

JAN 22 2016

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# A BILL FOR AN ACT

RELATING TO A MICROGRID PILOT PROJECT FOR SCHOOLS.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. The legislature finds that the nature of  
2 electricity production and generation is evolving rapidly in  
3 light of technical, market, and public policy changes that are  
4 occurring globally, nationally, and in Hawaii.

5           The legislature finds that Hawaii's electricity customers  
6 continue to endure the highest electricity prices in the  
7 country, and the high cost of this essential service imposes  
8 substantial burdens on Hawaii's households and businesses.

9           The legislature further finds that the department of  
10 education is also burdened with the high cost of electricity for  
11 electricity usage at its schools. The department of education's  
12 energy requirements and electricity bills are expected to  
13 increase as a result of, among other things, volatile oil  
14 prices, and the need to install heat abatement and air  
15 conditioning equipment in some schools to preserve and promote  
16 the health and safety of students and teachers and to foster a



1 better and more comfortable and productive learning environment  
2 in public schools.

3 The legislature additionally finds that the State has  
4 established an important policy goal of achieving a renewable  
5 portfolio standard of one hundred per cent by 2045 pursuant to  
6 Act 97, Session Laws of Hawaii 2015.

7 The legislature finds that the department of education has  
8 established a sustainability policy of achieving a clean energy  
9 goal of ninety per cent clean energy by 2040.

10 The legislature also finds that as Hawaii's electric  
11 systems evolve, energy districts and microgrids, can serve as an  
12 essential building block for Hawaii's utility of the future.  
13 Microgrids provide many benefits, including but not limited to  
14 being a secure and reliable power source when the main  
15 electrical grid is down, facilitating the integration of clean  
16 and renewable energy, helping institutions enhance their  
17 environmental standing and contributions, reducing grid  
18 congestion, balancing the electrical load, and localizing energy  
19 production.



1           The legislature further finds that schools are suitable  
2 environments for microgrids as the implementation of microgrids  
3 will further improve the reliability and resiliency of schools  
4 throughout the State. Microgrid systems will allow schools to  
5 serve communities by also acting as potential disaster response  
6 centers for civil defense, providing independent and secure  
7 facility power during extreme weather events that may cause  
8 grid-wide power outages, as two hundred fifteen out of two  
9 hundred fifty-six public schools are designated as possible  
10 hurricane shelters. Microgrids will also help to alleviate the  
11 high cost of electricity to department of education schools.

12           The legislature also finds that the department of  
13 education's Ka Hei program will integrate innovative energy  
14 technology with meaningful learning experiences, all while  
15 reducing energy costs. As a comprehensive energy and  
16 sustainability program, Ka Hei will transform the learning  
17 environment, reduce operational expenses, and provide engaging  
18 educational opportunities for our students and community.  
19 Through a combination of energy efficiency measures, clean  
20 energy generation, and a comprehensive sustainability program,



1 Ka Hei will improve the learning environment so students and  
2 teachers can perform at their best.

3 The legislature also finds that Ka Hei is a department of  
4 education program designed to boost student success through the  
5 implementation of renewable energy sources, campus  
6 modernization, and increased real-world educational  
7 opportunities in science, technology, engineering, and math  
8 (STEM). The Ka Hei educational enrichment program gives  
9 students the opportunity to develop twenty-first century STEM  
10 skills, which are a pre-requisite for a global economy, using  
11 construction projects as the springboard for learning. The  
12 robust Ka Hei program integrates construction projects into the  
13 existing curriculum and utilizes best practices to enhance STEM  
14 pedagogy including inquiry, hands-on, and project-based  
15 learning, while addressing existing standards in innovative  
16 ways. The Ka Hei program fosters students' intellectual  
17 curiosity and exposes them to future career opportunities.  
18 Hands-on, project-based learning experiences will engage  
19 students and provide real-world contexts for students'



1 understanding through the existing work being done at their  
2 school, their region, and the State.

3       The department of education is implementing its Ka Hei  
4 program in a public-private partnership with OpTerra Energy  
5 Services, which provides its technical design and integration  
6 expertise and utilizes existing procurement mechanisms and  
7 innovative financing to help reduce energy costs for the  
8 department of education by using a portion of energy cost  
9 savings to fund the Ka Hei program.

