

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

NEPR
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IN RE:

THE PERFORMANCE OF THE PUERTO
RICO ELECTRIC POWER
AUTHORITY

CASE NO.: NEPR-MI-2019-0007

SUBJECT: Submission of information and explanations
requested in order of January 12, 2023

**SUBMISSION OF INFORMATION AND EXPLANATIONS IN COMPLIANCE WITH ORDER OF
JANUARY 12, 2023**

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:

1. In the “Resolution and Order regarding underlying data for metrics filed by LUMA and PREPA” issued on January 12, 2023 (“January 12th Order”), this Puerto Rico Energy Bureau (“Energy Bureau”) included directives, requested information and updated explanations on corrective actions, that LUMA would be expected to perform and inform on by the time it submits with its quarterly report due on April, 2023.¹ See January 12th Order, pages 3 through 7.

¹ On January 20, 2023, LUMA submitted before this Energy Bureau, a Motion entitled *Submission of Performance Metrics Report for October through December 2022 and September 2022 Reliability Metrics and in Partial Compliance with order of January 12, 2023* (“January 20th Submission”). In said submission, LUMA complied with that portion of the January 12th Order that authorized LUMA to defer the submission of quarterly System Data on the reliability metrics (“Customer Average Interruption Data Index” (“CAIDI”), “System Average Interruption Index” (“SAIDI”) (Distribution, Transmission Substation and T&D) and “System Average Interruption Frequency Index” (“SAIFI”) (Distribution, Transmission Substation and T&D) for the month of September 2022, because of the occurrence of Hurricane Fiona on September 18, 2022 and the response to restore service. LUMA also complied with that portion of the January 12th Order on page 6, that directed LUMA to correct what the Energy Bureau considered an error in cells AP26 and AQ26, Generation Tab, of the spreadsheet entitled “10.20.2022 Resumen Métricas”. In compliance with said portion of the January 12th Order, LUMA clarified in the January 20th Submission, that the data

2. LUMA hereby submits as *Exhibit 1*, its responses to several of the directives issued by the Energy Bureau on its January 12th Order labeled A1-A8 and B5², regarding the following performance categories: (1) Percent of Bills Estimated vs. Read, *see id.*, page 3; (2) Cash recovered on theft, *see id.*; (3) Percent of customers on AMI, *see id.*; (4) Timely submission of Monthly Reports, *see id.*; (5) Total available vehicles in service, *see id.*, page 4; (6) System Average Interruption Duration Index, *see id.*; (7) System Average Interruption Frequency Index, *see id.*; (8) Customer Average Interruption Duration Index, *see id.*, page 5; and (9) Reliability Data, *see id.*, page 7. LUMA will comply with the orders related to LUMA Employee Headcount (A11), Percent of Customer Calls Answered (A12), total budgeted and actual head counts by employee type (B2), and operational expenses vs. budget and capital expenses vs. budget (B3), in the April 20th, 2023, Quarterly Report filing.

WHEREFORE, LUMA respectfully requests this Honorable Bureau **take notice of the** aforementioned; **and deem** that LUMA complied with those portions of the January 12th Order, pages 3 through 7, that required LUMA to provide information and explanations on several performance categories.

RESPECTFULLY SUBMITTED.

reported in the Generation Tab was the data that PREPA provided. In addition, LUMA complied with the order to report monthly values for July 2022 through September 2022 and to continue to report the 12 -month rolling average values in addition to the monthly values on OSHA DART Rate; OSHA Severity Rate; OSHA Fatality Rate; and OSHA Recordable Rate. Furthermore, LUMA complied with the order regarding the metrics on Average Speed to Answer and Wait Time in Customer Service Centers. LUMA reported these metrics as a rational number instead of using time format. Lastly, LUMA submitted as Exhibit 1 to this Motion, an update on the LUMA-Pattern team working to resolve the 20 MW of pending additional capacity at Pattern Santa Isabel and how the procurement proceeding has impacted this metric, as requested in the January 12th Order.

