# HAWAII STATE ENERGY OFFICE
# STATE OF HAWAII

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Testimony of
**MARK B. GLICK, Chief Energy Officer**

before the
**SENATE COMMITTEES ON**
**ENERGY AND INTERGOVERNMENTAL AFFAIRS**
**AND**
**ECONOMIC DEVELOPMENT AND TOURISM**
Tuesday, February 11, 2025
3:10 PM
State Capitol, Conference Room 016 and Videoconference

In Support of
**SENATE BILL NO. 1338**

**RELATING TO LONG DURATION CLEAN ENERGY STORAGE.**

Chairs Wakai and DeCoite, Vice Chairs Chang and Wakai, and members of the Committees, I am writing in support of DBEDT and Administration Priority Senate Bill No. 1338 which relates to long-duration clean energy storage.

Longer duration storage technologies typically refer to longer duration than the four-hour lithium ion (Li-ion) battery energy storage systems that in 2021 and 2022 comprised about 40% of storage capacity installed according to the National Renewable Energy Laboratory. During that same period less than 6% had durations of greater than four hours.

Technological improvements offer the potential for several storage technology options to achieve lower per-unit of energy storage costs and longer service lifetimes to compete with Li-ion technology and support Hawai‘i’s energy transition as more renewables are deployed on the grid. At high rates of renewable penetration, longer duration storage enables solar and other renewable sources generated during the daytime that exceed demand to be used throughout the night or at other times when most needed. A long duration clean energy storage investment capital special fund would provide the Hawai‘i State Energy Office (HSEO) with seed and venture capital for investments in private sector and federal projects for long duration storage research, development, testing, and implementation.

Long-duration storage, including hydrogen (H2) and pumped hydroelectric storage, can make renewable energy available in times of need. It further has the potential to act as firm or dispatchable renewable, subject to the storage capacity, at competitive costs. For example, Kaua‘i Island Utility Cooperation (KIUC) had issued a Power Purchase Agreement (PPA) at $0.08/kWh PPA for a pumped hydroelectric storage project combining 35MW solar and battery, and 25MW pumped hydro. KIUC

had estimated that the project would save over $150 million compared to fossil fuels over the term of PPA.

HSEO points out that O'ahu has the potential for pumped hydro at Lake Wilson, where previous studies had estimated a potential capacity of 40 MW from Wahiawā, Nu‘uanu, and Maunawili reservoirs (USDOE and DBEDT 1981).

The measure, as written, provides sufficient flexibility to pursue a portfolio of long duration technologies such as electrochemical, mechanical, thermal, chemical carriers, or any combination that has the potential to meet the necessary duration and cost targets for grid flexibility. The changes also preserve the crucial role of hydrogen pursuant to the original intent of the renewable hydrogen program but broadens it appropriately to include all long duration storage options.

Thank you for the opportunity to testify.