



Hawai'i Natural Energy Institute Research Highlights

International Support

Energy Regulatory and Technical Support for Majuro, Marshall Islands

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 Marshalls Energy Company (MEC), the national utility of Republic of the Marshall Islands (RMI).

BACKGROUND: RMI depends heavily on imported fuels to meet electricity needs. To enhance energy security and economic resilience, RMI's 2018 Energy Roadmap set targets to increase indigenous energy supply and efficiency. The government is pursuing new energy policies and regulatory measures to guide this transition. MEC, the state-owned utility serving Majuro and outer islands, operates multiple independent power systems. Majuro's largest system recorded a peak demand of 9.8 MW in 2023, projected to reach 14 MW over the next several years, with solar representing only a small portion of current generation. Significant increases in VRE penetration and battery energy storage systems (BESS) are anticipated, requiring stronger technical capacity and regulatory frameworks.

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 30th annual conference in Saipan, sharing technical insights and forging new connections.



Figure 1. PPA's 30th 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. Drawing on lessons learned from Hawai'i and leveraging regional expertise, we supported MEC's effort to plan and

operate new solar and energy storage projects on a small isolated island grid with aging existing infrastructure.

PROJECT STATUS/RESULTS: Since 2023, HNEI has worked closely with PPA to design and implement energy sector capacity building initiatives for member utilities. This partnership enabled direct engagement with MEC, as PPA facilitated connections and supported RMI's request for technical assistance and training to advance its national energy priorities.

In February 2024, HNEI met with the National Energy Office, the Environmental Protection Authority and MEC to better understand local challenges and needs.

In April 2025, the team delivered a two-day, in-person capacity building workshop at MEC headquarters in Majuro, featuring presentations, interactive discussions, and hands-on exercises on system planning, lessons learned from Hawai'i's energy transition, and implementing grid technologies for island systems. It also included site visits and direct exchanges with MEC engineers and management. The core topics presented included:

- Drivers for Hawai'i's energy transition and enabling regulatory frameworks;
- Distributed energy resources feeder hosting capacity methods;
- BESS integration for reliability and resilience;
- Grid modernization and planning for rapid energy transition;
- Competitive procurement approaches for new energy resources; and
- GridSTART's generation resource mix modeling tool for MEC's grid.

Follow-up discussions are ongoing to explore further collaboration, including potential support for developing an RMI grid code, and continued technical assistance under future funding opportunities.

Funding Source: Office of Naval Research

Contact: Leon Roose, lroose@hawaii.edu

Last Updated: November 2025