HAWAII STATE ENERGY OFFICE
STATE OF HAWAII

JOSH GREEN, M.D.
GOVERNOR

MARK B. GLICK
CHIEF ENERGY OFFICER

235 South Beretania Street, 5th Floor, Honolulu, Hawaii 96813 Telephone: (808) 587-3807
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804 Web: energy.hawaii.gov

Testimony of
MARK B. GLICK, Chief Energy Officer

before the
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Tuesday, February 14, 2023
9:10 AM
State Capitol, Conference Room 325 and Videoconference

Providing COMMENTS on
HB 927

RELATING TO ENERGY.

Chair Lowen, Vice Chair Cochran and Members of the Committee, the Hawai‘i State Energy Office (HSEO) provides comments on HB 927, which would establish within the Hawai‘i State Energy Office a future fusion task force.

HSEO’s testimony is guided by its mission to promote energy efficiency, renewable energy, and clean transportation to help achieve a resilient, clean energy, decarbonized economy.

HSEO appreciates the importance of technological advancement and the value of planning ahead to remove roadblocks and create conditions for success so that technologies and desirable projects will not be delayed when they are economically, technically, socially, and environmentally ready for deployment. As reported in December of 2022 by the Lawrence Livermore National Laboratory (LLNL),

> “On Dec. 5, a team at LLNL’s National Ignition Facility (NIF) conducted the first controlled fusion experiment in history to reach this milestone, also known as scientific energy breakeven, meaning it produced more energy from fusion than the laser energy used to drive it…
>
> LLNL’s experiment surpassed the fusion threshold by delivering 2.05 megajoules (MJ) of energy to the target, resulting in 3.15 MJ of fusion energy output.”

From a research standpoint, the net positive result was highly newsworthy.

However, the magnitude of energy produced (the difference between 3.15 megajoules and 2.05 megajoules) is 1.1 megajoules. This is enough energy to drive one electric car one mile.[1]

The equipment required to deliver that result was, as stated in LLNL's press release, "…the world's largest and most energetic laser system… is the size of a sports stadium and uses powerful laser beams to create temperatures and pressures like those in the cores of stars and giant planets."[2]

Many years of additional research and development work will be required before this technology is ready for commercial use.

With so much undeveloped and unknowns about the final commercial form of fusion energy systems, we respectfully suggest that we all continue to be interested and inspired by these types of developments (many of which are reported daily by engineering and scientific societies), but that we refrain from creating a task force at this point.

Thank you for the opportunity to testify on this bill.

[1] https://www.forbes.com/sites/bradtempleton/2022/12/31/should-the-megajoule-replace-the-kwh-as-our-unit-of-electric-car-energy--hear-me-out/
[2] https://www.llnl.gov/news/national-ignition-facility-achieves-fusion-ignition