

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

NEPR

Received:

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IN RE:

IN RE: REVIEW OF THE PUERTO RICO
ELECTRIC POWER AUTHORITY'S 10-
YEAR INFRASTRUCTURE PLAN-
DECEMBER 2020

CASE NO. NEPR-MI-2021-0002

**SUBJECT: Submission of Two Scopes of Work
and List of Updated Projects and Request for
Confidentiality and Supporting Memorandum of
Law**

**MOTION SUBMITTING TWO SCOPES OF WORK AND UPDATED LIST OF
PROJECTS AND REQUEST FOR CONFIDENTIALITY AND SUPPORTING
MEMORANDUM OF LAW**

TO THE PUERTO RICO ENERGY BUREAU:

COME NOW LUMA Energy, LLC¹, and LUMA Energy ServCo, LLC² (jointly referred to as “LUMA”), through the undersigned legal counsel and respectfully submits the following:

I. Submittal of Scopes of Work and Request for Confidentiality

1. On March 26, 2021, this Puerto Rico Energy Bureau (“Energy Bureau”) issued a Resolution and Order in the instant proceeding (the “March 26 Order”), ordering, in pertinent part, that the Puerto Rico Electric Power Authority (“PREPA”) submit to the Energy Bureau the specific projects to be funded with Federal Emergency Management Agency (“FEMA”) funds or any other federal funds at least thirty (30) calendar days prior to submitting these projects to the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency (“COR3”), FEMA or any other federal agency. *See* March 26 Order on pages 18-19. This Energy Bureau thereafter determined that this

¹ Register No. 439372.

² Register No. 439373.

directive applied to both PREPA and LUMA. *See* Resolution and Order of August 20, 2021 (“August 20 Order”) on page 3.

2. Consequently, LUMA has submitted to this Energy Bureau several Transmission and Distribution projects (“T&D Projects”) on July 8, 2021 (twenty-eight (28) Scopes of Work and an itemized list of T&D Projects), August 30, 2021 (twenty-nine (29) SOWs and an updated list of T&D Projects) and October 4, 2021 (thirty-eight (38) SOWs and an updated list of T&D Projects), February 2, 2022 (three (3) SOWs and an updated list of T&D Projects), May 20, 2022 (one (1) SOW and an updated list of T&D Projects), July 29, 2022 (four (4) SOWs and an updated list of T&D projects), August 10, 2022 (two (2) SOWs and an updated list of T&D projects), November 11, 2022 (sixty (60) SOWs and an updated list of T&D projects), November 16, 2022 (one (1) SOW and an updated list of T&D Projects), and January 30, 2023 (one (1) SOW and an updated list of T&D projects). The Energy Bureau has approved all the T&D Project SOWs submitted by LUMA as of today.

3. In accordance with the March 26 Order issued in this instant proceeding, LUMA hereby submits to the Energy Bureau one SOW for T&D Project for this Energy Bureau’s review and approval prior to submittal to COR3 and FEMA in thirty (30) days for the following projects: “Minor Protection, Automation, and Control (PAC) Replacement,” dated February 20, 2023. *See Exhibit 1.*

4. As part of this Energy Bureau’s proceedings in Case No. NEPR-MI-2021-0004, a Resolution and Order was issued on February 27, 2023, whereas the Energy Bureau ordered LUMA to file under this instant proceeding within 45 days, the FEMA Project Scope of Work for

full implementation of Advanced Metering Infrastructure throughout its service territory (“February 27 Order”).

5. In line with the February 27 Order entered in Case No. NEPR-MI-2021-0004, LUMA hereby submits to the Energy Bureau an initial SOW for this Energy Bureau’s review and approval prior to submittal to FEMA for the following project: “Advanced Metering Infrastructure (AMI),” dated March 16, 2023. *See Exhibit 1.*

6. LUMA also submits to this Energy Bureau an updated Project List, containing a current list of the total initial SOWs submitted to the Energy Bureau, a list of approved projects by the Energy Bureau with assigned FEMA Accelerated Awards Strategy (“FAASt”) numbers and a list of projects with approved FEMA funding obligations. *See Exhibit 2.*

7. Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as the “Stafford Act”), administered by FEMA, provides funding through grants to states, local, tribal, and territorial governments through its Public Assistance Program to help communities respond to and recover from major disasters. LUMA has presented and received approval from the Energy Bureau for 203 initial SOWs for projects under Section 428 as of this date. The Energy Bureau's approval of these SOWs allows LUMA to engage with COR3 and federal agencies to seek different federal funding sources. These include FEMA Hazard Mitigation funding under Section 406 of the Stafford Act. Section 406 provides FEMA with discretionary authority to fund mitigation measures and repair disaster-damaged facilities. The application for and determination of Section 406 funding is part of the preliminary design phase for projects approved by the Energy Bureau and assignment of FAASt numbers by FEMA to award Section 428 funding. At the time of submission of the initial SOWs to the Energy Bureau, it is unknown

whether and in what amounts funding through Section 406 will be available, if any. LUMA develops proposals for additional hazard mitigation measures consistent with the damages. The proposals are reviewed and approved by FEMA and COR3. LUMA's efforts to add mitigation measures under Section 406 are in compliance with the Energy Bureau directives and consistent with LUMA's commitment to pursue federal funding from all potential sources, maximize available funds, and efficiently execute proposed projects.

8. LUMA hereby requests that *Exhibit 1* be maintained confidential and is submitting a redacted version for public disclosure and an unredacted non-public version under seal of confidentiality. LUMA submits below its Memorandum of Law stating the legal basis for which the unredacted version of *Exhibit 1* should be filed under seal of confidentiality. As will be explained below, portions of the SOWs in *Exhibit 1* should be protected from public disclosure as these documents contain confidential information associated with Critical Energy Infrastructure Information ("CEII") as defined in federal regulations, 18 C.F.R. §388.113; 6 U.S.C. §§ 671-674, and per the Energy Bureau's Policy on Management of Confidential Information (the "SOWs with CEII"). See Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009 ("Policy on Management of Confidential Information"), issued on August 31, 2016, as amended by the Resolution dated September 20, 2016. In addition, the SOWs include personal identifying information of individuals who are LUMA staff or contractors protected under Puerto Rico's legal framework on privacy emanating from the Puerto Rico Constitution and should also be protected pursuant to the Energy Bureau's Policy on Management of Confidential Information.