² The requirements are found in Section II A 1 through A8 and Section III B5 of the January 12th Order.

In San Juan, Puerto Rico, this 6th day of April 2023.

I hereby certify that I filed this motion using the electronic filing system of this Energy Bureau and that will send an electronic copy of this motion to counsel for PREPA, Joannely Marrero-Cruz, jmarrero@diazvaz.law; and the Independent Consumer Protection Office, hrivera@jrsp.pr.gov.



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Exhibit 1

LUMA

Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A1

SUBJECT

Percent of Bills Estimated vs. Read

REQUEST

- A) LUMA to provide an update to RFI-LUMA-MI-2021-0007-220818-PREB-1 to assess the impact of the efforts.**

RESPONSE

- A)** LUMA is continuing to improve overall billing on an actual read instead of an estimated meter read. Our initiatives described in our response on October 15, 2022, are continuing to move forward. The impact of our efforts has shown improvements in billing on actual meter reads going from over 13% in October to 10.8% in February 2023. There were significant impacts to our efforts in this area related to major events experienced since commencement as previously described. LUMA is working to balance long-term Advanced Grid Infrastructure plans and immediate billing improvement needs while staying within our current budget.

LUMA has been advancing the System Remediation Plan (“SRP”) Back Office and Billing Accuracy Program with focus on the optimization of Oracle CC&B. In FY23, LUMA brought in experts to evaluate the system issues that result in estimated meter reads and bills. The evaluation identified a coding error from 2019 that had not been previously identified and impacts the system estimation algorithm. This error is in the process of being fixed. LUMA is manually resolving the impacts of this system issue to support the reduction of estimated reads. The coding error will be resolved within the next few months. Once the error is fixed the system will require 12 months of data in the system with the coding fix for the system issue to be resolved.

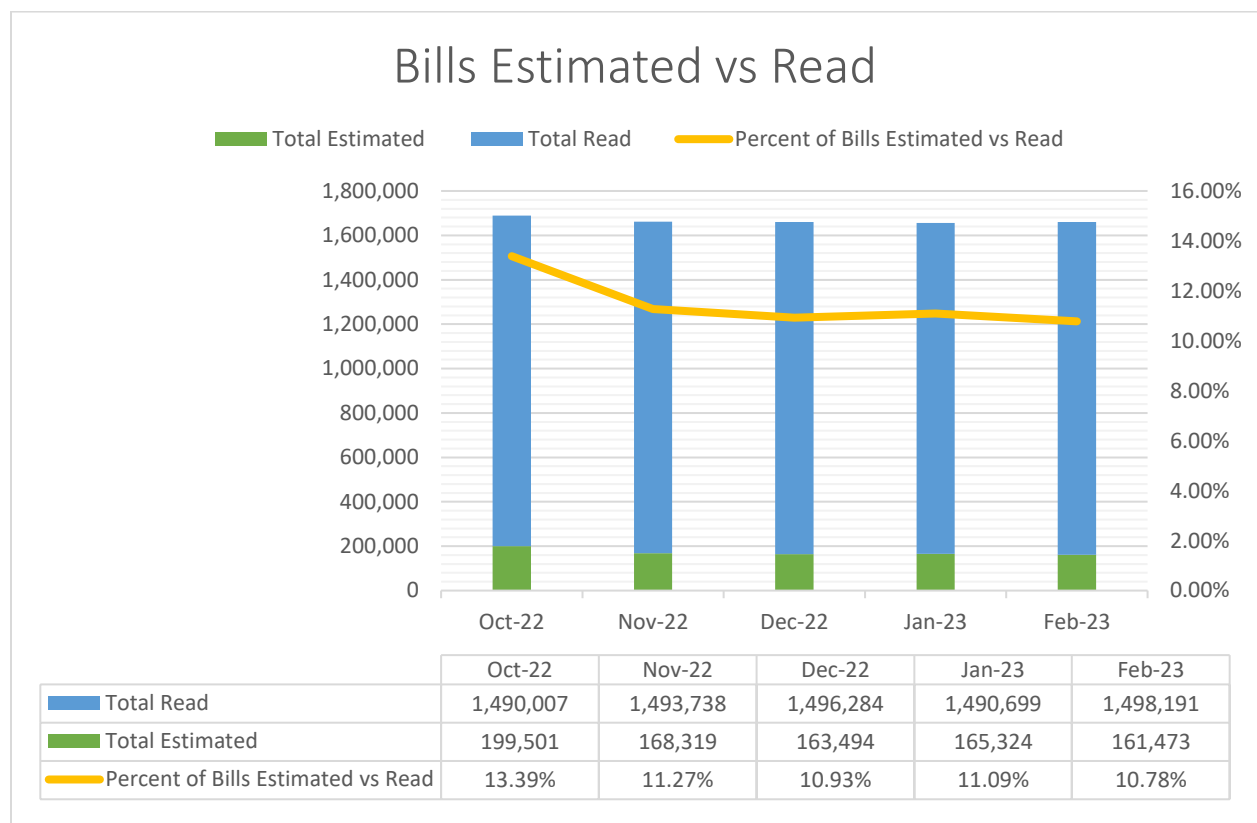
The CC&B optimization is also addressing system issues such as new user roles and functions for a centralized billing services team as well as resolving outstanding items with the billing system that exist since 2012 when Oracle CC&B replaced the prior billing system. Through this focused effort underway in FY23 to more than twenty initiatives have been identified and are in progress with remediation by end of FY24. These efforts are under the SRP Back Office and Billing Accuracy Program in the SRP.