10       The legislature further finds that section 196-21(a),  
11 Hawaii Revised Statutes, requires state agencies to maximize  
12 their use of available alternative financing contracting  
13 mechanisms, including energy-savings contracts, when life-cycle  
14 cost-effective, to reduce energy use and cost in their  
15 facilities and operations.

16       The legislature also finds that section 196-21(b), Hawaii  
17 Revised Statutes, provides that state agencies that perform  
18 energy efficiency and renewable energy system retrofitting may  
19 continue to receive budget appropriations for energy  
20 expenditures at an amount that will not fall below the pre-



1 retrofitting energy budget but will rise in proportion to any  
2 increase in the agency's overall budget for the duration of the  
3 performance contract or project payment term. A portion of the  
4 moneys saved through efficiency and renewable energy system  
5 retrofitting shall be set aside to pay for any costs directly  
6 associated with administering energy efficiency and renewable  
7 energy system retrofitting programs incurred by the agency.

8       The legislature finds that a pilot microgrid project should  
9 be implemented to demonstrate the viability of such a project at  
10 a department of education school. Costs for similar future  
11 microgrid projects at other schools will likely decrease with  
12 the increased scale and advances in technology.

13       The legislature further finds that the department of  
14 education, through its Ka Hei program, should be authorized and  
15 required to implement an off-grid microgrid pilot project that  
16 is detached from any electric utility company's grid at a  
17 department of education school.

18       The purpose of this Act is to require the department of  
19 education to implement an off-grid, microgrid pilot program at a



1 school of the department of education's choosing through its Ka  
2 Hei program.

3 SECTION 2. Chapter 302A, Hawaii Revised Statutes, is  
4 amended by adding a new section to be appropriately designated  
5 and to read as follows:

6 "§302A- Off-grid microgrid pilot project. (a)

7 Notwithstanding any other law to the contrary, the department,  
8 through its Ka Hei program, shall establish and implement an  
9 off-grid microgrid pilot project at an appropriate school  
10 selected by the department in its discretion.

11 (b) No later than December 31, 2016, the department shall  
12 prepare plans for the off-grid microgrid pilot project,  
13 including the school selected, the schedule for implementation  
14 and installation, and any other relevant information required  
15 for the off-grid microgrid pilot project.

16 (c) Provided sufficient funding is made available by  
17 August 1, 2017, the department shall complete the installation  
18 and commence the operations and utilization of the off-grid  
19 microgrid pilot project by December 31, 2017.

20 (d) For purposes of this section, an "off-grid microgrid  
21 pilot project" means a group of interconnected loads and



1 distributed energy resources and backup energy generation  
2 resources within clearly defined electrical boundaries and  
3 within a department school that may operate as a contained  
4 controllable entity, is not inter-connected with the grid of an  
5 electric utility company or of any other party that is designed,  
6 and is intended to be operated by the department for a minimum  
7 of five years.

8 (e) Nothing in this section shall preclude the department  
9 from working with and receiving assistance from any other  
10 department or agency in carrying out the purposes of this  
11 section.

12 (f) Notwithstanding any law to the contrary, no electric  
13 utility company shall be allowed to assess a charge, fee, or  
14 penalty of any kind to the department for disconnecting from the  
15 grid of an electric public utility company.

16 (g) The department shall report on the status of the  
17 implementation of the off-grid microgrid pilot project, along  
18 with any proposed legislation, to the legislature no later than  
19 twenty days prior to the convening of the regular session of  
20 2017, and every regular session thereafter until completion of  
21 the pilot program."





1 SECTION 3. The department shall be required to maximize  
 2 its use of available public and private alternative financing  
 3 contracting mechanisms and available grants to fund the off-grid  
 4 pilot microgrid project, including but not limited to, financing  
 5 through green infrastructure bonds as provided in part X,  
 6 chapter 269, Hawaii Revised Statutes, and from the United States  
 7 Department of Energy and the United States Department of  
 8 Education; provided that if the department of education  
 9 determines that such funding is not adequate or feasible, the  
 10 department shall include in its report to the legislature prior  
 11 to the regular session of 2017 the department's funding  
 12 requirements for the off-grid microgrid pilot project and submit  
 13 an appropriate request for funding.

14 SECTION 4. New statutory material is underscored.

15 SECTION 5. This Act shall take effect on July 1, 2016.

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INTRODUCED BY:

Michelle Sedani

Mark  
[Signature]

[Signature]  
[Signature]

Lorraine R. Inoué



# S.B. NO. 2604

**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.

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