II. Memorandum of Law in Support of Request for Confidentiality

A. Applicable Laws and Regulations to Submit Information Confidentially Before the Energy Bureau

9. The bedrock provision on the management of confidential information filed before this Energy Bureau is Section 6.15 of Act 57-2014, known as the “Puerto Rico Energy Transformation and Relief Act.”. It provides, in pertinent part, that: “[i]f any person who is required to submit information to the [Energy Bureau] believes that the information to be submitted has any confidentiality privilege, such person may request the [Energy Bureau] to treat such information as such [...]” 22 LPRA §1054n. If the Energy Bureau determines, after appropriate evaluation, that the information should be protected, “it shall grant such protection in a manner that least affects the public interest, transparency, and the rights of the parties involved in the administrative procedure in which the allegedly confidential document is submitted.” *Id.* §1054n(a).

10. Access to confidential information shall be provided “only to the lawyers and external consultants involved in the administrative process after the execution of a confidentiality agreement.” *Id.* §1054n(b). Finally, Act 57-2014 provides that this Energy Bureau “shall keep the documents submitted for its consideration out of public reach only in exceptional cases. In these cases, the information shall be duly safeguarded and delivered exclusively to the personnel of the [Energy Bureau] who needs to know such information under nondisclosure agreements. However, the [Energy Bureau] shall direct that a non-confidential copy be furnished for public review.” *Id.* §1054n(c).

11. Relatedly, in connection with the duties of electric power service companies, Section 1.10 (i) of Act 17-2019 provides that electric power service companies shall provide the

information requested by customers, except for confidential information in accordance with the Puerto Rico Rules of Evidence.

12. Moreover, the Energy Bureau's Policy on Management of Confidential Information details the procedures a party should follow to request that a document or portion thereof be afforded confidential treatment. In essence, the referenced Policy requires identifying confidential information and filing a memorandum of law explaining the legal basis and support for a request to file information confidentially. *See* CEPR-MI-2016-0009, Section A, as amended by the Resolution of September 20, 2016, CEPR-MI-2016-0009. The memorandum should also include a table that identifies the confidential information, a summary of the legal basis for the confidential designation, and why each claim or designation conforms to the applicable legal basis of confidentiality. *Id.* at ¶ 3. The party who seeks confidential treatment of information filed with the Energy Bureau must also file both a "redacted" or "public version" and an "unredacted" or "confidential" version of the document that contains confidential information. *Id.* at ¶ 6.

13. The Energy Bureau's Policy on Management of Confidential Information states the following with regard to access to validated Trade Secret Information and CEII:

1. Trade Secret Information

Any document designated by the [Energy Bureau] as Validated Confidential Information because it is a trade secret under Act 80-2011 may only be accessed by the Producing Party and the [Energy Bureau], unless otherwise set forth by the [Energy Bureau] or any competent court.

2. Critical Energy Infrastructure Information ("CEII")

The information designated by the [Energy Bureau] as Validated Confidential Information on the grounds of being CEII may be accessed by the parties' authorized representatives only after they have executed and delivered the Nondisclosure Agreement.

Those authorized representatives who have signed the Non-Disclosure Agreement may only review the documents validated as CEII at the [Energy Bureau] or the Producing Party's offices. During the review, the authorized representatives may not copy or disseminate the reviewed information and may bring no recording device to the viewing room.

Id. at § D (on Access to Validated Confidential Information).

14. Energy Bureau Regulation No. 8543, *Regulation on Adjudicative, Notice of Noncompliance, Rate Review, and Investigation Proceedings*, also includes a provision for filing confidential information in proceedings before this Energy Bureau. To wit, Section 1.15 provides that “a person has the duty to disclose information to the [Energy Bureau] considered to be privileged pursuant to the Rules of Evidence, said person shall identify the allegedly privileged information, request the [Energy Bureau] the protection of said information, and provide supportive arguments, in writing, for a claim of information of privileged nature. The [Energy Bureau] shall evaluate the petition and, if it understands [that] the material merits protection, proceed according to [...] Article 6.15 of Act No. 57-2015, as amended.” *See also* Energy Bureau Regulation No. 9137 on *Performance Incentive Mechanisms*, § 1.13 (addressing disclosure before the Energy Bureau of Confidential Information and directing compliance with Resolution CEPR-MI-2016-0009).

B. Request for Confidentiality

15. The SOWs with CEII included in *Exhibit 1* contains portions of CEII that, under relevant federal law and regulations, are protected from public disclosure. LUMA stresses that the SOWs with CEII warrants confidential treatment to protect critical infrastructure from threats that could undermine the system and negatively affect electric power services to the detriment of the

interests of the public, customers, and citizens of Puerto Rico. In several proceedings, this Energy Bureau has considered and granted requests by PREPA to submit CEII under seal of confidentiality.³ In at least two proceedings on Data Security,⁴ and Physical Security,⁵ this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

16. Additionally, this Energy Bureau has granted requests by LUMA to protect CEII in connection with LUMA's System Operation Principles. *See* Resolution and Order of May 3, 2021, table 2 on page 4, Case No. NEPR-MI-2021-0001 (granting protection to CEII included in *LUMA's Responses to Requests for Information*). Similarly, in the proceedings on LUMA's proposed Initial Budgets and System Remediation Plan, this Energy Bureau granted confidential designation to several portions of LUMA's Initial Budgets and Responses to Requests for Information. *See* Resolution and Order of April 22, 2021, on Initial Budgets, table 2 on pages 3-4, and Resolution and Order of April 22, 2021, on *Responses to Requests for Information*, table 2 on pages 8-10, Case No. NEPR-MI-2021-0004; Resolution and Order of April 23, 2021, on Confidential Designation of Portions of LUMA's System Remediation Plan, table 2 on page 5,

³ *See e.g., In re Review of LUMA's System Operation Principles*, NEPR-MI-2021-0001 (Resolution and Order of May 3, 2021); *In re Review of the Puerto Rico Power Authority's System Remediation Plan*, NEPR-MI-2020-0019 (order of April 23, 2021); *In re Review of LUMA's Initial Budgets*, NEPR-MI-2021-0004 (order of April 21, 2021); *In re Implementation of Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, NEPR MI 2020-0012 (Resolution of January 7, 2021, granting partial confidential designation of information submitted by PREPA as CEII); *In re Optimization Proceeding of Minigrid Transmission and Distribution Investments*, NEPR MI 2020-0016 (where PREPA filed documents under seal of confidentiality invoking, among others, that a filing included confidential information and CEII); *In re Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*, CEPR-AP-2018-0001 (Resolution and Order of July 3, 2019 granting confidential designated and request made by PREPA that included trade secrets and CEII) *but see* Resolution and Order of February 12, 2021 reversing in part, grant of confidential designation).

⁴ *In re Review of the Puerto Rico Electric Power Authority Data Security Plan*, NEPR-MI-2020-0017.

⁵ *In re Review of the Puerto Rico Electric Power Authority Physical Security Plan*, NEPR-MI-2020-0018.

and Resolution and Order of May 6, 2021, on Confidential Designation of Portions of LUMA's Responses to Requests for Information on System Remediation Plan, table 2 at pages 7-9, Case No. NEPR-MI-2020-0019.

