



PUERTO RICO ELECTRIC POWER AUTHORITY

PREPA 5-Year Infrastructure Projection

May 2022

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PLAN OVERVIEW

5-Year Infrastructure Projection includes approximately \$2,783.08 in investment that is needed for PREPA to rebuild Puerto Rico's Generation system, most of which qualifies for FEMA funding under its 428 programs.

To be clear, this estimate includes only the cost associated with FEMA 428 funds, FEMA 404 funds. It therefore excludes infrastructure hardening work that is eligible for funding through FEMA's 406 Public Assistance Mitigation (406) program.

PREPA will submit proposals for 406 funding with each of their applicable 428 proposals. This approach will ensure the integrity of the process given the differing requirements of each funding source.

FEMA's 406 program is designed to provide funding to rebuild infrastructure in excess of industry standards to prevent damage from future disaster events, which is also referred to as "hardening" of assets.

As described above, and in alignment with COR3 and FEMA's process, PREPA will submit proposals for 406 funding with each of their applicable 428 project submittals. These hardening proposals will add cost that is not currently included in this projection. However, the additional cost is expected to be offset by funding through FEMA's 406 program.

Total Estimated Cost by Asset Category and Funding Source

Asset Category	FEMA 428(\$M)	FEMA 404(\$M)	Estimated Total Cost ¹ (\$M)
Generation	\$358.18	\$878	\$1,236.18
Dams, Hydro, and Irrigation	\$888.9	\$658	\$1,546.9
Total	\$1,247.08	\$1,536	\$2,783.08

It is important to note that all cost estimates provided in this document are "class 5" estimates. A class 5 cost estimate is one that is prepared at an early stage in the project development process and is expected, based on industry standards, to range from 50% below to 100% above the actual final project cost. Leading industry practice is to revise estimates, so they become more accurate as engineering design progresses and project requirements are solidified.

In addition to the funding sources discussed above, PREPA will seek to leverage fund from Community Development Block Grant Disaster Recovery (CDBG-DR) for the 10%cost share allocation.

Forecast capital investment projections for each project are scoped to include all project activities from the point at which the project commences initial architectural and engineering work through the completion of project closeout activities.

Several projects within the 10-Year Infrastructure Plan extend throughout the entire 5-year period. Examples of such projects are, Guajataca Dam Repairs, and others.

EXECUTIVE SUMMARY

In September 2017, Puerto Rico's electric system was completely devastated by the landfall of Hurricanes Irma and María, resulting in the longest electrical blackout in modern U.S. history. Following the aftermath of the hurricanes, the Puerto Rico Electric Power Authority (PREPA) worked closely with the United States Army Corps of Engineers (USACE), utility partners, contractors, and the Federal Emergency Management Agency (FEMA) to restore electric service to all customers. Although electric service was reestablished successfully, the system was restored using temporary or partial repairs. This approach, while necessary due to the urgent nature of the work, did not remediate the permanent damages suffered during the storms, rendering Puerto Rico's electric grid very vulnerable to future catastrophic events.

In efforts to mitigate the economic, fiscal, and social impacts of future storms, FEMA announced its plans to award two of its largest grants ever, a total of \$13 billion, to both rebuild Puerto Rico's electric and water supply system and support recovery of the territory's education system.

As a part of this, a funding obligation of \$10.7 billion was earmarked for PREPA to repair and/or replace electrical systems including thousands of miles of transmission and distribution lines, electrical substations, power generation systems, office buildings, and make other grid improvements under FEMA's Public Assistance Alternative Procedures, pursuant to Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

This 5-Year Infrastructure Projection provides an overview of PREPA's infrastructure investment strategy for generation and water assets ; the context for the selection of projects included in the plan; a prioritized list of these proposed infrastructure projects; the expected benefits, projected costs, key project milestones, and the estimated time horizon for each project; and a brief overview of PREPA's approach to manage execution of this program and the portfolio of projects described herein.

Although this projection is only required by FEMA to address PREPA's plans for the 428-obligated funds, PREPA has taken the approach of developing a plan that includes all Generation and water assets projects planned regardless of funding source. This is being done to provide a holistic view of the work to be performed on PREPA's system and a view for how the 428 funds will support PREPA's overall infrastructure investment strategy and approach.

