

# Barceloneta Landfill Superfund Site

Florida Afuera, Puerto Rico

JUNE 2024

## OVERVIEW

The Barceloneta Landfill Site (Site) is about 4.5 kilometers (km) from the Municipality of Barceloneta in Florida Afuera, Puerto Rico. The Site's landfill closed in 1981 and the remedial action is complete. The Site was listed on the National Priorities List (NPL) on September 8, 1983. Currently, the Environmental Protection Agency (EPA) is helping the municipality and local partners to evaluate ways the land at the Site could be used to benefit the community.

Frequent power outages, fluctuating electricity prices and extreme weather events are common challenges for communities around Puerto Rico. Creating more resilient alternative energy options is an important priority for many communities. In 2019, the Puerto Rico Energy Public Policy Act set a goal for the commonwealth to supply 100 percent of its electricity from renewable resources by 2050.

Solar photovoltaic (PV) generation can offer a resilient, cost-effective, and environmentally friendly source of energy. This document summarizes information about the surrounding area and local population and evaluates solar power generation opportunities that could benefit the municipality and residents.

### Demographic Considerations

The Site is surrounded by tropical forest and Quebrada Cimarrona, a tributary of the Rio Grande de Manati, is located 0.5 km north. The Site is also surrounded by residential and various commercial and agricultural uses.

Barceloneta is synonymous with the pharmaceutical industry. The town boasts many of the island's plants in the northern part of Puerto Rico. Puerto Rico accounted for 19.3% of the \$66 billion in pharmaceuticals the U.S. exported in 2020.

A small residential area of approximately 150 homes is located south of the Site. 555 people live within 0.8 km of the Site (0.5 miles) and 81 live within 0.4 km. This population was determined using EPA's [EJ Screen tool](#), which calculates approximate population using EPA Site boundaries and an appropriate surrounding area if needed.

For more information about climate and economic justice in Puerto Rico, see the [Climate and Economic Justice Screening Tool](#).

## QUICK FACTS

**Description:** Former landfill closed in 1981.

**Location:** Interior Road PR-665, Florida Afuera Ward, Florida Afuera, PR

**Size:** 20 acres/ 0.08 km<sup>2</sup>

**Owner:** Municipality of Barceloneta

**Remedial Action Status:** Complete

**Solar Capacity (Estimated):** 4.1 megawatts

**Redevelopment Considerations:**

- Landfill cap
- Long-term groundwater monitoring
- Fence to limit access
- Institutional Controls

**Website:** [www.epa.gov/superfund/barceloneta-landfill](http://www.epa.gov/superfund/barceloneta-landfill)

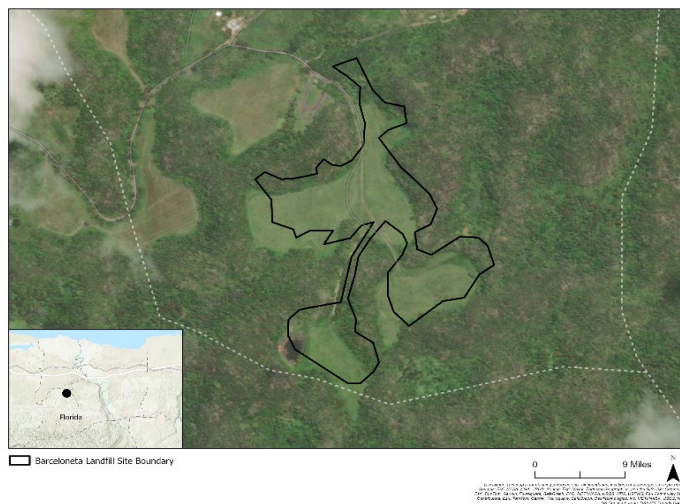


Figure 1: Approximate Barceloneta Landfill Superfund Site boundary.

## Reuse Opportunities

Reuse opportunities identified for the Site include:

### Solar renewable energy generation

Photovoltaic (PV) energy could be used to provide power to the community surrounding the Site. Solar panels could be mounted on rooftops and in an array on the ground.

- **Landfill Solar** – Approximately 27,000 square meters of land is available to support a 4.1 megawatt (MW) solar array at the Site. See Solar Economics for more info about development and financial benefits of solar on a landfill site.
- **Battery Storage** – Creating a microgrid system in which local solar panels are backed up by batteries can protect residents from losing power during a storm.
- **Rooftop Solar for Residents** – Rooftop solar panels could be installed in the communities surrounding the Site. If property owners install their own rooftop solar, [LUMA](#) Energy can purchase 75% of PV electric output that customers do not use at their property. LUMA will purchase excess power from rooftop solar at \$0.10/kilowatt-hours (kWh). This is known as net metering. The PV system size limit for net metering is 25 kilowatts for residential and 1 MW for commercial.
- **Resilience Hub** – Resilience hubs are systems tailored to a community's energy needs that can provide electricity during grid events or climate related disasters. The U.S. Department of Energy ([DOE](#)) has awarded funding to support this effort.

### Recreational uses

The Site is adjacent to two residential communities and surrounded by a tropical forest. The Site could serve as a recreational amenity for the community. Recreational opportunities could be enhanced by creating amenities such as trails for access, parking and seating areas.

## Solar Economics

There are several ways that the community and municipality could help sponsor a solar project at the Site. The municipality or a development partner could pursue an approximately 27,000 square meter solar project.

- **Third-party ownership** – The most common way is for the municipality or landowner to work with a solar development partner that installs the panels and sells the power to one or more users through a Power Purchase Agreement (PPA). A third-party developer builds, owns, operates, and maintains an array while the customer hosts the system on their property.
- **Direct ownership** – the municipality finances, builds, owns, operates, and maintains the solar project and controls the electricity it generates.
- **Community solar** – a solar project that accepts capital from and provides output to multiple customers.

#### Power Purchase Agreement (PPA)

A customer enters a contract with the third-party owner of the solar system to purchase electricity at a set rate per kWh.

The 2023 Inflation Reduction Act (IRA) created incentives that can help businesses and local governments to finance solar renewable energy projects. Solar project size and cost before and after applying opportunities are outlined below:

| Barceloneta Landfill Site                                                                                                                                                                                                     |                                             |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----|
| Project Size                                                                                                                                                                                                                  | 4.1 MW<br>(~6.7 acres/27,150 square meters) |     |
| Estimated Cost                                                                                                                                                                                                                | \$11,500,000                                |     |
| Investment Tax Credit                                                                                                                                                                                                         | -\$3,500,000                                | 30% |
| Bonus Tax Credits*                                                                                                                                                                                                            | -\$3,500,000                                | 30% |
| Low Income Community (10%), Domestic Content (10%), Energy Community (10%)                                                                                                                                                    |                                             |     |
| Project After Tax Credits                                                                                                                                                                                                     | \$4,500,000                                 | 40% |
| *Project must be < 5 MWAC in capacity, and there is a national maximum allocation for this adder. Barceloneta is in a low-income community as defined by U.S. Treasury and meeting IRA domestic content & labor requirements. |                                             |     |

## CONTACT INFORMATION

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