



Guam100

Guam's 100% Renewable Energy Future

Guam's reliance on imported fossil fuel for energy means that the territory's electricity costs are almost double that of the U.S. national average and fluctuate based on world oil markets.

Guam's Renewable Portfolio Standard (RPS)—created in 2008 and updated in 2019—established a mandate that 50% of net electricity sales be met by renewables by 2035 and 100% by 2045.

With funding from the U.S. Department of the Interior's Office of Insular Affairs (OIA), Guam Power Authority (GPA) partnered with the National Renewable Energy Laboratory (NREL) on the Guam100 initiative to identify various **strategies for achieving an affordable, technically sound, resilient, and equitable 100% renewable energy future.** The renewable energy transition will affect Guam residents, businesses, and the utility. Guam100 will help the island understand those potential impacts and prioritize strategies and investment decisions.

Approaching Renewable Energy

Guam100 is a comprehensive approach to providing analysis to support the transition to 100% renewable energy that considers future load growth, equity, and affordability as well as enhancing the reliability of Guam's electric grid.

Guam community stakeholder input will inform the approach to analysis and modeling of future electricity needs, priorities (resilience, equity, and affordability), and resources to meet those needs.

Guam's Energy Landscape

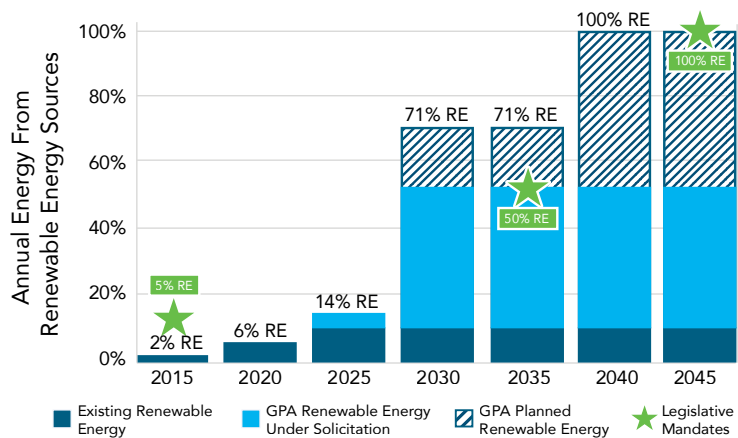
In addition to the effects of extreme weather and reliance on imported fossil fuels, Guam faces several challenges:

- Future uncertainty brought on by climate change, natural hazards, geopolitical changes, and/or fuel supply chain issues
- Technical challenges of integrating variable renewable energy generation beyond solar and battery storage
- Reaching 100% renewable energy affordably
- The effects of aging generation assets and plant retirement on supply.

As of 2024, the Guam Power Authority (GPA) meets between 11% and 12%¹ of sales through rooftop and utility-scale renewable energy projects. GPA's 2021 Clean Energy Master Plan (an Integrated Resource Plan) charts a potential path to meeting 100% by 2040.

Many projects include battery energy storage for grid resilience and reliability. Achieving 100% renewable electricity will require significant infrastructure investment. Guam100 will explore technology options, siting location, resource adequacy, rate impacts, and other potential benefits of the energy transition to help Guam reach its renewable energy goals.

Total Renewable Energy Generation by Year



Note: Chart based on 2024 load. Projected future loads remain to be determined.

¹ Guam Energy Baseline Report. <https://www.nrel.gov/docs/fy24osti/88454.pdf>

² Guam Power Authority: 2022 Integrated Resource Plan. https://admin.guampowerauthority.com/uploads/GPA_2022_Integrated_Resource_Plan_b16ef41f9e.pdf?updated_at=2022-09-20T07:24:07.680Z



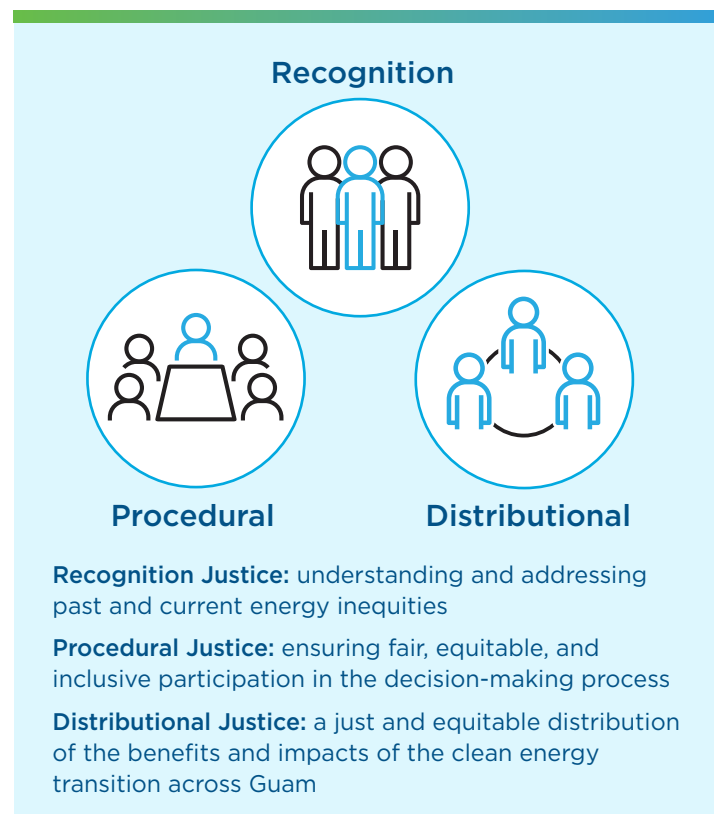
Collaborating With Communities

Guam100 will take an energy justice-centered approach, especially focused on the elements of procedural justice. This will include an intensive on-the-ground stakeholder engagement process anchored by an Advisory Group that acts as a key organizational body between local communities and institutional decision makers. Ongoing feedback will inform NREL's research teams and Guam100 analysis.

The advisory group will be composed of institutional decision-making bodies and community organizations. The group will identify engagement methods tailored to their communities. These may include:

- Community-specific listening sessions
- An island-wide survey
- Round tables or town halls
- Educational materials—such as a series of fact sheets—to help Guam residents feel confident in making informed decisions about their energy future.

Outreach and engagement methods will incorporate community and stakeholder feedback into the analysis so that the potential strategies and solutions that are modeled reflect a diverse range of Guam perspectives.



Guam100: Guam's 100% Renewable Energy Future represents a culmination of past, current, and future efforts toward Guam's clean energy future. To stay updated on Guam100 and ongoing activities, visit: <https://www.nrel.gov/Guam100>.