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

IN RE:	**CASE NO. NEPR-MI-2021-0002**
IN RE: REVIEW OF THE PUERTO RICO ELECTRIC POWER AUTHORITY'S 10-YEAR INFRASTRUCTURE PLAN-DECEMBER 2020	**SUBJECT: Submission of Hazard Mitigation Grant Program Projects and Request for Confidentiality and Supporting Memorandum of Law**

MOTION SUBMITTING HAZARD MITIGATION GRANT PROGRAM PROJECTS AND REQUEST FOR CONFIDENTIALITY AND SUPPORTING MEMORANDUM OF LAW

TO THE PUERTO RICO ENERGY BUREAU:

COME NOW LUMA Energy, LLC[1], and **LUMA Energy ServCo, LLC**[2], (jointly referred to as "LUMA"), through the undersigned legal counsel and respectfully submit the following:

I. Introduction

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. Through its collaborative working relationship with COR3, LUMA has been developing plans in coordination with COR3 to identify projects that may be eligible for funding under FEMA's 404 Hazard Mitigation Grant Program ("HMGP"). The HMGP is a program under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as "Stafford Act") administered by FEMA that provides funding through grants to states, local, tribal and territorial governments "so that they can develop hazard mitigation plans and rebuild in a way that reduces, or mitigates, future disaster losses in their communities".[3] The grant funding is made available after a presidentially declared disaster.[4]

3. LUMA has identified and developed preliminary scopes of work for six (6) projects that it proposes to submit to FEMA, through COR3, for approval of funding under Section 404 of the HMGP. In accordance with the March 26 Order, LUMA hereby submits to the Energy Bureau copy of the preliminary scopes of work for these six (6) projects. *See Exhibit 1*.

II. Description and Discussion of Submittal

4. The mentioned six (6) projects (the "HMGP Projects") are the following: Microgrids in the Buenos Aires and El Torito communities ("Microgrid Projects") (described in the document titled "LUMA's FEMA 404 Hazard Mitigation Grant Program Project – Improving Resiliency with Microgrids for Underserved Communities" ("Microgrids Package"); mobile emergency resources as mobile microgrids ("Mobile Microgrids Project") (described in document

[3] https://www.fema.gov/grants/mitigation/hazard-mitigation.
[4] *Id.*

titled "LUMA's FEMA 404 Hazard Mitigation Grant Program Project- Mobile Microgrids for Improved Resilience" ("MERs Package")); advanced metering infrastructure ("AMI Project") (described in the document titled "LUMA's FEMA 404 Hazard Mitigation Grant Program Project-Advanced Metering Infrastructure for Improved Resilience and Storm Mitigation" ("AMI Project Package")); interconnected microgrids and submarine cable replacement in Vieques and Culebra (these projects, respectively, the "V&C Microgrid Project" and the "V&C Cable Projects") (described in the document titled "LUMA's FEMA 404 Hazard Mitigation Grant Program Project – Modernizing for Improved Resilience and Storm Mitigation in Vieques and Culebra" ("V&C Package")); and the addition of battery energy storage system ("BESS") at strategically selected locations throughout Puerto Rico ("Optimal Storage Placement Project") (described in document titled "LUMA's FEMA 404 Hazard Mitigation Grant Program Project – Optimal Storage Placement for Improved Resilience" ("BESS Project Package")) (each of the foregoing projects, a "HMGP Project" and collectively, the "HMGP Projects"). *See id*.

5. LUMA respectfully submits the HMGP Projects are consistent with the Integrated Resources Plan and Modified Action Plan approved by the Energy Bureau (the "Approved IRP and Modified Action Plan") by Final Resolution and Order issued on August 24, 2020, in Case No. CEPR-AP-2018-0001 (the "August 24th Resolution") or, in the case of one HMGP Project, has already been approved by this honorable Energy Bureau.

6. The Microgrids Project proposes the deployment of microgrids in the communities of El Torito, in Caguas and Buenos Aires in Arecibo, where the transmission and distribution system assets were damaged as a result of the 2017 hurricanes. *See* Microgrids Project Package, Section 1. As a result of a delayed response in the repair of these assets, many customers in these

communities essentially defected the grid and/or remained in an electricity underserved state. *See id*. LUMA proposes to establish microgrids in these communities which will serve as a pilot to be replicated in other communities as part of a resilience initiative to be implemented in other areas of Puerto Rico. *Id*.

7. The Mobile Microgrids Project is a proposed resiliency enhancement project that "will utilize Mobile Emergency Resources (MERs) as mobile microgrids with truck-mounted energy resources for critical service restoration in Puerto Rico" (MERs Package, Section 2.1) and "help improve the flexibility and resiliency of the grid" (*see id*., Section 1).