LUMA has developed a Meter Read and Replacement Plan through an established cross-departmental team that collaborates on the overall manual meter reading effectiveness and replacement strategy, including the eventual Advanced Grid Infrastructure efforts.

At commencement, LUMA inherited some meters (Echelon) that are read through systems with meter reading done through modems on cellular networks. These networks were damaged, and many needed to be upgraded from 3G to 4G technology. This effort also requires replacing concentrators across the island to improve meter reading efficiency.

LUMA

Importantly, LUMA has experienced three major events that have had significant impact on meter reading and billing. Due to systems being unavailable for automated reads, each event has created a large volume of estimated reads and billing issues that LUMA has worked through. Since Hurricane Fiona, we have been able to manually return more than 30,000 customers whose automated reads were unavailable due to impacts from the storm to billing on actual meter reads. Therefore, LUMA has already made improvements on the percent of bills estimates vs. read since Hurricane Fiona and remains committed to additional improvements. The resolution of system errors completed within the next few months, the replacement of commercial and customer meters for the rest of FY23 and FY24, and the additional remediations to be completed by end of FY24 outline a timeline of what is likely to improve the percent of bills estimated vs. read over time.



LUMA

Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A2

SUBJECT

Cash recovered on theft

REQUEST

- A) LUMA to provide an update to RFI-LUMA-MI-2021-0007-220818-PREB-2 to assess the impact of the efforts.

RESPONSE

- A) LUMA has continued to extend staff training with field operations employees on energy irregularities detection and evidence handling. We have trained more than 175 employees in our field operations. Our focus is now to train extended teams such as non-field-based groups including engineering, key accounts, and more.

We have completed the procedural process that we had committed to complete by December 2022. LUMA plans to present this procedural review and strategy regarding energy irregularities to the Energy Bureau by the end of FY23. In the meantime, LUMA is focused on detecting irregularities, documenting evidence, and preparing the billed amounts for any theft detected. The work on addressing non-technical losses has been extensive.

The work in addressing non-technical losses has been extensive. At commencement, LUMA inherited a substantial amount of pending field activities, many of which were related to non-technical losses that needed to be resolved. This work has required an extensive effort to prioritize safety, reliability and customer needs as well as focus from team members across the organization to support the effort. LUMA has addressed inactive meters with consumption to ensure that customer bills are adjusted and corrected for usage consumed. We are documenting cases received from the field, investigations resulting from customer tips received through the hot line as well as through our contact center.