17. As mentioned above, the Energy Bureau's Policy on Management of Confidential Information provides for the management of CEII. It directs that the parties' authorized representatives access information validated as CEII only after executing and delivering a Non-Disclosure Agreement.

18. Generally, CEII or critical infrastructure information is exempted from public disclosure because it involves assets and information which pose public security, economic, health, and safety risks. Federal Regulations on CEII, particularly 18 C.F.R. § 388.113, state that:

Critical energy infrastructure information means specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure that:

- (i) Relates details about the production, generation, transportation, transmission, or distribution of energy;
- (ii) Could be useful to a person in planning an attack on critical infrastructure;
- (iii) Is exempt from mandatory disclosure under the Freedom of Information Act, 5 U.S.C. 552; and
- (iv) Does not simply give the general location of the critical infrastructure.

Id.

19. Additionally, "[c]ritical electric infrastructure means a system or asset of the bulk-power system, whether physical or virtual, the incapacity or destruction of which would negatively affect national security, economic security, public health or safety, or any combination of such matters. *Id.* Finally, "[c]ritical infrastructure means existing and proposed systems and assets, whether physical or virtual, the incapacity or destruction of which would negatively affect security, economic security, public health or safety, or any combination of those matters." *Id.*

20. The Critical Infrastructure Information Act of 2002, 6 U.S.C. §§ 671-674 (2020), part of the Homeland Security Act of 2002, protects critical infrastructure information (“CII”).⁶ CII is defined as “information not customarily in the public domain and related to the security of critical infrastructure or protected systems [...]” 6 U.S.C. § 671 (3).⁷

⁶ Regarding the protection of voluntary disclosures of critical infrastructure information, 6 U.S.C. § 673 provides in pertinent part, that CII:

- (A) shall be exempt from disclosure under the Freedom of Information Act;
- (B) shall not be subject to any agency rules or judicial doctrine regarding ex parte communications with a decision-making official;
- (C) shall not, without the written consent of the person or entity submitting such information, be used directly by such agency, any other Federal, State, or local authority, or any third party, in any civil action arising under Federal or State law if such information is submitted in good faith;
- (D) shall not, without the written consent of the person or entity submitting such information, be used or disclosed by any officer or employee of the United States for purposes other than the purposes of this part, except—
 - (i) in furtherance of an investigation or the prosecution of a criminal act; or
 - (ii) when disclosure of the information would be--
 - (I) to either House of Congress, or the extent of matter within its jurisdiction, any committee or subcommittee thereof, any joint committee thereof or subcommittee of any such joint committee; or
 - (II) to the Comptroller General, or an authorized representative of the Comptroller General, in the course of the performance of the duties of the Government Accountability Office
- (E) shall not be provided to a State or local government or government agency; of information or records;
 - (i) be made available pursuant to any State or local law requiring disclosure of information or records;
 - (ii) otherwise be disclosed or distributed to any party by said State or local government or government agency without the written consent of the person or entity submitting such information; or
 - (iii) be used other than for the purpose of protecting critical Infrastructure or protected systems, or in furtherance of an investigation or the prosecution of a criminal act.
- (F) does not constitute a waiver of any applicable privilege or protection provided under law, such as trade secret protection.

⁷ CII includes the following types of information:

- (A) actual, potential, or threatened interference with, attack on, compromise of, or incapacitation of critical infrastructure or protected systems by either physical or computer-based attack or other similar conduct (including the misuse of or unauthorized access to all types of communications and data transmission systems) that violates Federal, State, or local law, harms interstate commerce of the United States, or threatens public health or safety;
- (B) the ability of any critical infrastructure or protected system to resist such interference, compromise, or incapacitation, including any planned or past assessment, projection, or estimate of

21. The SOWs with CEII in *Exhibit 1* qualify as CEII because each of these documents contains the express coordinates to power transmission and distribution facilities (18 C.F.R. § 388.113(iv)), and these specific coordinates could potentially be helpful to a person planning an attack on the energy facilities listed as part of the SOWs. The information identified as confidential in this paragraph is not common knowledge and is not made publicly available. Therefore, it is respectfully submitted that, on balance, the public interest in protecting CEII weighs in favor of protecting the relevant portions of the SOWs with CEII in *Exhibit 1* from disclosure, given the nature and scope of the details included in those portions of the Exhibit.

22. Based on the above, LUMA respectfully submits that the SOWs with CEII should be designated as CEII. This designation is a reasonable and necessary measure to protect the specific location and other engineering and design information of the energy facilities listed or discussed in the SOWs in *Exhibit 1*. Given the importance of ensuring the safe and efficient operation of the generation assets and the T&D System, LUMA respectfully submits that these materials constitute CEII that should be maintained confidentially to safeguard their integrity and protect them from external threats.

23. In addition, the SOWs in *Exhibit 1* contain the name, signature, and role of an individual who is a LUMA employee and a contractor, respectively, who reviewed the SOWs as part of LUMA's internal review and approval of each document.⁸ LUMA respectfully requests

the vulnerability of critical infrastructure or a protected system, including security testing, risk evaluation thereto, risk management planning, or risk audit; or
(C) any planned or past operational problem or solution regarding critical infrastructure or protected systems, including repair, recovery, construction, insurance, or continuity, to the extent it is related to such interference, compromise, or incapacitation.

⁸ This employee and contractor are different from the top tier employees who have in the past signed these documents and who may be publicly known.

that information on the names, signatures, and roles of these individuals be maintained confidentially in the context that these reveal details of their employment duties and that their protection is in the public interest and aligned with Puerto Rico's legal framework on privacy which protects from the disclosure of personal information. *See, e.g.*, Const. ELA, Art. II, Sections 8 and 10, which protect the right to control personal information and distinctive traits, which applies *ex proprio vigore* and against private parties. *See also e.g. Vigoreaux v. Quiznos*, 173 D.P.R. 254, 262 (2008); *Bonilla Medina v. P.N.P.*, 140 D.P.R. 294, 310-11 (1996), *Pueblo v. Torres Albertorio*, 115 D.P.R. 128, 133-34 (1984). *See also* Act 122-2019, Article 4(vi) (which provides, as an exception to the rule on public disclosure, information the disclosure of which could invade the privacy of third parties or affect their fundamental rights); and Article 3(c) of Act 122-2019 (stating that personnel files and similar information does not constitute public information subject to disclosure). It is respectfully submitted that the redaction of the aforementioned information does not affect the public's or the Energy Bureau's review of the SOWs nor interfere with processes before this Energy Bureau. Therefore, on balance, the public interest to protect privacy weighs in favor of protecting the relevant portions of the SOWs.

