A Plan to Strengthen Puerto Rico's Electric Grid

In June 2019, the Puerto Rico Electric Power Authority (PREPA) issued its revised Integrated Resource Plan (IRP), a planning document commonly used by utilities across the U.S. to outline how it will provide energy resources over the long-term. PREPA's IRP details the resources it will utilize over the next 20 years as it redesigns Puerto Rico's electric system to meet the island's future electricity needs. With the goal of helping Puerto Rico transition to 100 percent renewable energy by 2050, as mandated in the Puerto Rico Energy Public Policy Act, the plan also aims to make the grid more resilient and avoid the recurrence of massive blackouts that the island experienced in the aftermath of Hurricane Irma and Maria in 2017.

Improving the resilience of Puerto Rico's electric grid is critical because communities on the island are still vulnerable to hurricanes and other large-scale disruptions. Incorporating distributed energy resources, through systems such as microgrids - mini-energy service stations that maximize locally generated renewable energy, such as wind and solar power, and are backed by battery storage and intelligent software – should play a key role in addressing these challenges proactively. These systems can be designed to connect to the larger grid to provide cleaner, more reliable energy every day, and can separate from the grid during emergencies to keep the lights on in parts of the island that need it most.

"Puerto Rico has committed to source 40 percent of its electricity from renewables by 2025 and completely stop using coal by 2028."

– Public Energy Policy Law of Puerto Rico

A Plan that Works for Puerto Rico

Used by many large utilities in the US, IRPs are critical planning tools to evaluate future electricity needs. They give regulators, industry, and the general public a chance to assess how the utility is doing its due diligence and mobilizing available resources to deliver reliable, low-cost electricity to customers in alignment with public policy goals. PREPA's IRP is a key opportunity to map how to best update Puerto Rico's aging energy infrastructure and rebuild the electric grid to be resilient, and to provide residents with reliable, clean, and affordable energy across the island. As such, it is important that the plan benefits communities and the environment, and that it does not charge customers extra in order to pay for unnecessary infrastructure. For this to happen, there needs to be meaningful opportunities for customers and third-party energy service companies to identify and define their long-term power needs and resilience measures.

ENERGY

"As of 2019, 33 states require energy utilities to file IRPs."

– American Wind Energy Association

Advocating for longterm solutions

Various organizations, including Environmental Defense Fund (EDF), are evaluating PREPA's IRP, as the plan will define Puerto Rico's future energy resources and establish their impact on the island's environment, public health and economic future. We see it as an opportunity to strategically transform Puerto Rico's electric system into one that is more customer-centric and resilient and that harnesses renewable energy in order to support the island's recovery after Hurricane Maria.

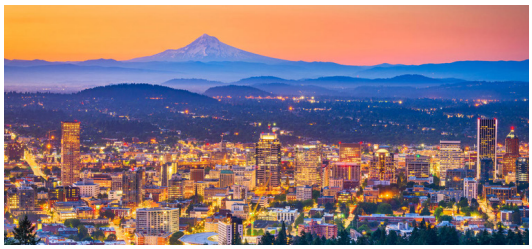
It is important to help PREPA avoid unnecessary energy infrastructure investments, allocate financial resources toward renewable energy technologies, and ensure microgrids are integrated into the island's energy infrastructure. Done right, the IRP can serve as a catalyst for cost-effective, community-scale microgrids and other distributed energy resources.

PREPA's IRP will also be the subject of a public review process.

CASE STUDIES

Grid modernization in Hawaii

Given the parallels between both islands, Hawaii's most recent IRP offers key lessons for Puerto Rico. Allowing more renewables and distributed energy resources, such as rooftop solar and battery storage, into the system early on in the planning period, eliminating gas imports and a shift from centralized to distributed approach to grid management are among the nine best practices Hawaiian Electric Companies identified to help utilities looking to establish strong renewable energy policy and create resiliency for the grid. The utilities' approach evaluates the system's needs and considers all alternatives to determine what is most beneficial to consumers, providers and the utility, especially ensuring that all types of distributed energy resources compete fairly with fossil fuels. The process engaged stakeholders to represent the interests of Hawaii's various communities.



Prioritizing Clean Energy in Oregon

Oregon's largest utility, Portland General Electric (PGE), adopted an IRP in 2019 that prioritizes renewable energy in line with state and local clean energy targets. Following public opposition to PGE's proposal to build new gas-fired power plants, PGE's plan moves away from fossil fuels and calls for a unique combination of wind, solar, and battery energy storage. PGE has taken an approach that has resonated with stakeholders and allowed the utility some leeway in meeting energy demands, as it optimizes its renewable energy portfolio. If additional energy resources were to be needed, PGE could contract power from existing regional sources before putting out an RFP for additional renewables. As more local governments look to set ambitious renewable energy targets, PGE's IRP outlines how possible it is for utilities across the state to move away from fossil fuels while still meeting energy demands and meeting cost metrics.

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