8. The V&C Microgrid Project proposes to deploy interconnected microgrids in Vieques and Culebra "in a phased approach and focused initially on developing robust hybrid microgrids by diesel retrofits to help deliver quick resiliency gains" (V&C Project Package, Section 2.1) and in subsequent years 2 and 3 "involve integration of renewables and energy storage to reduce the diesel footprint and enhance resilience through a layered microgrid concept that enables islanding of multiple electrical islands according to the state of the system following a major event" (*see id*.). This project supports the approach that "[d]eveloping hybrid microgrids that fold in legacy systems represent[s] an important opportunity to rebuild the communities' trust and illustrate how to leverage existing assets". *See id.* These projects will also serve as test cases allowing further analysis and data acquisition that will be fundamental to understand the integration of microgrids and a higher level of DER penetration and help LUMA to plan for further microgrid and DER deployment in Puerto Rico.

9. The Optimal Storage Placement Project is proposed to mitigate transmission system security deficiencies that resulted from the impacts of hurricane Maria and its aftermath by using

utility-scale energy storage in identified vulnerable and debilitated transmission and distribution assets that the transmission system can operate without significant violations (e.g., overloads, voltage limits) or subsequent shedding of important loads- that is, providing system security- thereby helping improve the transmission system's resiliency. *See* BESS Project Package, Sections 1 and 2.1.

10. The AMI Project proposes to install Advanced Metering Infrastructure ("AMI") throughout Puerto Rico with the purpose of improving reliability and resilience, as well as customer experience. AMI Package, Section 2.1. This is a fundamental component of necessary grid modernization and intelligent technology that can provide detailed information on the performance of the distribution grid at the customer's premise by monitoring key parameters as energy consumption, demand, service continuity and operational voltage, providing granular visibility over the system and supporting enhanced resiliency during stressed conditions, including storms. *See id*. AMI will also facilitate integration of renewable generation at the distribution level. *See id*.

11. The V&C Cable Project proposes to replace and reroute to a more suitable site the submarine cable between Punta Lima, Naguabo, and the island of Vieques, as this cable is beyond its useful life and the Punta Lima Submarine Transition Station ("STS") was destroyed in the 2017 hurricanes, as well as relocate the Punta Lima STS outside a flood zone to reduce the risk of flooding damages in a future storm event. *See* V&C Package, Section 3.1. In addition, this project proposes to replace and reroute to a more suitable site the submarine cable that connects Culebra to Vieques, as this cable is also beyond its useful life, and build a new STS in Culebra that will consider the proposed integrated microgrid system. *See id*.

12. LUMA respectfully submits that the above described microgrid and battery storage projects (Microgrids Project, V&C Microgrid Project, Mobile Microgrids Project and Optimal Storage Placement Project) are consistent with the Approved IRP and Modified Action Plan. In the Approved IRP and Modified Action Plan, the Energy Bureau found that "microgrids form a critical part of the resiliency solutions envisioned for the Commonwealth" and ordered PREPA to "directly incorporate promotion of microgrid resources into all of its transmission, distribution, and resource planning exercises and all deployment actions taken in compliance with the [M]odified Action Plan". *See* August 24th Resolution, Paragraph 78. The Energy Bureau further determined that "evidence demonstrates that microgrids form a critical part of the resiliency needs and that they should be incorporated into all of PREPA's transmission, distribution, and resource planning exercises and all deployment actions taken in compliance with the [M]odified Action Plan" (*id*., Paragraph 956) and that "rapid deployment of points of distributed resiliency, including the use of microgrid, single-site solar PV and battery resources, or aggregated VPPs must form a part of PREPA's near-term approaches to developing a more resilient grid" (*id*., Paragraph 84). *See also id*., Paragraphs 736 and 960. The Energy Bureau further found that "[s]imultaneously, compliance with the Modified Action Plan will include provision of distributed resiliency approaches in other regions through PREPA procurement opportunities, and/or coordination with prosumers for solar PV and battery storage combinations, and potentially other capacity sources such as small thermal units, in different forms, including microgrid solutions, aggregations of resources (such as VPPs) and single-site locations utilizing DG and battery storage as necessary". *Id*., Paragraph 750.

13. In addition, the V&C Cable Project is consistent with the initiatives to harden the transmission system under the Approved IRP and Modified Action Plan. In this document, the Energy Bureau determined that "the distribution system will need to be hardened to withstand the effects of weather events under various forms of resiliency provision" (id., Paragraph 759) and recognized "the need for transmission system upgrades" (*id*., Paragraph 87). The Energy Bureau also found that "part of the Modified Action Plan will be the establishment of a framework for resilient system operation at reasonable cost that includes the following elements: […] Preservation of the option to better optimize T&D system expenditures for resiliency, […including] expenditures for general hardening of the T&D system [as described in the IRP] (*see id*., Paragraphs 898 and 963) and that "evidence demonstrates the need for transmission system upgrades" (*see id*., Paragraph 963).