C. Identification of Confidential Information

24. In compliance with the Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009, below, find a table summarizing the hallmarks of this request for confidential treatment.

Document	Name	Pages in which Confidential Information is Found, if applicable	Summary of Legal Basis for Confidentiality Protection, if applicable	Date Filed
Exhibit 1	Minor Protection, Automation, and Control (PAC) Replacement	Page 1	Right to privacy (<i>see, e.g.</i> , Const. ELA, Art. II, Sections 8 and 10)	March 29, 2023
		Pages 4, 5, and 6	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 29, 2023
Exhibit 1	Advanced Metering Infrastructure (AMI)	Page 1	Right to privacy (<i>see, e.g.</i> , Const. ELA, Art. II, Sections 8 and 10)	March 29, 2023

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned; **approve** the SOWs for T&D Project submitted as *Exhibit 1* to this Motion; **deem** that LUMA complied with that portion of the February 27th Order in Case No. NEPR-MI-2021-0004 that required LUMA to file, within 45 days, the FEMA Project Scope of Work for full implementation of Advanced Metering Infrastructure throughout its service territory; **grant** the request for confidential treatment of *Exhibit 1* and **accept** the updated list of T&D projects submitted as *Exhibit 2* to this Motion.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, on this 29th of March, 2023

I hereby certify that I filed this Motion using the electronic filing system of this Energy Bureau and that I will send an electronic copy of this Motion to the attorney for PREPA, Joannely Marrero-Cruz, jmarrero@diazvaz.law.



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Exhibit 1



FEMA Project Initial Scope of Work

Minor Protection, Automation, and Control (PAC) Replacement

20 Feb 2023

Approvals

The signatures below formally approve the FEMA Project Detailed Scope of Work Template.

Grant Manager's Name	Signature	Date
		Mar 8, 2023
Program Brief Owner	Signature	Date
		Mar 7, 2023



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Overview

Project Name:	Minor PAC replacement and hazard mitigation
Region:	Island Wide Substations
Damage Number:	223189
Damaged Inventory/Asset Category:	Island Wide Substations
FEMA Project Number:	

Introduction

The purpose of this document is to present an Initial Scope of Work (ISOW) with Cost Estimates to be submitted to COR3 and FEMA for projects under DR-4339-PR Public Assistance. COR3 and FEMA will review the completed document to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities, including Section 406 hazard mitigation for a particular project.

LUMA Energy provides the Operations and Maintenance of the electric service to the entire island of Puerto Rico. Puerto Rico Electric Power Authority (PREPA) is the agency that owns the facilities, sites, and systems identified in this Scope of Work that is eligible as critical services facilities as defined in the PAAP (Section 428) and BBA 2018 guidance documents.

This document will be updated with information developed during the initial design and engineering phase through the construction phase.

Facilities

Facilities List

The Island Wide Substations consists of a series of facilities that operate at nominal voltages of 230kV, 115kV, and 38kV. The facility comprises the following: transmission and distribution lines, switches, circuit breakers, transformers, voltage regulators, distribution bus, control house and a security perimeter fence among others.

The affected substations have a Protection and Control System that protect the electrical components such as Transmission Lines, Transformers, Bus Bar, Breakers, etc. In order to increase these components resiliency and decrease their loss of function during future emergency events, is suggested to implement the following changes. The minor Protection, Automation, and Control (PAC) program is intended to cover Island-wide substations excluding those stations which are covered by FEMA major rebuild projects. The program focuses on four aspects.

- A. Protection associated with LUMA breaker replacement project.
- B. Phasor Measurement Unit (PMU) sites identified by Planning.
- C. PAC (Protection, Automation, Control) for emergency replacement.
- D. Remote End Line Protection replacement associated with FEMA Substation Rebuild projects.

A. Protection associated with circuit breaker replacement program.

In the breaker replacement program, a total of 166 circuit breakers are planned to be replaced due to damages caused by Hurricane Maria. With this program, redundant protection and automation will be implemented accordingly, as part of a new breaker installation. Protection and accessories will be installed in a protection outdoor cabinet if the existing control building does not have space.

A required number of redundant protection system per substation are listed below.

Substations	Locations	115KV Breakers [QTY]	38KV Breakers [QTY]
AMELIA SECT		-	1
ALTURAS DE MAYAGUEZ		1	-
AÑASCO TC		1	4
BAIROA 3008		-	1
BARCELONETA TC		1	7
BAYAMON PUEBLO SECT		-	3
BUENA VISTA SECT		-	1
CAGUAS TC		-	6
CAGUAX SECT		-	1



CANAS TC		-	5
CANOVANAS TC		2	-
CAONILLAS HP2		-	1
CAPUCHINOS SECT		-	2
CAYEY TC		1	1
CERAMICA 1619		-	1
COMBATE-CABO ROJO		-	1
CREA SECT		1	-
DAGUAO TC		4	2
DOS BOCAS		2	4
GARZAS HP1		-	5
GAUTIER BENITEZ SECT		-	3
GUANICA TC		2	-
GUARAGUAO SECT		-	4
HATO TEJAS SECT		-	1
HERMANAS DAVILA 1705		-	1
HUMACAO TC		5	-
ISABELA PUEBLO 7503		-	1
JUAN DOMINGO SECT		-	2
JUNCOS TC		-	2
LAS LOMAS SECT		-	3
LAS PIEDRAS SECT		-	2
MAGNOLIA 1708		-	1
MANATI SECT		-	1
MANATI TC		-	4
MAUNABO TC		1	1
MINILLAS 1114		-	1
MIRAMAR SECT		-	2



MONACILLO TC		-	3
MORA TC		1	1
ONCE AGOSTO SECT		-	3
PALMER TC		1	3
RAMBLA SECT		-	1
RIO BLANCO		-	2
RIO GRANDE 2301		-	1
SAN FERNANDO SECT		-	3
SAN GERARDO SECT		-	2
SAN GERMAN INDUSTRIAL		-	1
SAN SEBASTIAN TC		3	1
SEBORUCO		-	1
SIERRA LINDA 1704		-	1
T-BONE		-	2
TORO NEGRO HP1		1	5
TRES MONJITAS SECT		-	3
VEGA BAJA TC		3	-
VENEZUELA SECT		-	5
VILLA BETINA		1	-
VILLA PRADES		-	1
VILLAMAR-1		-	2
VILLAMIL		-	1
YABUCOA TC		5	-
YAUCO HP1		-	5
YAUCO HP2		-	7
ZONA LIBRE		-	1
TOTAL		36	130



A total of 166 protection outdoor cabinets are planned to be installed, associated with the breaker replacement program, and an approximate 332 Intelligent Electronic Device (IED's).