PRIORITIZED INFRASTRUCTURE PROJECTS:

Project Title	Assets	Section	Phase	Expected date of SOWs submissions to FEMA	Starting Dated	Termination Dated
FAASt New Black Start System at Costa Sur	Generation	428	A&E stage	Detailed SOW to be submitted by 8/1/2022	8/1/2022	6/1/2024
FAASt Mobile Generation Units Purchases	Generation	428	Completed	SOW has been submitted		12/1/2019
FAASt Cambalache Power Plant – Flood Protection Barrier	Generation	428	A&E stage	SOW has been submitted	1/1/2023	12/1/2023
FAASt Palo Seco Demin Water Tank 4	Generation	428	Completed	SOW has been submitted		12/31/2021
FAASt New Black Start System at Aguirre (Yabucoa)	Generation	428	A&E stage	Detailed SOW to be submitted by 8/1/2022	8/1/2022	6/1/2024
FAASt Aguirre Power Plant Infrastructure Projects 001	Generation	428	Pending FEMA Approval	SOW has been submitted	6/1/2022	4/1/2023
FAASt Fire Pump for Aguirre Power Complex (AG-004)	Generation	428	A&E stage	Detailed SOW to be submitted by 9/1/2022	1/1/2023	6/1/2023
FAASt Aguirre Power Plant 002 Units 1 & 2 Projects	Generation	428	Pending FEMA Approval	SOW has been submitted	3/1/2022	5/1/2023
FAASt Aguirre Power Plant 003 Combined Cycle	Generation	428	Pending FEMA Approval	SOW has been submitted	8/1/2022	6/1/2023
FAASt San Juan 001 – Units 5 & 6	Generation	428	Pending FEMA Approval	SOW has been submitted	2/1/2022	6/1/2022
FAASt San Juan Plant – Units 7 & 8 (SJ-002)	Generation	428	Pending submission from PREPA to FEMA PA	SOW to be submitted by 6/1/2022	1/1/2023	4/1/2023
FAASt San Juan Plant – Unit 10 (SJ-003)	Generation	428	Pending submission from PREPA to FEMA PA	SOW to be submitted by 6/1/2022	3/1/2023	9/1/2023
FAASt San Juan Power Plant - Auxiliary Infrastructure (SJ-004)	Generation	428	Pending FEMA Approval	SOW has been submitted	8/1/2022	11/1/2022
FAASt Costa Sur Permanent Repairs 5 & 6 (CS 001)	Generation	428	Pending FEMA Approval	SOW has been submitted	1/1/2023	10/1/2024
FAASt Costa Sur Permanent Repairs (CS-002)	Generation	428	Pending FEMA Approval	SOW has been submitted	7/1/2022	11/1/2022
FAASt Palos Seco Steam Plant Unit 3-4 (PS-001)	Generation	428	Pending FEMA Approval	SOW has been submitted	8/1/2022	1/1/2023
FAASt Palo Seco Steam Plant Permanent Repairs (PS-002)	Generation	428	Pending FEMA Approval	SOW has been submitted	8/1/2022	6/1/2024
FAASt Hydro Gas Permanent Repairs	Generation	428	Pending submission from PREPA to FEMA PA	SOW to be submitted by 6/1/2022	1/1/2023	12/1/2023
FAASt Cambalache Power Plant Permanent Repairs	Generation	428	Pending FEMA Approval	SOW has been submitted	3/1/2023	6/1/2024
FAASt Mayaguez Hydro-Gas Power Plant Permanent Repairs	Generation	428	Obligated by FEMA	SOW has been submitted	3/1/2022	7/1/2022
FAASt South Coast Irrigation District - Canals	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	12/1/2022	6/1/2023
FAASt Loco Reservoir Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Lajas Irrigation Canals	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	12/1/2022	6/1/2023
FAASt Guineo Reservoir – Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Guerrero Reservoir – Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Guayo Reservoir Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Dos Bocas Reservoir Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Caonillas Hydroelectric System 1	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	12/1/2022	6/1/2024
FAASt Toro Negro Hydroelectric System Connection	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	3/1/2022	12/1/2023
FAASt Matullas Reservoir–Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Lucchetti Reservoir – Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Isabela Irrigation District - Canals	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	6/1/2023
FAASt Guayabal Reservoir – Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Guajalaca Reservoir – Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Guajalaca Dam – Permanent Repairs	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	5/1/2022	6/1/2030
FAASt Garzas Reservoir – Dredging	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	12/1/2025
FAASt Dams Minor Repairs	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	6/1/2022	6/1/2023
FAASt - Rio Blanco Hydroelectric System	Dams,Hydro and Irrigation	428	A&E stage	Detailed SOW to be submitted by 1/1/2023	4/1/2022	3/1/2024

As discussed above, the projects were identified, prioritized, for the upcoming 5-Year.
the distribution of these projects by asset category and by time horizon.

All costs, funding sources, and subtotals are estimates subject to change.