14. As for the AMI Project, AMI was a program in the Customer Experience portfolio included in the Initial Budgets submitted by LUMA in Case No. NEPR-MI-2021-0004, *In Re: Review of LUMA's Initial Budgets* (*see Petition for Approval of Initial Budgets and Related Terms of Service* filed by LUMA on February 24, 2021) (*See id*, Figure 1-5) which were conditionally approved by this Energy Bureau by Resolution and Order of May 31, 2021, in that case ("May 31st Order"), where the Energy Bureau determined that these were "appropriate to accomplish the goals of effective remediation and transformation of Puerto Rico's electric power system" (*see* May 31st Order at page 35). This program was also included in the Customer Experience portfolio of the Annual Budgets for Fiscal Years 2023 through 2025 (the "2023-2025 Annual Budgets") prepared by LUMA pursuant to the T&D OMA. *See Submission of Annual Budgets for Fiscal Years 2023 Through 2025* filed by LUMA on that date in Case No. NEPR-MI-2021-0004. The Fiscal Year

2023 Budget was approved by the Financial Oversight and Management Board for Puerto Rico ("FOMB") on June 30, 2022, which certified the budget submitted by LUMA to the Energy Bureau on July 13, 2022. *See Motion Submitting Fiscal Year 2023 Annual Budget As Approved and Certified by the Financial Oversight and Management Board for Puerto Rico* of that date in Case No. NEPR-MI-2021-0004.

15. Based on all of the foregoing, LUMA respectfully requests this Energy Bureau to approve the HMPG Projects for submittal to FEMA for funding under Section 404 of the HMPG.

III. Request for Confidentiality

16. 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, certain information 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. *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.

IV. Memorandum of Law in Support of Request for Confidentiality

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

17. 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).

18. Access to the 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).

19. 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 Rules of Evidence of Puerto Rico.

20. 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 "redacted" or "public version" and an "unredacted" or "confidential" version of the document that contains confidential information. *Id.* at ⁋ 6.

21. The Energy Bureau's Policy on Management of Confidential Information states the following with regards 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).

22. 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

23. The BESS Project Package included in *Exhibit 1* contains CEII that, under relevant federal law and regulations, is protected from public disclosure. LUMA stresses that portions of the BESS Project Package warrant 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.[5] In at least two proceedings on Data Security,[6] and Physical Security,[7] this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

24. 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, and Resolution and Order of May 6, 2021, on Confidential Designation of Portions of LUMA's

[5] *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).

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

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

Responses to Requests for Information on System Remediation Plan, table 2 at pages 7-9, Case No. NEPR-MI-2020-0019.

25. 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 shall access information validated as CEII only after executing and delivering a Non-Disclosure Agreement.

26. 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.

27. 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.*

28. 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").[8] 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).[9]

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[8] Regarding 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 to 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 any 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.

[9] 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

29. The BESS Project Package includes as Figure 2-1 the proposed energy storage and synchronous condenser locations and sizes. This figure includes a map of the transmission grid system network identifying major lines (by capacity) and transmission centers, as well as generation facilities, and their general configuration and interrelationship, and the proposed areas for the proposed BESS systems. The information in this figure could be used to identify potential vulnerabilities in generation and transmission and distribution ("T&D") system assets which, if misused, could have significant adverse effects on the T&D and generation facilities' operations. The information in this figure is not common knowledge and is not made publicly available, and LUMA takes reasonable measures to protect it from public disclosure. Therefore, it is respectfully submitted that, on balance, the public interest in protecting this CEII, weigh in favor of protecting the relevant portions of the BESS Project Package with CEII in Exhibit 1 from disclosure given the nature and scope of the details included in those portions of the Exhibit.

30. Based on the above, LUMA respectfully submits that the mentioned information in the BESS Project Package should be designated as CEII. This designation is a reasonable and necessary measure to protect the information on the location, configuration and interrelationship of T&D system and generation asset identified in the BESS Project Package of *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.

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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.

C. Identification of Confidential Information

31. 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	LUMA's FEMA 404 Hazard Mitigation Grant Program Project – Optimal Storage Placement for Improved Resilience (BESS Project Package)	6th page of the package (including cover page), Figure 2-1	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	November 1, 2022

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned; **approve** the HMPG Projects submitted as *Exhibit 1* to this Motion; and **grant** the request for confidential treatment of *Exhibit 1*.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 1st day of November 2022.