Additionally, LUMA's meter shop team is providing support for meter testing and evaluation. The meter shop is pursuing an enhancement to existing technology to provide data storage and capturing key testing details to refer electronically and avoid manual data transfers. The warehouse team is seeking specialized tools from various suppliers that were not available at commencement for supporting these investigations.

LUMA

Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A3

SUBJECT

Percent of customers on AMI

REQUEST

- A) LUMA to explain the Energy Bureau's assumption of a discrepancy between the non-zero numbers reported in the Quarterly Report and LUMA's statement that it does not have Advanced Metering Infrastructure ("AMI") in the RFI-LUMA-MI-2021-0007-220818-PREB-3 response.

RESPONSE

- A) The metering infrastructure in Puerto Rico that LUMA inherited from PREPA was previously described or listed as Advanced Metering Infrastructure (AMI). However, this was a pilot project that today is not an effective or scalable AMI system and has no advanced customer functionality. As LUMA develops the long-term AMI deployment in Puerto Rico it must replace the operating system and the meters included in that pilot project, which is why LUMA states it does not currently have AMI.

The meters associated with that PREPA pilot project are the ones that LUMA continues to report under the Percent of Customers on AMI metric. Therefore there is no discrepancy. LUMA has maintained the existing system and the number of meters on the inherited PREPA system. We will continue to maintain those meters and its system until they can be replaced by the AMI system-wide initiative.

LUMA

Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A4

SUBJECT

Timely submission of Monthly Reports

REQUEST

- A) LUMA to provide an update to RFI-LUMA-MI-2021-0007-220818-PREB-4 to assess the impact of the efforts.

RESPONSE

The Monthly Operating Report (MOR) is PREPA's responsibility. At this time, LUMA prepares the MOR for PREPA as part of the Finance services to PREPA under the Shared Services Agreement. LUMA will cease the preparation of this report by December 2023, the currently anticipated termination date of the Shared Services Agreement under its terms. LUMA does not have information on how PREPA plans to manage its responsibility to prepare the MOR in the future.

As a result of LUMA's improvements LUMA delivered the MOR within an average of 14 days for the second quarter FY2023 (October, November, and December 2022). In order to coordinate and communicate clearly, LUMA distributes to LUMA and PREPA's teams a month-end calendar that highlights key reports and approval deadlines and LUMA maintains a bi-weekly Finance Shared Service Coordination Meeting cadence. Additionally, a weekly meeting with LUMA's Accounting Team and PREPA's Comptroller has played an important part in assessing granular topics and risks to improve the timely submission of the MOR.

LUMA continues to progress in the documentation of the financial close processes and procedures in coordination with PREPA.

As stated above, the timely submission of monthly reporting has already improved from the average of 26 days during the first quarter of FY2023 (July, August, and September 2022).

LUMA

Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A5

SUBJECT

Total available vehicles in service

REQUEST

- A) LUMA to provide an update to RFI-LUMA-MI-2021-0007-220818-PREB-5 to assess the impact of the efforts.

RESPONSE

- A) LUMA increased vehicles to the total fleet count for the T&D System to increase from 936 vehicles in June 2021 to 2,209 in January 2023, an increase of 58% in Total Available Vehicles in Service. Specifically, in a commitment to increase the total available vehicles in service, LUMA incorporated 27 light, 16 medium, and 12 heavy-duty units into the fleet.

Additional efforts were made during the first two quarters of operation in FY2023 which represented a reduction in the number of unaccounted vehicles in the fleet from 667 to 533 or about 20% of reduction in unaccounted vehicles. LUMA continues to develop and implement procedures that will improve the current process for purchasing parts and work authorizations. This should enhance LUMA's to increase total available vehicles in service.