B. Protection associated with PMU replacement.

Planning has Identified all 230kV, 115kV and major 38kV lines and transformers to be available for PMU streaming, which basically affects all TC and generation sites and some 38kV substations. For each PMU site, a data concentrator will be installed, and all data measuring locations need to replace existing relays with new PMU capable relays. In major rebuilds and breaker replacement projects, PMU capable relays will be installed and only data concentrator needs to be added. This program covers the remaining PMU sites. Below is the list of major stations which need to replace all relays to meet PMU requirements.

KV	CAPE CODE	SUBSTATION NAME	Cabinet # PMU 230kV	Cabinet # PMU 115kV
115kV	IGR	ISLA GRANDE GIS		1
115kV	HAT	HATILLO TC		1
115kV	ACA	ACACIAS TC		2
115kV	BER	BERWIND TC		2
115kV	VIC	VICTORIA TC		2
115kV	AÑA	AÑASCO TC		2
115kV	BRR	BARRANQUITAS TC		2
115kV	CAY	CAYEY TC		2
115kV	COM	COMERIO TC		2
115kV	FAJ	FAJARDO TC		2
115kV	GUA	GUÁNICA TC		2
115kV	HTE	HATO TEJAS TC		2
115kV	JDI	JUANA DIAZ TC		2
115kV	MAU	MAUNABO TC		2
230kV	MOR	MORA TC	1	
115kV	PAL	PALMER TC		2
115kV	SGE	SAN GERMÁN TC		2
115kV	SSE	SAN SEBASTIÁN TC		2



115kV	SIT	SANTA ISABEL TC		2
115kV	TNE	TORO NEGRO HP 1		2
115kV	CAG	CAGUAS TC		3
115kV	CNV	CANÓVANAS TC		3
115kV	DOR	DORADO TC		3
115kV	MAP	MAYAGUEZ PLANTA		3
115kV	RBL	RÍO BLANCO HP		3
230kV	CAP	CAMBALACHE GP (PLANTA)	10	16
115kV	HUM	HUMACAO TC		4
115kV	MPE	MARTIN PEÑA GIS		4
115kV	2BO	DOS BOCAS HP		5
115kV	VIA	VIADUCTO TC		5
115kV	PSE	PALO SECO GIS		5
230kV	PON	PONCE TC	1	7
115kV	HRE	HATO REY TC		6
230kV	SLL	SABANA LLANA TC	4	7
115kV	SJU	SAN JUAN PLANTA GIS		8
		Sub Total	16	118
			Total	134

Total 134 protection cabinets are required for PMU addition for 230kV, 115kV, and major 38kV sites.



C. PAC wiring replacement for Emergency Conditions

Many LUMA substations have cable or wiring that are susceptible to present issues and loss of function in future emergency conditions. In many cases, due to its current design, cable retrofitting (rewiring or removing) through existing conduits is not feasible. New outdoor protection cabinets are required to bypass existing cable conduits. The quantity below is by protection cabinets or panels. Each panel contains redundant protection systems for transmission lines or transformers. Only transmission elements like lines and transformers are estimated, feeder relay replacement were not included.

KV	CAPE CODE	SUBSTATION NAME	Cabinet # PAC
115kV	DAG	DAGUAO TC	5
115kV	VBA	VEGA BAJA TC	4
230kV	CAM	CAMBALACHE TC	18
115kV	JOB	JOBOS TC	6
230kV	MAY	MAYAGUEZ TC	8
230kV	MAN	MANATI TC	12
230kV	YAB	YABUCOA TC	12
230kV	ABU	AGUAS BUENAS TC	14
230kV	CSU	COSTA SUR SP	34
115kV	AMES	AMELIA SECT	2
230kV	BTC	BAYAMON TC	22
		Total	137



D. Remote End Line Protection Replacement Work

Remote line end works are considered for 38kV line end differential protection. Is possible that additional line ends differential protection equipment may be required in other existing facilities to ensure protocols compatibility. Twenty remote line ends are estimated.

EMERGENCY REPLACEMENT	LOCATION	QTY
Island wide substations	--	20

In summary, total cabinets required for next 5 years are below.

Programs	Number of Cabinets
PMU	134
115kV breaker	36
38kv Breaker	130
PAC replacement	137
Total	437

Project Scope

Scope of Work Description

The proposed scope of work for the Island wide substations will consist of the removal and replacement of disaster related damaged components and systems, to restore the facility to the pre-disaster functions to increase the resilience and reliability of the electric system in the event of a mayor disaster with the applicable codes and standards as per FEMA Public Assistance Alternative Procedures (Section 428) in compliance with 44 CFR 206.226(d). The following list represent a brief description of the disaster related damages components to be replaced for this project:

- Replace legacy protection systems with new digital relays in outdoor cabinets or relay panels for all new circuit breakers under circuit breaker replacement program, as a measure to increase resiliency and prevent future outages.
- Replacement of non-compatible relays in compliance with future phasor measurement units (PMU) requirements under PMU program.
- Protection enhancements for emergency conditions to eliminate or lessen failure due to malfunction due to electrically operated switches or wiring.

The scope of this project is only for the activities presented in this list above. All other scope including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network and substation minor repairs may be provided as part of separate projects in the future.

In the event that a major substation rebuild occurs after the implementation of PAC minor replacement at the same substation, there will be no duplication in the request for reimbursement for the same



equipment (that is, FEMA will not be reimbursing for the same relay twice). The cost of the relays from subsequent Substation Rebuild project will be deducted from the total cost of the project.

All engineering and design development shall follow LUMA design criteria, specifications, and industry standards.

Type of Project Choose One (Restoration, Improved, or Alternate) If improved, provide the changes in facility size, capacity, dimension, or footprint. If alternate, give the rationale for the recommendation.
Restoration to Codes/Standards
This work will comply with FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020)

Note: If preliminary A&E work has not been completed, the type of work designation is considered initial and is based on currently available information. The type of work designation may be revised based on the preliminary A&E work results.

Preliminary Engineering

Is architectural and engineering funding required to help define the intended scope of work?

Yes

Codes and Standards

Which codes, specifications, and standards apply to the restoration, replacement, relocation, or alternate scope of work?

The following will be referenced when applying specific codes, specifications, and standards to the project design:

1. Consensus-based codes, per FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020).
2. Industry standards per FEMA Recovery Policy FP-104-009-5, Version 2, Implementing Section 20601 of the 2018 Bipartisan Budget Act through the Public Assistance Program.
3. FEMA Recovery Interim Policy FP-104-009-11 Version 2.1, Consensus-Based Codes, Specifications, and Standards for Public Assistance.
4. LUMA's latest Design Criteria Document (DCD), which aggregates the design considerations of the vast majority of the consensus-based codes, specifications, and standards listed in FEMA Recovery Interim Policy 104-009-11 Version 2.1 (December 20, 2019)



Codes, Specifications, and Standards

Yes
Applicable codes and standards will be identified and incorporated into the plans and specifications.