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 attorneys for PREPA, Joannely Marrero-Cruz, jmarrero@diazvaz.law and Katiuska Bolaños-Lugo, kbolanos@diazvaz.law.

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Exhibit 1

Redacted Version (Unredacted Version Submitted under Seal of Confidentiality)

LUMA's FEMA 404 Hazard Mitigation Grant Program Project

Improving Resiliency with Microgrids for Underserved Communities

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1. Introduction

FEMA's 404 Hazard Mitigation Grant Program ("HMGP") is a program under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as "Stafford Act") and provides states with the incentive and capability to implement mitigation measures that previously may have been infeasible. The HMGP is a state-administered, post-disaster program, whose main purpose is to ensure that the opportunity to take critical mitigation measures to protect life and property from future disasters is not lost during the recovery and reconstruction process following a disaster. Eligible applicants include state and local governments, certain nonprofit organizations, Native American tribes, and Alaskan Native Villages. In Puerto Rico COR3 manages the program.

Puerto Rico was severely impacted by two major hurricanes in 2017 that resulted in many of its transmission and distribution (T&D) assets being damaged. Unfortunately, some of these assets were only repaired long after the initial recovery occurred. As a consequence of this delayed response, many customers remained unserved for months or even years and essentially defected the grid and are now living in an electricity underserved state.

Ten communities were identified and studied. Among those, two communities, El Torito (Caguas) and Buenos Aires (Arecibo), currently have electricity service but with a very unreliable grid supply. To note, these communities have a small photovoltaic (PV) system and energy storage to help provide backup power to their water treatment plants. As such, LUMA investigated alternatives to recover from this scenario and is proposing microgrid solutions to help improve their areas' resilience and reliability.

LUMA worked with Sandia National Laboratories to conduct microgrid sizing studies for these ten communities in Puerto Rico experiencing similar conditions. LUMA's goal is for the successful completion of at least two microgrids under this FEMA initiative, which will serve as a pilot to be replicated in other communities and will kickstart a resilience initiative across Puerto Rico.

2. Microgrid Proposal

2.1 Improving Resilience

Microgrids are a proven means to increase reliability for communities, university campuses, military bases, and other types of infrastructure. Microgrids have been proven successful in applications that require critical power or in areas where traditional reliability measures are ineffective. In areas of very poor reliability, microgrid components should be planned and sized to allow for the potential condition of having to supply the system for extended periods of time.

The elements included in this proposal are:

1. **Local distribution system infrastructure:** These communities are currently supplied by a deteriorated system. This project includes refurbishing the existing distribution lines connecting all loads as well as the newly proposed PV farm and energy storage. Step-up transformers from the PV and energy storage systems, as well as step-down transformers to supply loads appropriately will be required.
2. **PV system**: Although these communities are in heavily forested areas, preliminary assessments suggest there is enough available land area to generate sufficient electricity for the residents.
3. **Energy storage system:** PV energy generated must be stored for use when the source is not present. Lithium-based batteries will be used for this purpose.

2.2 Estimated Project's Size and Budget

The following table shows the estimated project's budget.

Table 2-1 Estimated Project's Budget

Total (including contingency)	**20,625 ($ k)**

* Sizing subject to confirmation as project proceeds. Other communities may be selected in lieu of Buenos Aires and El Torito if additional studies reveal their needs are greater.

LUMA's FEMA 404 Hazard Mitigation Grant Program Project

Mobile Microgrids for Improved Resilience

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1. Introduction

FEMA's 404 Hazard Mitigation Grant Program ("HMGP") is a program under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as "Stafford Act") and provides states with the incentive and capability to implement mitigation measures that previously may have been infeasible. The HMGP is a state-administered, post-disaster program, whose main purpose is to ensure that the opportunity to take critical mitigation measures to protect life and property from future disasters is not lost during the recovery and reconstruction process following a disaster. Eligible applicants include state and local governments, certain nonprofit organizations, Native American tribes, and Alaskan Native Villages. In Puerto Rico, COR3 manages the program.

LUMA's overarching vision is to provide reliable electrical energy and transform the energy system of Puerto Rico by undertaking actions to improve its energy infrastructure. This proposed project will utilize Mobile Emergency Resources (MERs) as mobile microgrids with truck-mounted energy resources for critical service restoration to help improve the flexibility and resiliency of the grid.

