



PUERTO RICO
PUBLIC HOUSING
ADMINISTRATION



Puerto Rico Public Housing Administration

JULY 13, 2023

ALEJANDRO SALGADO-COLON
ADMINISTRATOR



Overview

OVERVIEW

- Second Largest PHA in the nation
- Public Housing Program – 53,800 public housing units in 328 development
- Housing Choice Voucher Program – 12,875 vouchers (including VASH, Mainstream, EHV, Mod Rehab & SRO)



PRPHA Energy Affairs Program

PRPHA Energy Affairs Program

Energy Audit 2023 and Energy Affairs Program



New Energy Affairs Program

Development of initiatives to create resilient communities



Energy Audit 2023

Comprehensive energy and water assessment and analysis of all PRPHA properties



Main Objective

Develop & implement guidelines for energy consumption reduction



Reporting Layers

- Physical assessments of properties
- Energy Conservation & Efficiency Assessment
- ESCO Evaluation (Energy Savings Contract)
- Energy Audit Report (recommendations)



Objectives

- Energy educational plan for public housing communities
- Energy initiatives
- Maximize federal funding

PRPHA Energy Affairs Program

Existing Photovoltaic Systems Rehabilitation Projects



Puerta de Tierra II, San Juan

- Repair, Replacement, Installation, and Modernization of Existing PV System with battery bank and new PV System with Battery Backup and Net Metering Compliance.
- Specs: 237 kW-AC; 1,015 Modules; 3 Power Inverters
- Estimated Cost = \$680,000
- Duration: 9 months
- Benefit: project energy savings & community disaster resilience (85 families).



PRPHA Energy Affairs Program

Existing Photovoltaic Systems Rehabilitation Projects



El Coquí, Cataño

- Repair, Replacement, Installation, and Modernization of Existing PV System with Battery Backup and Net Metering Compliance
- Specs: 10 kW-AC; 40 Modules; 2 Power Inverters
- Estimated Cost = \$160,000
- Duration: 6 months
- Benefit: project energy savings & community disaster resilience (132 families).



Power Oasis Pilot Program

Overview

The PRPHA has developed the Power Oasis Pilot Program to achieve public housing community disaster resilience.

The Power Oasis Pilot Program aims to multi-family housing properties as a demonstration of the feasibility and benefits of maximizing solar power to achieve annual net-zero utility electricity consumption and combine it with battery storage to **provide resiliency** at our public housing community centers and common areas during a long power outage.



Federal and Local Government initiatives

The PRPHA initiative is in line with other Federal and Local Government initiatives such as:

- **Puerto Rico's Electrical Power Reliability and Resilience Program**
 - Provides assistance in the process of building a reliable and resilient energy system that will serve communities more efficiently.

- **Community Resilience Centers Program-Consolidated under the City Revitalization Program**
 - This program will create a known network of clearly identified and registered community resilience centers across the island to support communities during disasters with provision of critical functions and increasing social resilience.

- **New Energy Program**
 - Furthering the mitigation to future disasters, the Puerto Rico Department of Housing will be implementing the New Energy Program, designed to assist eligible households providing renewable energy installations, therefore mitigating the effects of Energy Lifeline failure or disruption.

Program Overview

Power Oasis Pilot Program



Main Benefits

Each power oasis will serve the community:

- ✓ Provide reliable electricity within each community center, using solar power + battery storage directly to the residents, staff, and emergency qualified personnel.
- ✓ Minimize electricity bills for PRPHA's community center with a local Net Metering Program.
- ✓ Improve the environmental outcomes by minimizing fossil emergency gen-sets use during extended power outages.
- ✓ Provide reliable power in **common areas**, interior and exterior building lighting during extended power outages.
- ✓ Address our resident's primary needs during extended outages by offering a dedicated area for medical care, food provisions, and an uninterrupted power supply for critical equipment.



Program Overview

Power Oasis Pilot Program



Main Objective

Weatherization and equipment installation in existing Community Centers for support during emergencies and community disaster resilience.



Typical design

- Power: 50 kW-AC + Battery Backup + Emergency Generator
- Water: Storage with pumps
- Cost = \$800,000 + \$200,000(weatherization)
- (Weatherization: replace to LED lighting, doors, windows, a/c, fridge, ice machine, faucets, and roof sealant)



Activities

To implement the Power Oasis Program PRPHA use Public Housing Capital Funds and other funding such as ESCO, DOE, EPA or IRA.

Engage professional services to assist in planning, engineering, installation, commissioning, administration, maintenance, warranties, and compliance with the local net metering program.



Program Overview

Power Oasis Pilot Program



Scope of Pilot Program

Four Phases Pilot Program:

- I. PV + BATT + GEN SET – Community Center (Common Area) (Budget 2024 - 2025)
- II. PV + BATT - Illumination for stairs & exterior (Budget 2025 - 2026)
- III. PV + BATT – One Electric Receptacle per unit (Budget 2026-28) (Fridge, lights, TV, or medical devices)
- IV. EVC – Electric Vehicle Charger (Budget 2024 – 2026) (Adm. Building - Fleet Services)



Primary Objective

Create an integrated community services center for all users during a long power outage



Secondary Objective

Create public housing microgrid guidelines



Program Overview

Power Oasis Pilot Program

POWER OASIS PILOT PROGRAM (2023-24) Phase I

Num.	Municipalpty	AMP	RQ	Project	Units	Budget (millions)
1	Yauco	005009035	005028	* Santa Catalina	200	\$ 1.20
2	Arecibo	005002006	005066	* La Meseta	300	\$ 1.80
3	Fajardo	005005019	003095	* Pedro Rosario Nieves	210	\$ 1.26
4	Mayaguez	005008013	004008	* Yagüez	200	\$ 1.20
5	Vieques	005005031	005131	** César "Coca" González	83	\$ 1.00
6	San Lorenzo	005004020	005092	La Lorenzana	100	\$ 0.60
7	Jayuya	005009006	009066	La Montaña	100	\$ 0.60
8	Ponce	005009017	001014	Aristides Chavier	480	\$ 2.88
9	San Juan	005010057	005294	Jardines de la Nueva Puerta de San Juan I	40	\$ 0.25
10	Utuaado	005009033	003023	Fernando Luis García	200	\$ 1.20
	* Original Modernized Pilot Project			Total Units:	1913	\$ 11.99
	** Without Modernizing	(3 person per unit)		Total Population:	5,739	

Program Overview

Solar Security Lighting Project



Background

Extended blackout periods after the impact of Hurricane Maria caused safety and security concerns among residents



Pilot Project

- Impact 10 public housing projects
- Installation of solar-powered lamps at the main entrance of each residential structure.



Main Objective

Provide an alternate solution to illuminate exterior areas



Program Overview

One Electric Receptacle per Unit Program



Background

Extended blackout periods after the impact of Hurricane María creates life-or-death situations for those with medical needs. In the aftermath of Hurricanes, generators were needed to provide our communities with medical assistance, food, and other essential needs.



Pilot Project

- Impact 10 public housing projects
- Installation of one electric receptacle in each unit energized by the Photovoltaic System.



Main Objective

To provide one electric receptacle per unit to connect refrigerators and medical devices.



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Thank You