Industry Standards

Yes
Applicable industry standards will be identified and incorporated into the plans and specifications.

Estimate

The class 5 estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies. **Each protection cabinet cost estimate breakdown is below.**

Each protection cabinet cost:	Unit Price
Architectural & Engineering	\$ 25,000.00
Construction & Procurement	\$ 125,000.00
Total	\$ 150,000.00

The efforts will be implemented over 5 years. The break down budget over the program is listed as below. Material may be requisitioned in prior year due to long leadtime.

Estimated Budget for Architectural & Engineering Design:	\$11.75 M
Estimated Budget for Procurement & Construction:	\$58.75 M
Estimated Overall Budget for the Project:	\$70.5 M

406 Hazard Mitigation Proposal

406 Mitigation Opportunity Scope of Work

During the preliminary design phase, LUMA will identify settlement costs for repair in kind of damaged equipment, and develop 406 Hazard Mitigation costs for upgrades to include in individual site proposals consistent with the damaged equipment and loss of service by site to support cost effective BCA. LUMA considers the PMU portion of this project to be eligible for FEMA 406 reimbursement.



406 Mitigation Opportunity Cost Estimate

Architectural & Engineering to Design:	Unknown
Procurement:	Unknown
Construction:	Unknown
Project Total Estimated:	Unknown

Note: If available, detailed engineering cost estimates will be included as an attachment.

Environmental & Historic Preservation Requirements

EHP considerations will be identified and evaluated during the base design phase and submitted to FEMA for review. Requirements will be incorporated into the final design and construction documents to be approved by FEMA before construction activities.



FEMA Project Scope of Work

Project Name:
Advanced Metering Infrastructure (AMI)
Revision: 0
Date: 16MAR2023

APPROVALS

The signatures below formally approve the FEMA Project Scope of Work Template.

Grant Manager's Name	Signature	Date
		March 23, 2023
Department VP's Name	Signature	Date
		March 23, 2023



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Overview

Project Name:	Advanced Metering Infrastructure
Project Type:	Telecommunication System
Region:	Islandwide
Damage Number:	223318
Damaged Inventory/Asset Category:	Islandwide Telecommunication System
FEMA Project Number: (Formerly Project Worksheet)	<Provided by FEMA>

Introduction

The purpose of this document is to present and update a Project Scope of Work (SOW) with Cost Estimates to be submitted to Puerto Rico Central Office for Recovery, Reconstruction and Resiliency (COR3) and Federal Emergency Management Agency (FEMA) for projects under DR-223319-PR Telecommunication System. The completed document will be reviewed by COR3 and FEMA to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities including Section 406 hazard mitigation for a specific project.

LUMA Energy submits this initial SOW pursuant to the Transmission and Distribution Operations & Maintenance Agreement between Puerto Rico Electric Power Authority (PREPA), the Puerto Rico Public-Private Partnerships Authority (P3A) and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix F which collectively provides the necessary consent for LUMA Energy, as agent of PREPA, to undertake work in connection with any Federal Funding requests related to the Transmission and Distribution System submitted to FEMA.

As per PREB approval on resolution and order dated August 25, 2022. The purpose of this document is to present and update a Project SOW with Cost Estimates to COR3 and FEMA for the Advanced Grid Infrastructure Project under DR-223319-PR Telecommunication System. The completed document will be reviewed by COR3 and FEMA to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities including Section 406 hazard mitigation for a specific project.

LUMA Energy provides the Operations and Maintenance of the electric service to the entire island of Puerto Rico. PREPA is the agency that owns the facilities, sites, and systems identified in this Scope of Work that are eligible as critical services facilities as defined in the PAAP (Section 428) and BBA 2018 guidance documents.

This document will be updated with information developed during the initial design and engineering phase through the construction phase.



Facilities

Facilities List

Name	Number	GPS Start	GPS End
Islandwide smart kWh meters	2,299	TBD	TBD
Islandwide kWh meters	1,465,924	TBD	TBD

Facilities Description

Damages and method of repair:

PREPA identified the following damages resulting from Hurricane Maria:

- 36,394 regular metering units to be replaced.
- 209 concentrators (remote metering system) to be replaced.
- 2,299 smart metering units to be replaced.
- 1,429,530 island wide kWh meters to be replaced.

System Description

Advanced Grid Infrastructure (AGI) represents a foundational technology to enable enhanced resiliency and reliability. A key component is Advanced Metering Infrastructure (AMI), which is a two-way communication system to collect detailed metering information throughout a utility's service territory. AMI consists of smart meters, a digital communications network (DCN), a head-end system, and a meter data management system (MDMS). Smart grid technologies have proven to help utilities speed outage restoration following major storm events, reduce the total number of affected customers, improve overall service reliability to reduce customer losses from power disruptions, and support customers' responses during disruptive events.

With AMI, utilities can move from merely reading meters automatically to proactively manage and control key aspects of the grid. Using modern analytics and predictive science allows monitoring, automating, predicting, and controlling the grid, enabling self-healing capabilities. AMI and Distribution Automation (DA) convergence via the ability to monitor and control DA grid devices through the AMI communication networks.

Another consideration is the availability of low-cost, private cellular service for point-to-point, cellular-connected smart meters. Utilizing high-speed, IP-based private cellular networks present numerous opportunities for the grid operator to take advantage of new applications for smart, electric metering communication, which requires real-time, high-speed networks.