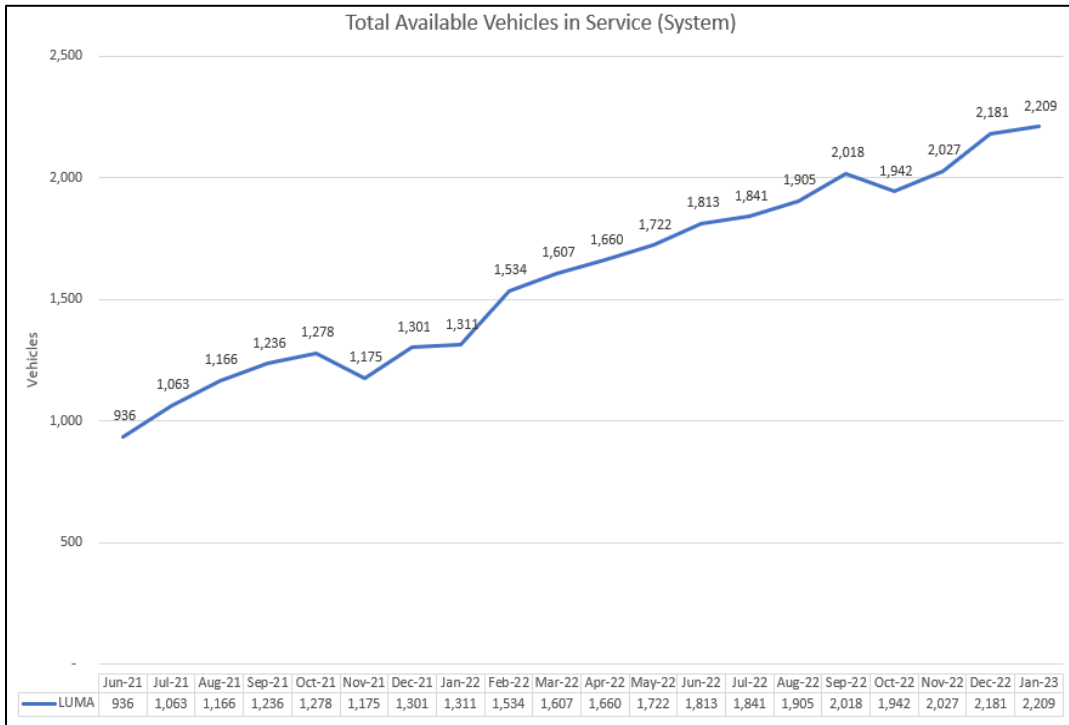
All of the LUMA Heavy Duty and Aerial Equipment Fleet being utilized for operation and maintenance of the T&D System is fully compliant with applicable US FMCSA (DOT), OSHA, ANSI and PR CSP/NTSP regulations. We are committed to having our employees operate safe equipment that also supports the safety of all drivers who share the roadways.

Although trainings are ongoing, we have completed the following trainings for mechanics, supervisors, and managers:

- a) AH125 Maintenance Training (Altec) – 840 total hours (24 hours each)
- b) A77-T Maintenance Training (Altec) – 560 total hours (16 hours each)
- c) DT35H/DT85H/DT80 Maintenance Training (Altec) – 744 total hours (24 hours each)
- d) HAZMAT – Hazardous Materials – 138 total hours (6 hours each)

The following chart shows the total available vehicles in service from June 2021 through January 2023.

LUMA



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Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A6

SUBJECT

SAIDI

REQUEST

- A) LUMA to provide an update to RFI-LUMA-MI-2021-0007-220818-PREB-6 to assess the impact of the efforts.

RESPONSE

- A) In the second year of operation, LUMA Energy has improved reliability significantly. Through Q1 and Q2 of FY23, the duration of outages, as measured by the System Average Interruption Duration Index (SAIDI), has declined by 28% compared to Q1 and Q2 of FY22. Additionally, for the same period of Q1 and Q2 of FY23, the SAIDI related to Substation and Transmission outages has declined by 34% compared to Q1 and Q2 of FY22.

