

GUAYNABO'S RURAL SOLAR ENERGY RESILIENCE PROJECT (GRSERP)

Cooperativa de Ahorro y Crédito Jesús Obrero
Guaynabo, PR

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Jesús Obrero Cooperativa: an overview

- Jesús Obrero Cooperativa (JOC) is a **CDFI** designated (Community Development Financial Institution) local Credit Union, with 60 years of experience, providing financial products and services to the community under the Cooperative philosophy.
- Our mission is to improve the financial well-being of our Members and community, offering financial products and services at the lowest cost, promoting financial planning, the wise use of credit.
- In 2012, we created the JOC's Solar Financing Program that, to date, has enabled approximately **400 residences and small businesses** to install their PV (Photovoltaic) systems, and produce its own clean and renewable energy, disbursing over \$5.2 Millions.
- The JOC's Solar Financing Program methods and guidelines, are the most used among Puerto Rico's Cooperativas.



Aerial view of JOC building, presenting the Photovoltaic System that produce 96.5 KWh of clean energy. Since inception in 2015, has produced 600 MWh, equals to avoid to produce 359 Tons of Carbon Bioxide. Its savings totaled up to 86% in cost of energy.



Challenges and Opportunities

- The current energy system on the Island is highly centralized, expensive and runs on oil.
- It is very outdated and frail, particularly after the disaster caused by hurricane Maria in September of 2017, when most of the people living in rural areas went without electricity for several months.
- The public policy of U.S. Federal Department of Energy recommends for PR the establishment of decentralized energy distribution systems, with storage (battery backups) ability under the main “grid-tie” model, in rural mountainous areas to provide resilience enhancement.
- Four rural communities around JOC in Guaynabo, have a poor electric service, with constant interruptions, which affects their quality of life, as *Puerto Rico Social Vulnerability Index Report* present.



After Hurricane Maria, Puerto Rico became the US jurisdiction that experienced the biggest blackout in modern history.

Guaynabo's Rural Solar Energy Resilience Project (GRSERP)

- **GRSERP** proposes to install PV systems to 40 families from the 4 selected neighborhoods of Guaynabo's rural area (Río, Guaraguao, Mamey and Camarones).
- **JOC** will finance each system on terms that require minimum reduction of 20% between the payment of the energy bill and the payment of the financing.
- PV Systems installed will have storage batteries for back up and resiliency in an event of a future natural disaster or a power outage.
- **The PV systems will provide an infrastructure of interconnections ready to develop community-wide micro-grids in each of the four communities.**



Residential PV system installed in Guaynabo and financed by JOC in 2016. This project produce 5 KWh of clean energy and, due net metering system reduce the utility bill to \$3 monthly.

Alternative Funding

- **\$600,000**. The projected total costs of the **GRSERP**.

Sources

- **\$200,000**. Injection of Secondary Capital, using the financial mechanism of a **Capital Obligation Note**, as already approved for JOC by its regulator.
- **\$160,000**. Grants, to reduce the cost of individual systems.
- **\$200,000**. Will be contributed by JOC from its operational funds.
- **\$40,000**. In grant that will be granted by JOC.



JOC has financed over 400 PV Systems in 26 municipalities around the island and today, the renewable energy financing portfolio accounts for approximately 10% of the total loan portfolio.

GRSERP: Projected Outcomes

- Our main goal is to create a solar energy financing model that begins by improving the ability of individuals and families of low-to-moderate incomes of selected geographical areas to meet their electrical needs in a reliable and economical way and that at the same time, the foundations for the establishment of community microgrids.