2. Mobile Microgrids

2.1 Improving Resilience

This proposed resilience enhancement project will utilize Mobile Emergency Resources (MERs) as mobile microgrids with truck-mounted energy resources for critical service restoration in Puerto Rico. These resources will be primarily focused on energy storage to:

- **Tap unused resources at renewable sources** such as large PV plants, which would normally be disconnected in case of grid outages, to generate energy to be absorbed into the MER.
- **Connect to existing emergency generation facilities to store any surplus energy.** To note, emergency generators such as diesel units maximize their efficiency when running at rated output, although the load they serve is typically much lower than this rating. The built-in microgrid controller of the MERs will optimize this operation.
- **Allow the MER to be dispatched and energize critical facilities utilizing this energy.**

While battery energy storage is the primary resource in the MER, other applications may include generation as deemed appropriate for areas that require a more stable source of energy as well as the ability to enable and optimize a microgrid's operation.

A mobile microgrid can be routed and temporarily placed at a renewable generation plant or at a location containing emergency generators that can spare their power surplus when charging its energy storage. A mobile microgrid also can serve at critical substations as a means of enhancing the resilience of the electricity infrastructure for critical power locations.

This work will also include the procurement and installation of transmission and distribution tie points, which will be determined during the execution of this project.

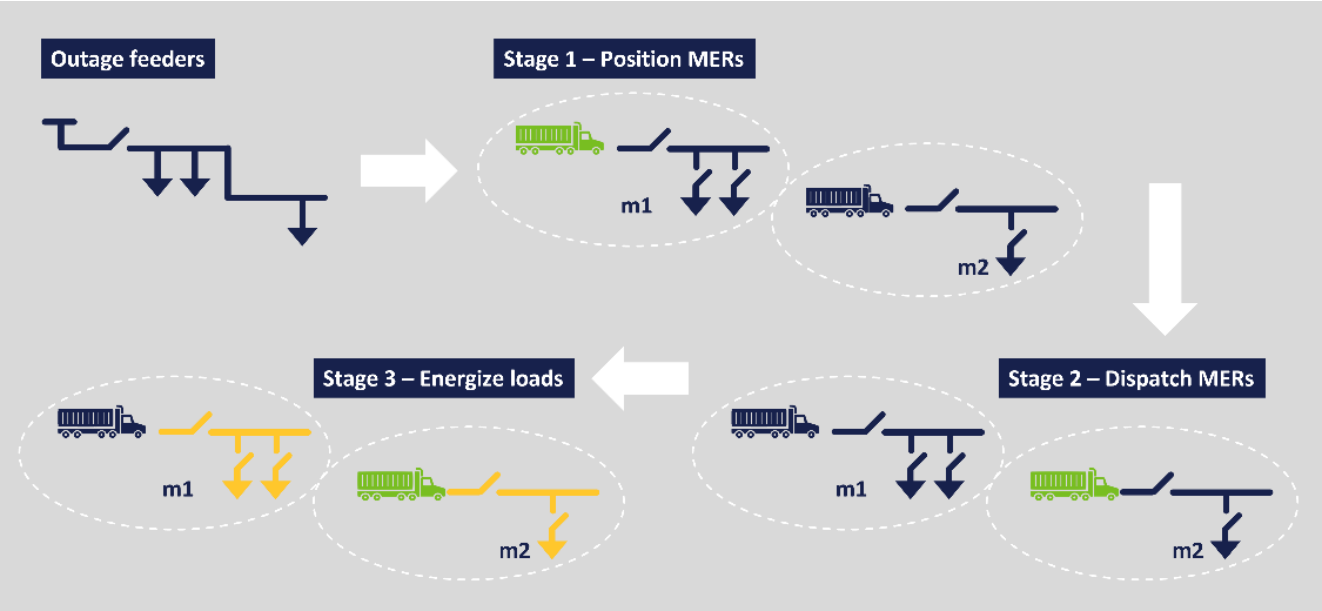
MERs in the proposed restoration approach form multiple microgrids that serve critical loads in extreme conditions. In addition, MERs for emergency-resource strategy consider the randomness of severe storms by optimizing the positioning of trucks to provide a significant resilience improvement.

The proposed MERs model, depicted in Figure 2-1, will include a software code and practical implementation for a comprehensive service restoration of critical loads in Puerto Rico. The project will include:

- Models and software implementation for MERs' positioning (Stage 1) and dispatch (Stage 2) for microgrid formation.
- Models and software implementation for implementing the load-switching sequence in Puerto Rico's electric system.
- Field implementation of the proposed technology using the positioning and dispatch of 20 MERs.
- User's manuals plus personnel training.

The proposed locations and sizes are presented in Figure 2-1.

Figure 2-1 Proposed Positioning, Dispatch, and Load-Switching Sequencing Using the MER Concept



2.2 Estimated Project's Budget

The following table shows the estimated project's budget.

