



Hawai'i Natural Energy Institute Research Highlights

Energy Policy & Analysis

Moloka'i Community Energy Resilience Action Plan

OBJECTIVE AND SIGNIFICANCE: In previous years, stakeholders in Moloka'i developed the Community Energy Resilience Action Plan (CERAP). The CERAP is a first of its kind initiative in Hawai'i and represents an independent, island-wide, community-led, and expert-informed collaborative planning process to increase renewable energy on Moloka'i. HNEI supported the CERAP process by providing technical expertise, data, modeling capabilities, and technical reviews throughout the project.

BACKGROUND: Moloka'i residents have raised concerns regarding power system reliability, affordability, equity, and lack of meaningful engagement. The community felt that previous planning efforts, such as Hawaiian Electric (HECO)'s Power System Improvement Plan (PSIP) and Integrated Grid Planning (IGP), did not adequately incorporate Moloka'i's priorities or cultural values.

Several renewable energy projects proposed over the past decade—including utility-scale wind and inter-island transmission cables—were ultimately withdrawn due to community opposition. In 2020, when HECO initiated procurement for a new renewable project on Moloka'i, community organizations requested that the Hawai'i Public Utilities Commission (PUC) pause the process until a community-developed planning effort could identify local goals and priorities.

PROJECT STATUS/RESULTS: Sustainable Moloka'i and the Moloka'i Clean Energy Hui began a multi-year, community-driven planning effort (CERAP 1.0), with HNEI providing technical support and analysis. During CERAP 1.0, HNEI advised stakeholders on power system planning, resource screening, and data collection. HNEI also developed a simplified dispatch model to evaluate candidate portfolios of renewable energy and storage resources.

The model allowed stakeholders to test scenarios, visualize impacts on the grid, and understand trade-offs between renewable generation, storage, and fuel use. In January 2023, HNEI met with Sustainable Moloka'i on-island to refine analysis, increase community accessibility to the data, and identify opportunities related to federal incentives (e.g., Inflation Reduction Act tax credits).

In June 2023, Sustainable Moloka'i and the Moloka'i Clean Energy Hui, with HNEI serving as the lead technical partner, completed [Moloka'i CERAP 1.0](#) and submitted it to the PUC (Docket #2019-0178). This community-led, island-wide plan provided a roadmap based on ten renewable energy projects to achieve “100% renewable energy for Moloka'i that is feasible, respectful of Moloka'i's culture and environment, and strongly supported by the community” (Figure 1).

Building on this foundation, in 2024 and 2025, the project advanced into CERAP 2.0, shifting from conceptual planning to evaluating specific project opportunities. CERAP 2.0 aims to be “a community-driven process to validate, iterate, and refine our community's chosen projects to deliver high-performing renewable energy to serve and secure abundance for current and future generations.” The community is now prioritizing projects that align with the roadmap established in CERAP 1.0 and reflect Moloka'i's core values—particularly sustainability, local benefit, and protection of 'āina.

HNEI continues to provide technical assistance as a member of the Technical Advisory Group, reviewing project concepts, feasibility considerations, and renewable energy options under evaluation by the Moloka'i Hui.

Through a structured community and technical review process, the Hui identified two priority renewable energy projects for further feasibility analysis: 1) a floating photovoltaic (FPV) system at the Moloka'i Reservoir and 2) a pumped hydro energy storage facility.

Both projects were vetted through community meetings and reviewed by technical advisors. Together, the community and the Hui established goals, preliminary design considerations, and a timeline that includes detailed technical feasibility studies during CERAP 2.0.

HNEI participated in multiple project working sessions, providing neutral technical perspective, and reviewing assumptions related to system performance, siting constraints, and grid integration requirements.

CERAP 2.0 is now coordinated with the U.S. Department of Energy’s C2C (Communities to Clean Energy) program and the Energy Transitions Initiative Partnership Project (ETIPP), allowing Moloka’i to align community-driven planning with federal resources, technical experts, and potential funding pathways.

