

# SB2604

**Measure Title:** RELATING TO A MICROGRID PILOT PROJECT FOR SCHOOLS.

**Report Title:** Microgrid Pilot Project; Department of Education; Schools; Electric Power; Ka Hei Program

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

**Companion:**

**Package:** None

**Current Referral:** EDU/TRE, WAM

**Introducer(s):** KIDANI, GALUTERIA, SHIMABUKURO, Dela Cruz, Inouye, Wakai



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

**Date:** 02/02/2016

**Time:** 02:45 PM

**Location:** 229

**Committee:** Senate Transportation and  
Energy Senate Education

**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 1099 Alakea Street #2500  
Honolulu, HI 96813

**Testimony to the Senate Committee on Education, and  
Senate Committee on Transportation and Energy**

**Tuesday, February 2, 2016 2:45 pm**

**Conference Room 229, State Capitol**

**RE: SENATE BILL 2604 RELATING TO A MICROGRID PILOT PROJECT FOR SCHOOLS**

Chair Kidani, Vice Chair Harimoto 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. 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.

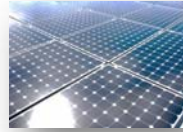
In addition, renewable energy is needed to sustain energy requirements for added load from new technologies to support 21st century learning such as computers, monitors, and heat abatement. Being able to properly size the renewable energy systems after maximizing energy efficiency first is critical.

Thank you for the opportunity to testify.

Sincerely,

Brian Kealoha

Regional Director



**SENATE COMMITTEE ON EDUCATION  
SENATE COMMITTEE ON TRANSPORTATION AND ENERGY**

February 2, 2016, 2:45 P.M.

Room 229

**TESTIMONY IN SUPPORT OF SB 2604**

Aloha Chairs Kidani and Inouye, and members of the committees:

The Blue Planet Foundation supports SB 2604, requiring the Department of Education (DOE) to establish an off-grid microgrid pilot project through the Ka Hei program at a DOE school. Such a project would serve the public in multiple ways by providing an energy independent safe haven for residents during a disaster; demonstrating energy science and engineering to students; and operating as a pilot for the utility to better understand how microgrids can function as part of our 100% clean energy future.

Blue Planet asks that this measure be amended to specify that the microgrid be powered by renewable sources of energy only—not by fossil fuel. Having a fossil-fuel powered microgrid—even in part—would diminish the educational value, raise environmental concerns (local pollution and storing fuel), and weaken the potential of the school to provide support during an extended emergency (due to the need to have an ongoing fuel supply).

**RESILIENCE.** A school microgrid would strengthen our resilience to disasters by providing an “islandable” shelter with its own energy supply in the event that the utility grid fails. This shelter would be more than a safe haven that provides a roof overhead—it would be able to serve those whose lives depend on reliable electricity (folks with respirators, etc.), as well as provide power for communication devices and other modern conveniences.

**ENERGY EDUCATION.** Students today will be helping build our clean energy system of tomorrow. A clean energy microgrid would provide a first-hand learning experience for students to better understand how energy systems function. They wouldn’t have to imagine what our clean energy future looks like—they could see it in action. The system could also provide opportunities for lessons in science, math, computer science, and other fields.

**TECHNOLOGY DEMONSTRATION.** Faced with disruptive technologies, new business models, and clean energy requirements, electric utilities globally are experiencing the biggest transformation since their founding. They must rapidly evolve, adopt new technologies, and “learn by doing.” A microgrid pilot project at a Hawai’i school would provide a working model for the utility to better understand how a microgrid interacts with the larger grid and how it can be used to support integration of more renewable sources on the grid.

Thank you for the opportunity to testify.

**From:** [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
**To:** [EDU Testimony](#)  
**Cc:**  
**Subject:** \*Submitted testimony for SB2604 on Feb 2, 2016 14:45PM\*  
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**SB2604**

Submitted on: 1/29/2016

Testimony for EDU/TRE on Feb 2, 2016 14:45PM in Conference Room 229

Submitted By	Organization	Testifier Position	Present at Hearing
Javier Mendez-Alvarez	Individual	Support	No

Comments:

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