Table 2-1 Estimated Project's Budget

Task and Equipment	Total ($ k)
Software development	500
Testing and validation of the positioning and dispatch strategies	150
50 tie-points (distribution voltage-transfer switches)	5,000
20 MERs	40,000
Field implementation and validation	350
Total	**46,000**

LUMA's FEMA 404 Hazard Mitigation Grant Program Project

Advanced Metering Infrastructure for Improved Resilience and Storm Mitigation

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1. Introduction

FEMA's 404 Hazard Mitigation Grant Program ("HMGP") is a program under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as "Stafford Act") and provides states with the incentive and capability to implement mitigation measures that previously may have been infeasible. The HMGP is a state-administered, post-disaster program, whose main purpose is to ensure that the opportunity to take critical mitigation measures to protect life and property from future disasters is not lost during the recovery and reconstruction process following a disaster. Eligible applicants include state and local governments, certain nonprofit organizations, Native American tribes, and Alaskan Native Villages. In Puerto Rico, COR3 manages the program.

Modernizing and repairing the grid with state-of-the-art technologies is crucial to mitigate impact from future storm and hurricane events and enable the sustainable transformation of the grid and reflects LUMA's overarching vision to provide reliable electrical energy and to transform the energy system of Puerto Rico. This proposed package contains the proposal for Advanced Metering Infrastructure (AMI).

2. Advanced Metering Infrastructure

2.1 Improving Resilience

The status of the aging and vulnerable grid infrastructure and lack of modern technologies that provide visibility over and monitoring of the system has exacerbated the damages and impacted the pace of repair and recovery efforts since the hurricanes of 2017.

Grid modernization and intelligence technologies such as Advanced Metering Infrastructure (AMI) and Energy Management System (EMS) are vital to enhancing the reliability and resilience of Puerto Rico's grid. This project proposes to install Advanced Metering Infrastructure (AMI) throughout Puerto Rico with the purpose of improving reliability and resilience, as well as customer experience.

An AMI system can provide detailed information on the performance of the distribution grid at the customer's premise by monitoring key parameters such as power and voltage. By providing granular visibility over the system at the customer level (i.e., voltage), an AMI system will support enhanced resilience during stressed conditions like a storm or hurricane.

AMI allows for faster outage detection, restoration, and notification through a wireless network and will provide a faster crew dispatch to an accurate area in the distribution grid, which helps improve the repair and recovery process.

Visibility and monitoring capabilities over the distribution grid via parameters that AMI provides will also facilitate integration of renewable generation at the distribution grid level. The monitoring information will allow LUMA to enact solutions to mitigate and eliminate potential harmful voltage profile impacts that could occur with a large penetration of renewables on a distribution circuit.

The benefits of AMI are summarized below:

- **Improves reliability:** Faster notification of service interruptions via last gasp messages (instead of customer trouble calls). Reliability is improved by providing detailed information on the performance of the distribution grid all the way to the customer's premise.
- **Improves resilience:** More accurate crew dispatch and faster remote restoration during outages by identifying precise location of the fault. AMI provides the state of the load at the customer's level, particularly voltage, allowing the grid operator to make smarter control decisions while maintaining the performance of the distribution grid.
- **Improves customer experience and data visibility:** Greater and more frequent consumption and bill information to allow the customer to have improved visibility to their usage and anticipated associated charges. Consumption information on a daily basis will provide a customer with the ability to further control their energy use. Greater number of payment options (i.e., pre-pay, bi-weekly, twice a month, etc.) are also available. Increased consumption information to help promote energy efficiency and measure energy-efficiency improvements. Customers with distributed generation (i.e., solar panels) will be able to monitor on a daily basis both the consumption and the amount of energy exported into the utility grid. Immediate automated power outage notification by the meter to the customer and to LUMA will help enable a faster LUMA response, especially when the customer is not home to report the outage. Knowing the voltage at the meter will also enable an automated method to control devices on the grid to provide an improved voltage level to the customer, especially with distributed generation on distribution circuits.

- **Improves LUMA's efficiency:** Reduces fraud by alerting LUMA that someone is tampering with the meter or removing the meter. Enables an improved method for identifying non-technical losses by providing granular energy consumption information that can be totalized at the transformer level for energy comparisons. Eliminates wasted LUMA field trips to repair outages that have already been energized, which is a common utility problem for systems without an AMI.
- **Enables energy resource optimization:** Provides an enabling platform to allow active prosumers on the grid. Prosumers could be offered time of use rates or other innovative rate structures that require greater energy consumption information (i.e., 15-minute energy consumption information).