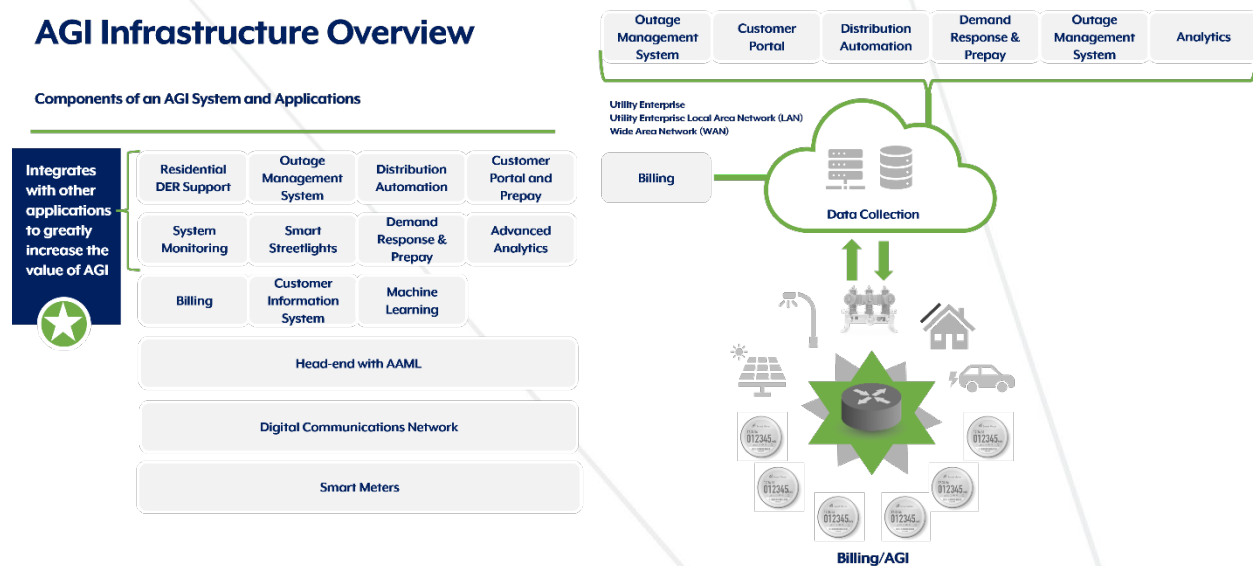
DCN would be deployed across the entire system with AMI as the core tenant and incorporating distribution assets (e.g., fault-current indicators, demand response units, remote terminal units, reclosers, microgrids, or other field devices).

The DCN will connect distribution assets to provide mission-critical data to the Energy Management System (EMS) and its Advanced Distribution Management System (ADMS) with intelligence previously unavailable in the grid. With limited field communications available today, having a clear, real-time understanding of the grid's state and outage locations is difficult. The ADMS' ability to detect and locate power outages is greatly enhanced by placing AMI smart meters at every customer location and providing communications to distribution assets along with the EMS outage management system (OMS). This will significantly improve

repair crews' time and reduce outage durations by reducing the demands on federally-funded resources to restore power to critical infrastructure.

Advanced Analytics with Machine Learning (AAML) will process this large volume of data and use machine learning algorithms to provide actionable tasks that can be either manually or automatically executed by the grid operator. AAML predictive algorithms will improve the detection of problem areas where mitigation efforts are required. Results derived from the meters' communication and sensor data described above will allow the grid operator to compute performance metrics such as SAIDI/SAIFI on a municipality or feeder basis more accurately. This analysis will allow the grid operator to evaluate mitigation options such as installing additional distribution assets, improving vegetation clearance, or performing other measures to address reliability issues.

Figure 1 Overview of an AGI System



System Benefits

The AMI system delivers enhanced value to the community, the grid operator, as well as entities seeking to deploy distributed energy resources (DER) in Puerto Rico that can improve resiliency further. For the community, AMI offers numerous advantages, including the following:

1. AMI communication significantly improves outage detection, restoration, and outage time reduction. Importantly, this can not only reduce outage duration but provide more accurate estimated outage time to affected customers.
2. AMI will enable improved system operation, metrics, and situational awareness (e.g., ensuring the distribution grid operates as it should) during abnormal situations or severe weather events.
3. AMI enhances customer safety by using smart meter data, such as alerts and voltage data, to detect safety issues relating to customer meters and power connections (e.g., hot sockets and fallen wires). In such cases, AMI alerts affected customers and the utility, who can quickly dispatch a crew as needed.
4. AMI facilitates integrating microgrids and DER. AMI data will provide a view of the capacity for challenged or underserved areas and provide optimal DER interconnection points, reduce energy demand related outages, and support possible islanding of energy during critical peak periods or weather-related events, enhancing resiliency.



5. DCNs, regardless of the technology, are reliable, redundant, battery-backed, self-configuring and healing, and allow for visibility to field devices after events or storms where the distribution grid has been affected. The networks will also support the ability to migrate to new standards as they become available allowing the utility to utilize microgrid networks to restore power utilizing alternative energy providers on the island.

Project Scope

Scope of Work Description (e.g., Plan for Repair)

The scope of the work consists of the planning, design, procurement, and implementation of a new AMI system infrastructure, including to replace the meters and communication system damaged by Hurricane Maria.

Base AMI field installation:

The scope of work for this project is derived from the Telecommunication and IT estimating package. A quantity of 36,394 standard kWh units were damaged due to Hurricane Maria. An additional quantity of 2,299 Smart kWh metering units and 209 concentrators were damaged as well. These devices will be replaced and brought up to the standards and functionality of modern metering and communications systems.

This project includes the deployment of approximately 1,429,530 smart kWh meters across Puerto Rico and the associated communications infrastructure to enable them.

The final SOW (plans and specifications) and cost estimated is expected to be completed by 9/15/2025 and construction is estimated to be completed by 9/15/2030.

Type of Project

1. **Restoration to codes/standards:** Restores the facility(s) to pre-disaster function and to approved codes/standards.
2. **Improved project** to restore the pre-disaster function of the facility(s) and incorporate improvements including any:
 - a. Other improvements, not required by codes and standards.
 - b. Changes in facility size, capacity, dimension, or footprint.
3. **Alternate project** does not restore the pre-disaster function of the damaged facility(s).



Choose One (Restoration, Improved or Alternate)

If improved, provide the changes in facility size, capacity, dimension, or footprint. If alternate, provide rationale for recommendations.

Restoration

Deployment of a new AMI system will provide functionality to support not only AMI communications but will also enable communications of Intelligent Electronic Devices (IEDs) like reclosers, capacitor banks, fault indicators, weather sensors, and streetlights as well as transport data to SCADA. Additionally, an AMI system with extended applications that will permit support of Puerto Rico's legislation and PREB orders related to renewable energy targets, penetrations of distributed generation, and other initiatives. The AMI system will help LUMA Energy to speed outage restoration following major storm events, reduce the total number of affected customers, and improve overall service reliability to reduce customer losses from power disruptions. Additionally, it would support more accurate estimated time of restoration (ETR) reporting, which will allow customers including hospitals, and other critical facilities, to make informed decisions during disruptive events, thereby producing a direct reduction of Emergency Protective Measures and deployed resources during both normal and federally declared events thus reducing the level of Federal funding and engagement to restore after such events.

The repair in-kind cost of obsoleting 2,299 smart meters and 36,394 standard meters captured in the settlement agreement is the base cost of replacing the damaged standard meters and 2,299 smart meters with AMI equipment where the cost difference for AMI equipment is the 406 hazard mitigation measure. In addition, the deployment of 406 hazard mitigation funded components will support FEMA-funded grid equipment (e.g., distribution automation), which will result in minimizing the number of customers exposed to an outage on circuits island wide. This will also provide data that can be integrated through the energy management system (EMS) which will improve emergency response and restoration, as well as providing more accurate ETR to support critical customers. The new equipment will additionally improve the system average interruption duration index, (SAIDI) system average interruption frequency index (SAIFI), and grid resiliency.

