

Accelerated renewable energy deployment, energy storage needed for a resilient power grid in Puerto Rico

February 8 2024, by JoAnna Wendel



Researchers from PNNL, five other national laboratories, and DOE worked with stakeholders in Puerto Rico to outline a path toward building a fully renewable power grid by 2050. Credit: Andrea Starr | Pacific Northwest National Laboratory

With a lot of solar and wind power, energy storage, and advanced extreme weather impact modeling, Puerto Rico could achieve a 100% renewable power grid by 2050. These and other recommendations are the [results](#) of the "Puerto Rico Grid Resilience and Transitions to 100% Renewable Energy Study" (PR100), announced Feb. 7.

For the last two years, six Department of Energy national laboratories, with extensive input from stakeholders in Puerto Rico, studied how the island can build a renewable, resilient grid.

Pacific Northwest National Laboratory researchers led much of the resilience and reliability modeling for the study. In one portion of the study, researchers simulated a future renewables-based power grid using the Electrical Grid Resilience and Assessment System (EGRASS) model—and then hit it with 100 hurricanes to analyze the system recovery after severe damage with the Recovery Simulator and Analysis model. They also looked at how technologies such as grid-forming inverters would help create a more reliable grid.

"We're in a position now to help Puerto Rico be in control of their renewable energy efforts as they progress toward a 100% renewable, resilient grid," said Marcelo Elizondo, principal electrical engineer at PNNL and lead researcher on PNNL's contributions to the PR100 study.

The study results outline both near- and short-term strategies for Puerto Rico to build a resilient, reliable grid in the face of major hurricanes and [natural disasters](#). The results emphasize accelerating deployment of renewable energy generators such as rooftop [solar panels](#), the critical need for [energy storage](#) to stabilize the grid in case of a disruption in energy generation and enhanced extreme weather impact modeling to prepare for hurricanes.

More information: Report summary: pr100.gov/

Provided by Pacific Northwest National Laboratory

Citation: Accelerated renewable energy deployment, energy storage needed for a resilient power grid in Puerto Rico (2024, February 8) retrieved 12 May 2024 from <https://techxplore.com/news/2024-02-renewable-energy-deployment-storage-resilient.html>

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