2.2 Estimated Project's Budget

Table 2-1 shows the estimated project's budget. Costs estimates were gathered as part of budgeting for the System Remediation Plan during the Front-End Transition (FET) period. Estimates reflect a managed service offering where servers would be off-island. Associated operations and maintenance are estimated @ $19 Mil/year.

Table 2-1 Estimated Project's Budget

Task and Equipment	Total ($ k)
Meters	292,000
Network communications equipment	8,400
Installation of meters	99,000
Installation of network equipment	3,600
Software licenses	8,400
Integration and delivery services	152,000
AMI project management/support over five-year period	6,000
Total	**569,400**

LUMA's FEMA 404 Hazard Mitigation Grant Program Project

Modernizing for Improved Resilience and Storm Mitigation in Vieques and Culebra

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1. Introduction

FEMA's 404 Hazard Mitigation Grant Program ("HMGP") is a program under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as "Stafford Act") and provides states with the incentive and capability to implement mitigation measures that previously may have been infeasible. The HMGP is a state-administered, post-disaster program, whose main purpose is to ensure that the opportunity to take critical mitigation measures to protect life and property from future disasters is not lost during the recovery and reconstruction process following a disaster. Eligible applicants include state and local governments, certain nonprofit organizations, Native American tribes, and Alaskan Native Villages. In Puerto Rico, COR3 manages the program.

Puerto Rico, including the offshore islands of Vieques and Culebra, were severely impacted by hurricanes in 2017, with many of the transmission and distribution (T&D) assets damaged, some of which were only repaired long after the initial recovery.

Modernizing and repairing the grid with state-of-the-art technologies is crucial to mitigate impact from future storm and hurricane events and enable the sustainable transformation of the grid and reflects LUMA's overarching vision to provide reliable electrical energy and to transform the energy system of Puerto Rico. This proposed package consists of two projects:

- Vieques and Culebra interconnected microgrids
- Submarine cable replacement.

2. Vieques and Culebra

2.1 Interconnected Microgrids

Following Hurricanes Irma and Maria, several third-party developers installed behind-the-meter (BTM) batteries and solar panels as a means of quickly restoring power to critical loads on Vieques and Culebra. While this helped each individual facility in the short term, the resources were not integrated as part of a holistic, resilient design for the system.

In the emergencies' aftermath, the Vieques backup generators operated in the diesel plant were not able to sustain the island's load. Only one of the two units was operational at that time, and it ended up failing during the first few weeks it operated. In fact, emergency generators had to be brought onto the island and operated for approximately three months until the diesel plant generators could be repaired. This resulted in a recorded outage that exceeded 80 days for all inhabitants of the island of Vieques.

This project proposes to develop interconnected microgrids on Vieques and Culebra in a phased approach and focused initially on developing robust hybrid microgrids by diesel retrofits to help deliver quick resiliency gains. Years two and three will involve the integration of renewables and energy storage to reduce the diesel footprint and enhance resilience through a layered microgrid concept that enables islanding of multiple electrical islands according to the state of the system following a major event. Developing hybrid microgrids that fold in legacy systems represent an important opportunity to rebuild the communities' trust and illustrate how to leverage existing assets. The project will serve as a reproducible model for other communities in Puerto Rico and demonstrate how microgrids can be built out incrementally and maintained over time.

2.2 Estimated Project Budget

The estimated project budget is $96M for the Vieques and Culebra interconnected microgrids project.

3. Submarine Cable Rerouting and Replacement

3.1 Improving the Islands' Resiliency

In addition to the microgrid, this project also proposes to replace and reroute the submarine cable between Punta Lima in the main island and Vieques. The submarine cable is beyond its useful life. Punta Lima's 38 kV Submarine Transition Station (STS) structure was destroyed in the 2017 hurricanes. Due to the following issues with regards to the Punta Lima structure, a rerouting has been proposed due to:

- Difficulty of access.
- Significantly high repair costs due to the damages from Hurricane Maria.
- Environmental and Historic Preservation issues.

The new proposed area for the transition station in Vieques' Martineau Industrial Zone is outside of the flood zone, hence will reduce the risk of flooding damages in a future storm or hurricane event. In addition, the existing submarine cable that connects Culebra to Vieques will also be replaced and rerouted, and a new Culebra STS will be built. The existing submarine cable is also beyond its useful life. A reliable and resilient connection to the main island's grid is crucial to achieve resilience in Culebra and to achieve redundancy in its islanded electric system. A new submarine transition station in Culebra will consider the proposed integrated microgrid system.

3.2 Estimated Project's Budget

The estimated project's budget is $320M for the submarine cable rerouting and replacement project.

