



# Hawai'i Natural Energy Institute Research Highlights

## International Support

### Energy Regulatory and Technical Support for Fiji

**OBJECTIVE AND SIGNIFICANCE:** In partnership with the Pacific Power Association (PPA) and through funding under an Asia Pacific Regional Energy System Assessment (APRESA) grant from the Office of Naval Research, HNEI provided technical, regulatory and policy support to Energy Fiji Limited (EFL), the national utility of the Republic of Fiji.

**BACKGROUND:** Fiji generates approximately 60% of its electricity from hydro sources, while the remainder is supplied by thermal power and emerging variable and intermittent energy sources. EFL's planned expansion of solar generation presents opportunities and challenges for grid management, especially as VRE sources and BESS become more prominent. Meeting Fiji's ambitious alternative energy targets requires broad ranging technical capacity, effective power system planning, and regulatory frameworks informed by leading-edge island contextual experiences.



Figure 1. Wind Turbines at Butoni Wind Farm, Fiji.

PPA is an inter-governmental agency whose objective is to improve the quality of power in the Pacific region through a cooperative effort among the utilities, private sector, and regional development partners. HNEI's relationship with PPA began in 2023, when the team was invited to present at PPA's 30<sup>th</sup> annual conference in Saipan, sharing technical insights and forging new connections with regional stakeholders.



Figure 2. PPA's 30<sup>th</sup> Annual Conference in Saipan.

This project built on HNEI GridSTART's collaboration with PPA to deliver targeted capacity building engagements for Pacific island utilities

pursuing ambitious energy transitions. By drawing on lessons learned from Hawai'i and leveraging regional expertise, we are supporting EFL's effort to plan, procure and operate new solar projects and battery energy storage systems (BESS) in Fiji.

**PROJECT STATUS/RESULTS:** Since 2023, HNEI has worked closely with PPA to design and implement energy sector capacity building initiatives across its member utilities. This partnership enabled direct engagement with EFL, as PPA facilitated connections and responded to EFL's request for training to advance Fiji's goal of meeting all electricity demand from non-conventional sources by 2030, with a substantial increase in solar capacity as a cornerstone of this effort.

In April 2025, a two-day virtual training workshop tailored for EFL staff was delivered, focusing on integrating VRE generation, procurement strategies, lessons learned from Hawai'i's energy transition, and practical approaches for operation and planning solar projects on an island grid. Core topics included:

- Hawai'i's journey to high variable and intermittent energy penetration;
- Grid resource planning and operations with high shares of solar and non-fossil generation;
- BESS applications for reliability and resilience;
- Updated grid interconnection requirements and distributed PV program evolution;
- Regulatory and policy frameworks for competitive resource procurement; and
- Power system resilience and risk management under rapidly changing conditions.

The training featured detailed case studies and technical lessons from Hawai'i's island utilities, discussion of specific regulatory and procurement approaches, and shared modeling tools where appropriate. HNEI collaborated closely with EFL team members to identify further technical support needs, setting the stage for potential follow-up activities under alternative funding streams.

*Funding Source:* Office of Naval Research

*Contact:* Leon Roose, [lroose@hawaii.edu](mailto:lroose@hawaii.edu)

*Last Updated:* November 2025