

RE-Powering America's Land

Evaluating the Feasibility of Siting Renewable Energy Production on Potentially Contaminated Land

Puerto Rico

RE-Powering: EPA/NREL Feasibility Studies

The U.S. Environmental Protection Agency's (EPA) *RE-Powering America's Land* Initiative encourages renewable energy development on current and formerly contaminated land, landfills and mine sites when it is aligned with the community's vision for the site. EPA and the U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) are collaborating on a project to evaluate the feasibility of siting renewable energy production on potentially contaminated sites. This effort pairs EPA's expertise on contaminated sites with NREL's expertise in renewable energy. The feasibility studies provide site owners and communities with a technical and economic assessment of installing renewable energy on a given site.

Site Description

Puerto Rico has great solar resource potential, but there are limited solar energy facilities. Closed landfills, which have few alternative uses, are one option for siting solar facilities in Puerto Rico. Solar panels can be installed atop the cap to power landfill operation and maintenance activities and for potential sale back to the power grid.

Community Goals

Puerto Rico electric rates are roughly double the average rate in the United States. These high electricity rates coupled with strong solar resource availability make sites in Puerto Rico attractive candidates for solar development. Because landfills have limited reuse and redevelopment opportunities, these sites were targeted for near-term solar development. These areas are typically large, flat, open, and unshaded areas close to infrastructure. Photovoltaic (PV) systems may generate revenue on a landfill site that may otherwise go unused.

Feasibility Study: Solar

EPA and NREL conducted a study on the potential for solar power generation on the landfills. The feasibility study evaluated the technical and economic opportunities and challenges at the site. The completed study:

- Identifies possible photovoltaic system size and type for those sites;
- Reviews the economics of the proposed systems; and
- Highlights financing options.

The feasibility of PV systems installed on landfills is impacted by the available area for an array, solar resource, operating status, landfill cap status, distance to transmission lines, and distance to major roads. All of the landfills in Puerto Rico were screened according to these criteria in order to determine the sites with the greatest potential. Eight landfills were chosen for site visits based on the screening criteria and location. Seven were found to be suitable for a solar array with sufficient acreage to install a total of up to 10.5 megawatts (MW) across these sites.

Landfills across Puerto Rico

Site Facts:

Site type: RCRA Sites

Renewable technology: Solar

Generation potential: Utility scale and energy for remediation

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The information presented in this fact sheet is from the site's initial proposal, site visit(s), discussions with community stakeholders, and other information collected in preparation of the feasibility study. This fact sheet is for informational purposes only and may not reflect the site's current regulatory or remediation status.

For more information, visit www.epa.gov/renewableenergyland or contact cleanenergy@epa.gov



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