LUMA's FEMA 404 Hazard Mitigation Grant Program Project

Optimal Storage Placement for Improved Resilience

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FEMA's 404 Hazard Mitigation Grant Program ("HMGP") is a program under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as "Stafford Act") and provides states with the incentive and capability to implement mitigation measures that previously may have been infeasible. The HMGP is a state-administered, post-disaster program, whose main purpose is to ensure that the opportunity to take critical mitigation measures to protect life and property from future disasters is not lost during the recovery and reconstruction process following a disaster. Eligible applicants include state and local governments, certain nonprofit organizations, Native American tribes, and Alaskan Native Villages. In Puerto Rico, COR3 manages the program.

Puerto Rico was severely impacted by two major hurricanes in 2017 that resulted in many of its transmission and distribution (T&D) assets being damaged. Unfortunately, some of these assets were only repaired long after the initial recovery occurred. As a consequence of this delayed response, the energy system remained in a vulnerable, debilitated state and not prepared for all contingencies.

As such, LUMA investigated alternatives to constructing new transmission lines to help improve the grid's resiliency – one of which was adopting utility-scale energy storage. This package consists of a project proposal to add battery energy storage systems (BESS) to strategically selected locations throughout Puerto Rico to increase the transmission system's resiliency. This project supports LUMA's overarching vision is to provide reliable electrical energy and transform the energy system of Puerto Rico by undertaking actions to improve its energy infrastructure.

2. Optimal Storage Placement

2.1 Improving Resilience

Around the world utilities plan and construct their transmission systems so given any contingency (e.g., equipment out of service), the systems can still operate without significant system violations (e.g., overloads, voltage limits) and subsequent shedding of important loads. This is referred to as system security.

In the aftermath of hurricane Maria and the ensuing reconstruction, the Puerto Rico electric transmission grid does not meet this requirement. To mitigate this problem, LUMA conducted a comprehensive study focused on the application of energy storage as a non-wire alternative to increase resilience.

This study had four objectives:

1. **Increase the reliability of critical customers supplied by the 38 kV transmission system:** Evaluation of the 38 kV grid to identify the best locations for the integration of energy storage projects with the goal of increasing the reliability of the most vulnerable Commercial and Industrial (C&I) clusters island wide. The analysis considered existing information on transmission lines' reliability index, operational flexibility, redundancy, and expected energy not served due to lines' outages.
2. **Reduce transmission security violations in the 115 kV system**: Transmission grid vulnerabilities were ranked and classified according to their attractiveness to be addressed by energy storage. Energy storage was evaluated as a non-wire solution to mitigate the most impactful grid vulnerabilities, with optimal places of feasible solutions identified.
3. **Increase the resilience of transmission centers and distribution substations:** During a resilience event, the capacity of T&D substations might be degraded due to equipment damage. The study investigated the use of energy storage to improve a substation's operational capacity. Target sites were selected based on vulnerability, impact, criticality of loads, and restoration processes
4. **Enable orderly system islanding:** Under extreme resilience scenarios when the grid cannot be operated in an integrated fashion, the ability to orderly breakup the system into islands and to operate the islands reliably is crucial to the continued service of critical loads. The study reviewed the prior work on mini-grids within the 2018 IRP and identified optimal locations for the integration of energy storage to operate the various islands reliably. The analysis utilized grid topology to place storage facilities in close electrical proximity to critical loads and examined the energy balance within each mini-grid to determine the optimal storage size.

Furthermore, recommendations from the study conducted by LUMA revealed scenarios that require grid support to maintain voltage and frequency, especially during system disturbances. Furthermore, the growing development and adoption of renewable generation reduces short circuit levels and system inertia, requiring grid reinforcement to enable a sustainable, stable and reliable grid. An instrumental element to achieve these requirements is application of synchronous condensers. The need for a synchronous condenser was identified in this study, a technology that will be an enabler of further renewable procurement tranches which are planned for Puerto Rico.

The proposed locations and sizes are presented in Figure 2-1.

Figure 2-1 Proposed Energy Storage and Synchronous Condenser Locations and Sizes

2.2 Estimated Project's Budget

The following shows the estimated project's budget. Energy storage estimates were created assuming a cost of $500/kWh, which with the typical sizing of 0.25C (four hours), translates into $2,000/kW, plus 25% contingency. Synchronous condenser estimates were created assuming a cost of $450/kVAr for the machine, civil work, and auxiliary systems combined, plus 25% contingency.

Table 2-1 Estimated Project's Budget

Location and Size	Total ($ k)
Two 30 MW BESS in the San Juan/Bayamón area	150,000
One 500 MVAR synchronous condenser in the San Juan/ Bayamón area	112,500
One 20 MW BESS in the Mayaguez area	50,000
One 20 MW BESS in the Caguas area	50,000
Total	**362,500**