This improvement in reliability throughout the year is due to extensive work across the system. Such work includes executing infrastructure improvement programs to address the underlying challenges and LUMA's corrective actions that are addressed in part within the System Remediation Plan (SRP). The SRP outlines the development of specific improvement programs to improve LUMA's delivery of safe, reliable, and resilient electric service. These SRP programs include, but are not limited to, Transmission and Distribution Pole & Conductor Repair; Distribution Automation; Substation Rebuilds, and Vegetation Management.

The following list describes the current status as of the end of Q2 of FY23 of the SRP programs and the specific actions or outcomes for those programs:

- a. 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. Regarding this program, in FY 23, LUMA has:
 - i. Completed over 700 high level assessments on distribution feeders
 - ii. Replaced over 4000 poles
 - iii. Deployed wildlife protection to key substations
 - iv. Completed 842 critical repair points, including 382 pole replacements associated with Hurricane Fiona damages.
- b. 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. LUMA has deployed and installed the following through the Distribution System:
 - i. Over 450 distribution automation devices and protective devices since commencement, of which over 350 were added during FY23
- c. Substation Maintenance: The substation maintenance covers required inspection and repair. The program also includes installations and the replacement of electromechanical and electronics relays. Regarding substation maintenance programs, in FY23, LUMA has:
 - i. Assessed more than 1330 substation equipment such as Breakers, Transformers, Relay Protection, Hot Spots, and Battery Banks

LUMA

- ii. Replaced and repaired over 90 substation devices including Breakers, Transformers, Relay Protection, and Battery Banks
- d. LUMA Vegetation Strategic Approach: In FY22, over 90% of the vegetation management budget was spent on unplanned work in response to outage events and requests from internal and external stakeholders. This work, while important, requires more resources per mile to complete and has less impact on reducing outages to customers than planned work. Planned work focuses on proactively clearing right-of-way before an outage occurs, resulting in fewer vegetation-caused outages. In FY23, LUMA started to shift from a reactive approach of clearing vegetation to completing more planned, preventive vegetation clearing. This preventive work involves the systematic reclamation of the right-of-way, thus reducing the frequency of tree-caused outages. The update on vegetation strategy is as follows:
 - i. LUMA has spent over 60% of the FY23 vegetation management budget on the completion of planned work as of February 2023. This will be a continuous transition as the frequency of unplanned outage events due to vegetation is expected to continue to decrease, further reducing the need to perform reactive work and allowing the vegetation management program to focus on a more proactive stance.
 - ii. LUMA is identifying and implementing opportunities for additional vegetation clearing activities to further accelerate the full remediation of transmission and distribution right-of-way.

In addition to the SRP, LUMA is also deploying other initiatives aimed at improving the overall system SAIDI such as improved asset monitoring and repair, and improved outage restoration response. The following describes the current status of these initiatives :

- a. Improved asset monitoring: LUMA is deploying incremental capabilities, such as: aerial inspections and thermography, on substations, distribution, and transmission lines to identify failing equipment. Proactive identification and replacement of the damaged equipment can lead to improved SAIDI performance. LUMA is also exploring the use of drones to perform visual, thermography and corona inspections on substations, distribution and 38kv lines where aerial or foot inspections could be enhanced.
- b. Improved outage restoration response: LUMA is shifting the way crews carry out work, leading to reduced outage durations without compromising public and employee safety.

LUMA continues extraordinary efforts to improve reliability, focusing on customer minutes interrupted and outage reduction. The following initiatives are in the process of being executed to make immediate improvements to outage response:

- a. Continuation of onboarding and deployment of experienced workers for reliability work and Outage Response
- b. Continuation of onboarding of local line contractors
- c. Continuation of onboarding and deployment of Contractors for Reconstruction Work
- d. Conduction of accelerated vegetation management of Top Critical Lines.
- e. Conduction of onboarding and deployment of contractor workers.

LUMA

Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A7

SUBJECT

SAIFI

REQUEST

- A) LUMA to provide an update to RFI-LUMA-MI-2021-0007-220818-PREB-8 to assess the impact of the efforts.