The AMI infrastructure system will have DCN that supports the AMI meters, IEDs, and other distribution data and grid sensors supplying actionable information for command and control for grid operations. AAML augments the head end to process large volumes of data and uses machine learning algorithms to provide actionable tasks that can be either manually or automatically executed by the grid operator.

Inclusion of a MDMS will process event information to support large volumes of historical data in line with regulatory compliance. This data along with AAML can also work to predict asset failures to reduce outages and their impacts and improvement deployment of FEMA-funded distribution infrastructure.

This work will be in compliance with FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020)

Note: If preliminary A&E work has not been completed, the type of work designation is considered initial and is based on currently available information. The type of work designation may be revised based on the results of the completed preliminary A&E work.



Preliminary Engineering

Is architectural and engineering funding required to help define the intended scope of work?

Yes

Codes and Standards

Which of the following types of codes, specifications, and standards apply to the restoration, replacement, relocation, or alternate scope of work?

The following will be referenced when applying specific codes, specifications, and standards to the project design:

1. Consensus-based codes, per FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020).
2. Industry standards per FEMA Recovery Policy FP-104-009-5, Version 2, Implementing Section 20601 of the 2018 Bipartisan Budget Act through the Public Assistance Program.
3. FEMA Recovery Interim Policy FP-104-009-11 Version 2.1, Consensus-Based Codes, Specifications, and Standards for Public Assistance.
4. LUMA's latest Design Criteria Document (DCD) which aggregates the design considerations of the vast majority of the consensus-based codes, specifications, and standards listed in FEMA Recovery Interim Policy 104-009-11 Version 2.1 (December 20, 2019).

Codes, Specifications, and Standards

Yes

Applicable codes and standards will be identified and incorporated into the plans and specifications.

Industry Standards

Yes

Applicable industry standards will be identified and incorporated into the plans and specifications.

Estimate

Cost estimates to complete the work have been generated at a class 5 level, which is between -50% and +100% of the final project cost. The estimate includes materials, construction labor and equipment, engineering, management, and contingencies.

Estimated Budget for Architectural & Engineering Design:	\$60M
Estimated Budget for Procurement:	\$600M
Estimated Budget for Construction:	\$120M
Estimated Overall Budget for the Project:	\$780M



406 Hazard Mitigation Proposal

406 Mitigation Opportunity Scope of Work

Referencing 44 CFR 206.202, “Facility means any publicly or privately owned building, works, system, or equipment, built or manufactured, or an improved and maintained natural feature”, and “Hazard Mitigation means any cost-effective measure which will reduce the potential for damage to a facility from a disaster event.” FEMA’s Public Assistance Program and Policy Guide v3.1 recognizes upgrades that “enhance a facility’s ability to resist similar damage in a future incident, may be eligible as hazard mitigation.”

The 406 hazard-mitigation funding stream would be utilized to:

1. Upgrade the damaged 36,394 standard kWh meters to smart meters.
2. Upgrade the damaged AMI equipment to allow communication with the new digital communication network.
3. Installing AMI smart meters to island wide power distribution area.
4. Deploy a digital communications network to support all required communication in a redundant and secure fashion.
5. Deploy a head-end system with AAML, and a meter data management system (MDMS) to process metering data, events/alarms, and grid sensory data. In addition, the head-end system will provide control functions to support system operations and ongoing maintenance.

Smart grid technologies like this help grid operators to accelerate outage restoration following events and natural hazards, reduce the total number of affected customers, and improve overall service reliability to reduce customer losses from power disruptions.

FEMA recognizes the importance of AMI as a mitigation solution for electrical utilities. Additionally, “... smart grid technology will provide enhanced visibility of storm-related outages (e.g., Advanced Metering Infrastructure, a key technology identified in Puerto Rico’s Grid Modernization Plan) but was not in place prior to the hurricanes would not be eligible for PA funding under the fixed-cost estimate, according to FEMA officials under the fixed-cost estimate. Rather, FEMA officials said that funding for these types of technologies could be covered by hazard mitigation funding under the PA program, and PREPA will need to apply for this funding for individual projects after the fixed-cost estimate has been finalized¹.”¹ GAO Report to Congressional Requesters November 2020, GAO-21-54 Puerto Rico Electricity Page 20.

Additionally, smart meter technology has a positive impact on climate resilience, which FEMA has determined to be a key strategy. For example, by better management of the grid to avoid the use of peaker plants to meet high demand, the environment benefits because peaker plants typically have higher greenhouse gas and other air emissions.

Utilities will have the ability to remotely control the meter service switches, which will allow the operators to respond more effectively to system emergencies, reducing workplace injury. Case studies have shown AMI critical to conserve energy with the ability to load shifting, allowing utilities to better manage a stressed network.

AMI improves the process of managing demand for natural resources. Utilities can offer customers near real-time price incentives to reduce consumption. This leveling of demand in turn allows for greater management of the supply.

¹ GAO Report to Congressional Requesters November 2020, GAO-21-54 Puerto Rico Electricity Page 20



This impact of more accurate management of peak loads can translate into substantial improvements to the high costs of electricity when electricity costs might be two to three times higher than normal.

Smart meters on the AMI are expected to reduce SAIDI through increased outage notification accuracy and SAIFI by supporting the communications infrastructure for distribution automation technologies like reclosers. This will provide the grid operator with the ability to detect, isolate, and respond to outages during storms quicker than current capabilities.

406 Mitigation Opportunity Cost Estimate

Estimated Budget for Architectural & Engineering to Design:	TBD
Estimated Budget for Procurement:	TBD
Estimated Budget for Construction:	TBD
Estimated Overall Budget for the Project:	TBD

Note: If available, detailed engineering cost estimates will be included as an attachment.

Environmental & Historic Preservation Requirements

Environmental and historical preservation considerations for the project will be identified and evaluated during the design phase and submitted to FEMA for review. Requirements will be incorporated into the final design to be approved by FEMA prior to implementation.

The AMI implementation does not involve the construction of any facilities and / or any land disturbances. Therefore, the EHP considerations are focused on the disposal of existing legacy equipment that will be replaced as part of the project. Disposal of equipment will be in accordance with standard LUMA Energy environmental practices and procedures - 0315 Waste Management, 0316 Waste Classification and Disposal and Luma Waste Management Plan for Projects.

Attachments

None.

Exhibit 2

Excel Spreadsheet with Updated List of Projects Submitted via email