



**STATE OF HAWAII
BOARD OF EDUCATION**
P.O. BOX 2360
HONOLULU, HAWAII 96804

Senate Committee on Ways and Means

Friday, February 26, 2016
9:40 A.M.
Hawaii State Capitol, Room 211

Senate Bill 2604, Relating to a Microgrid Pilot Project for Schools

Dear Chair Tokuda, Vice Chair Dela Cruz, and Members of the Committee:

The Board of Education ("Board") voted to testify in support of the intent of Senate Bill 2604, which would establish an off-grid microgrid pilot project through the Department of Education's Ka Hei program.

The Board has been actively monitoring the Department of Education's efforts to increase the amount of renewable energy it purchases while reducing its consumption through energy efficiencies. The Board supports any program that will allow the Department of Education to reach its long-term sustainability, renewable energy, and energy efficiency goals.

Thank you for this opportunity to testify on behalf of the Board.

Very truly yours,

A handwritten signature in cursive script that reads "Lance A. Mizumoto".

Lance A. Mizumoto
Chairperson



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

Date: 02/26/2016
Time: 09:40 AM
Location: 211
Committee: Senate Ways and Means

Department: Education

Person Testifying: Kathryn S. Matayoshi, Superintendent of Education

Title of Bill: SB 2604 RELATING TO A MICROGRID PILOT PROJECT FOR SCHOOLS.

Purpose of Bill: Requires the department of education to establish an off-grid microgrid pilot project through the Ka Hei program at a school of its choosing.

Department's Position:

The Department of Education (DOE) supports this bill. The DOE has been engaged in an aggressive program to increase the amount of renewable energy it purchases as well as drive down consumption through energy efficiencies. As this program, called Ka Hei progressed, it has become clear that in order to take sustainability 'to the next level' it is necessary to look at strategies beyond renewable energy generation and energy efficiency - strategies such as microgrids.

Because microgrids are defined as 'a group of interconnected loads and distributed energy within defined electrical boundaries and can act as single controllable entities with respect to the utility grid', the establishment of microgrids at various schools sites can become integral components to an improved, more robust and flexible electrical utility.

As such, microgrids are aligned with the DOE's overall long range strategies regarding sustainability, renewable energy, and energy efficiency.

Thank you for the opportunity to provide this testimony.



OPTERRA
ENERGY SERVICES

1099 Alakea Street #2500
Honolulu, HI 96813

**Testimony to the Senate Committee on Ways and Means
Friday, February 26, 2016 9:40 AM
Conference Room 211, State Capitol
RE: SENATE BILL 2604 RELATING TO A MICROGRID PILOT PROJECT FOR SCHOOLS**

Chair Tokuda, Vice-Chair Dela Cruz, and Members of the Education Committee:

Chair Inouye, Vice Chair Gabbard and Members of the Transportation and Energy Committee:

Opterra Energy Services, (“Opterra”) **supports** SB 2604, which requires the Department of Education to establish an off-grid microgrid pilot project through the Ka Hei program at a school of its choosing.

Opterra is working with the Department of Education to deliver the Ka Hei program, a five-year endeavor launched in 2014. The program will integrate innovative energy technology with meaningful learning experiences, all while reducing energy costs. As a comprehensive energy and sustainability program, Ka Hei will transform the learning environment, reduce operational expenses and provide engaging educational opportunities for our students and community.

Opterra supports this bill, which requires the establishment an off-grid microgrid pilot project through the Ka Hei program at a school of its choosing.

There are numerous advantages in establishing microgrid facilities at schools. First, microgrids can store energy produced during the day and use it at night, allowing the school to reach a net zero footprint that help reach our goal of 100% RPS. A net-zero energy campus produces all of the energy needed through clean, renewable energy on an annual basis.

This is a currently a challenge for the schools as changes to the net energy metering program no longer allow for the rollover of credits from month to month. Given there is a lot of solar production in the summer when the schools are not in session, this energy is lost without new and innovative solutions.

Microgrids also increase energy resiliency, which is critical since over 200 schools serve as evacuation centers. In New Jersey in the wake of Superstorm Sandy, schools were identified as being one of several different public facilities that could benefit from the installation of microgrids to improve energy resiliency.

In addition, renewable energy is needed to sustain energy requirements for added load from new technologies to support 21st century learning such as computers, monitors, and heat abatement. Being able to properly size the renewable energy systems after maximizing energy efficiency first is critical.

Thank you for the opportunity to testify.

**Testimony before the
Senate Committee on Ways and Means**

**February 26, 2016, 9:40 am
Conference Room 211**

S.B. No. 2604 – Relating to A Microgrid Pilot Project for Schools

**By Scott Seu
Vice President, System Operation
Hawaiian Electric Company, Inc.**

Chair Tokuda, Vice-Chair Dela Cruz and Members of the Committee:

My name is Scott Seu. I am Vice President for System Operation at Hawaiian Electric Company. I am testifying on behalf of Hawaiian Electric and its subsidiary utilities, Maui Electric and Hawaii Electric Light (collectively “Companies”).

Hawaiian Electric supports the intent of this bill, however we believe the bill should be amended to not require that the microgrid pilot project be off-grid. The optimal microgrid is one that not only serves the needs of the microgrid owner but also can benefit all customers by complementing the operation of the regular grid, such as through demand response programs or other grid support activities. Participation in such programs increases overall societal benefits and supports the entire State in reaching its renewable energy goals, not to mention can provide additional revenues to the microgrid owner. Such a microgrid operates connected to the regular grid during normal conditions, but during emergencies like sustained power outages, the microgrid can be designed to separate from the regular grid and operate independently for resiliency purposes.

Microgrids should be explored in a flexible manner that seeks to maximize benefit to the Department of Education and to the rest of Hawaii’s electric customers. The requirement that the microgrid pilot be off-grid should be deleted from this measure.

Thank you for this opportunity to testify.