Hawai‘i Natural Energy Institute Research Highlights

International Support

Renewable Energy Regulatory and Technical Support for Yap State, Micronesia

OBJECTIVE AND SIGNIFICANCE: In partnership with the Pacific Power Association (PPA) and under funding of the Asia Pacific Regional Energy System Assessment (APRESA) grant from the Office of Naval Research, HNEI’s Grid System Technologies Advanced Research Team (Grid*START*) is providing technical and regulatory/policy support to the Yap State Public Service Corporation (YSPSC) in the Federated States of Micronesia (FSM).

BACKGROUND: 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 aid donors. HNEI has been working with PPA since 2023, when we participated as an invited presenter at PPA’s 30th annual conference in Saipan. Over the past year, Grid*START* has worked with PPA to shape a partnership to deliver much needed capacity building to PPA’s member utilities.

Figure 1. PPA’s 30th Annual Conference in Saipan.

YSPSC is a state-owned utility that provides water, electricity, and sewer services to Yap’s main island (Yap Proper), as well as the state’s outer islands. The peak demand on Yap Proper is approximately 1.9 MW and is served by approximately 11 MW of installed capacity. Approximately 10% of Yap’s installed capacity comes from renewable energy (RE) sources, such as solar photovoltaic (PV) and wind. This includes both utility-scale projects funded by entities, such as the Asian Development Bank, and smaller systems installed by customers who benefit from net energy metering (NEM) tariffs. Significant increases in variable renewable energy (VRE) penetration, battery energy storage systems (BESS), and electric vehicles (EVs) are expected on Yap in the near future, including projects procured on a bundled basis by the larger FSM government, and owned/operated by YSPSC. Significant new load demand from U.S. Department of Defense facilities under construction is anticipated.

PROJECT STATUS/RESULTS: The first training provided by HNEI Grid*START* under its partnership with PPA was conducted at YSPSC’s offices in October 2024. The training consisted of two full days of slide presentations and discussions on stated topics of interest for YSPSC including:

- Hawai‘i’s clean energy transition;
- Managing high VRE penetrations;
- Updated grid interconnection standards;
- BESS and EVs;
- Climate adaptation and resilience; and
- Competitive procurements for RE projects.

HNEI also provided its internally developed *Generation Mix Resource Modeling Tool* to YSPSC personnel and trained them on its use. The team visited the island’s power generation and distribution facilities and engaged in further discussion with YSPC’s management to identify potential avenues for future follow-on support, which Grid*START* plans to deliver to YSPSC in 2025. HNEI also plans to conduct additional trainings for other Pacific region utilities under its partnership with PPA.

Funding Source: Office of Naval Research

Contact: Leon Roose, lroose@hawaii.edu

Last Updated: November 2024

Figure 2. VRE installations on Yap Proper.

Hawai‘i Natural Energy Institute | School of Ocean & Earth Science & Technology
University of Hawai‘i at Mānoa, 1680 East-West Road, POST 109 • Honolulu, HI 96822
Phone: (808) 956-8890 • Fax: (808) 956-2336 • www.hnei.hawaii.edu