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics

## 1.11 Fuel Expenditure vs Forecast - #6, Metric 357

The "Fuel Expenditure vs Forecast" performance metric is the variance between the actual expenditure (expressed in $) and the forecasted expenditure ($) of the PREPA Thermal Legacy plants for a given period. The actual expenditure is taken directly from data sent by PREPA to LUMA Regulatory, and the forecasted expenditure is generated by LUMA Regulatory using a software called PROMOD which was also previously used by PREPA. This forecast from PROMOD uses parameters provided by PREPA such as maintenance schedule, operational characteristics, and historical plant performance data in order to generate the forecast. Fuel price forecast provided by PREPA is also included in these PROMOD simulations. LUMA has no control over any of the previously mentioned parameters.

Given the aforementioned, LUMA respectfully requests that this Energy Bureau reconsider its determination that the "Fuel Expenditure vs Forecast" performance metric measures LUMA's performance and the determination that LUMA's performance is considered "non-performing."

## 1.12 Inventory control - #6, Metric 360

The Inventory Control Metric is calculated as follows:

$$\frac{Fuel\ Balance\ +\ Fuel\ Purchased\ -\ Fuel\ Consumed}{Fuel\ Balance\ +\ Fuel\ Purchased}$$

The 'Fuel Balance,' 'Fuel Purchased,' and 'Fuel Consumed' values are provided by PREPA. These values are the summation of the respective values for all the PREPA Legacy Plants. Because the values used in this metric are measured, logged and controlled by PREPA, with LUMA only calculating the metric, LUMA does not have any control over the outcome and performance of the Inventory Control metric. LUMA merely reports the data as it is provided. LUMA provides the forecasted generation for each plant based upon outage schedules and availability for these plants provided by PREPA. It is the responsibility of PREPA to convert these estimates into the estimated fuel requirements and to communicate this fuel forecast to its fuel suppliers.

Given the aforementioned, LUMA respectfully requests that this Energy Bureau reconsider its determination that the "Inventory Control #6" performance metric measures LUMA's performance and the determination that LUMA's performance is "non-performing."

## 1.13 MMBTU consumed vs. forecast - Diesel #2, MMBTU consumed vs. forecast - #6, and MMBTU consumed vs. forecast – NG, Metrics 364, 365, and 366

Metrics 364, 365 and 366 related to "MMBTU consumed vs. forecast" for Diesel #2, #6 and Natural Gas, also involve parameters that are not within LUMA's control. Thus, these performance areas should not be attributable to LUMA.

The MMBTU Consumed vs Forecast metric is the variance between the actual fuel consumption (Expressed in MMBTU) and the forecasted fuel consumption (Also expressed in MMBTU) of the PREPA Thermal Legacy plants for a given period. The actual fuel consumption is taken directly from data sent by

# LUMA's Disagreements with or Objections to the Energy Bureau's Determination on Non-Performance for Specified Performance Metrics

PREPA to LUMA Regulatory, and the forecasted fuel consumption is generated by LUMA Regulatory using a software called PROMOD which was also previously used by PREPA. This forecast from PROMOD uses parameters provided by PREPA such as maintenance schedule, operational characteristics, historical plant performance and fuel price forecast data provided by PREPA in order to generate the forecast. LUMA has no control over any of the previously mentioned parameters.

Given the aforementioned, LUMA respectfully requests that this Energy Bureau reconsider its determinations that the performance metrics 364, 365 and 366 related to "MMBTU consumed vs. forecast" for Diesel #2, #6 and Natural Gas, measure LUMA's performance and the determination that LUMA's performance for these is "non-performing."