HNEI will continue to support the Moloka’i Clean Energy Hui as the CERAP 2.0 effort moves into feasibility assessment and project development, and will engage with the PUC and HECO to ensure that community priorities are incorporated into future planning and procurement decisions.

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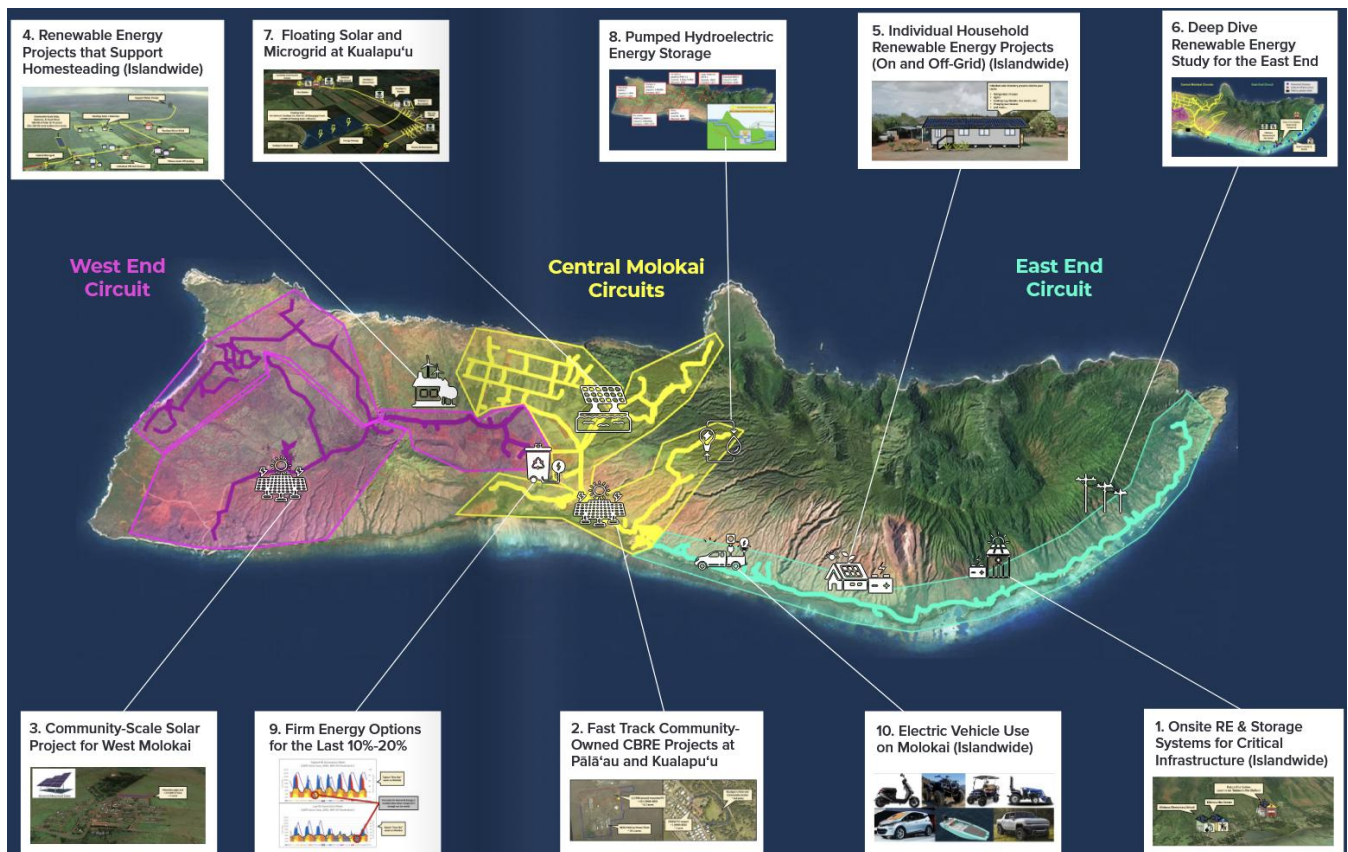


Figure 1. Moloka’i’s Clean Energy Roadmap, excerpted from CERAP 1.0.