RESPONSE

- A) Since the beginning of operation of the T&D System, LUMA has improved reliability significantly, with the frequency of outages experienced by customers, as measured by System Average Interruption Frequency Index (SAIFI), declining by 30%. Through Q1 and Q2 of FY23, the frequency of outages (SAIFI) has declined by an additional 14% compared to Q1 and Q2 of FY22. Additionally, for the same period, Q1 and Q2 of FY23, SAIFI related to Substation and Transmission outages has declined by 27% compared to Q1 and Q2 in FY22.

LUMA is executing infrastructure improvement programs to address the underlying challenges. Some examples of these 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. These SRP programs include, but are not limited to, Transmission and Distribution Pole & Conductor Repair, Distribution Automation, and Vegetation Management. A detailed status of the SRP programs and the specific actions or outcomes for each of these programs is outlined in RFI-LUMA-MI-2021-0007-230112-PREB-A6. In this same response, updates on programs that are not outlined in the SRP are also included.

LUMA

Update to Response: RFI-LUMA-MI-2021-0007-230112-PREB-A8

SUBJECT

CAIDI

REQUEST

- A) LUMA to provide an update to RFI-LUMA-MI-2021-0007-220818-PREB-9 to assess the impact of the efforts.

RESPONSE

- A) LUMA does not have any CAIDI specific programs because CAIDI is directly related to the performance of SAIDI and SAIFI. LUMA's focus on improving SAIDI and SAIFI performance will therefore impact CAIDI positively. Based on growing industry concerns, CAIDI is very limited as a performance metric on its own.

LUMA Energy has already taken actions that have improved reliability significantly and reduced customer outage response time through Q2 of FY23. The Customer Average Interruption Duration Index (CAIDI) has declined by an additional 15% compared to FY22.

In addition to improvements that have been already made, as discussed in RFI-LUMA-MI-2021-0007-230112-PREB-A6, efforts such as requirements to follow safer workforce procedures and policy changes such as a greater focus on root-cause fixes have led to temporary increases in response time that will eventually result in further reliability improvements.

A detailed status of the SRP programs and the specific actions or outcomes for each of these programs is outlined in RFI-LUMA-MI-2021-0007-230112-PREB-A6.

LUMA also continues with other efforts to improve reliability metrics by focusing on customer minutes interruptions and outage reduction. These initiatives are also found in RFI-LUMA-MI-2021-0007-230112-PREB-A6.

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. The following actions have been taken:

- a. Inspected and certified all fleet in compliance with DTOP, CSP, US DOT, OSHA, and ANSI standards, along with the recommended inspection and maintenance requirements from the equipment manufacturers.
- b. Implemented FMIS to track maintenance records for all fleet vehicles and preventative maintenance programs.

LUMA

Response: RFI-LUMA-MI-2021-0007-230112-PREB-B5

SUBJECT

Reliability Data

REQUEST

- A) **PREB ORDERS LUMA and PREPA, in the April 2023 quarterly filing, to provide an explanation how the two entities are improving the availability of reliability data and how they may share information with the PREB more transparently.**

RESPONSE

- A) Firstly, the reliability data of the T&D System of Puerto Rico is provided solely by LUMA and not PREPA, so PREPA will not have information regarding improvements of system availability or transparency. In an effort for LUMA to improve data transparency, LUMA conducted a session with the Energy Bureau's representative, Commissioner Torres, to review LUMA's data validation and metric review process. This included reviewing all raw data, exclusion criteria, and how Python is used to automate the data analysis to determine System Metrics. As for availability improvements, LUMA has complied with the Energy Bureau's requests regarding additional information and has provided all available outage data when requested, such as the Motion in Compliance with Resolutions and Orders of October 7th and 20th 2022. *See Submission in Compliance with the October 7th and October 20th Orders, Case No. NEPR-MI-2019-0007.* In the Quarterly Report filed in Case No. NEPR-MI-2021-0007, LUMA provides SAIDI and SAIFI values for 26 regions for Distribution and in Transmission Substation.