
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 further finds that Hawaii's electricity
6 customers continue to endure the highest electricity prices in
7 the 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 further finds that the department of
8 education has established a sustainability policy of achieving a
9 clean energy 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.

20 The legislature further finds that schools are suitable
21 environments for microgrids as the implementation of microgrids



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

11 The legislature also finds that Ka Hei is a department of
12 education program designed to boost student success through the
13 implementation of renewable energy sources, campus
14 modernization, and increased real-world educational
15 opportunities in science, technology, engineering, and math
16 (STEM). The Ka Hei educational enrichment program gives
17 students the opportunity to develop twenty-first century STEM
18 skills, which are a pre-requisite for a global economy, using
19 construction projects as the springboard for learning. The
20 robust Ka Hei program integrates construction projects into the
21 existing curriculum and utilizes best practices to enhance STEM



1 pedagogy including inquiry, hands-on, and project-based
2 learning, while addressing existing standards in innovative
3 ways. The Ka Hei program fosters students' intellectual
4 curiosity and exposes them to future career opportunities.
5 Hands-on, project-based learning experiences will engage
6 students and provide real-world contexts for students'
7 understanding through the existing work being done at their
8 school, their region, and the State.

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

20 The department of education is implementing its Ka Hei
21 program in a public-private partnership with OpTerra Energy



1 Services, which provides its technical design and integration
2 expertise and utilizes existing procurement mechanisms and
3 innovative financing to help reduce energy costs for the
4 department of education by using a portion of energy cost
5 savings to fund the Ka Hei program.

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

12 The legislature also finds that section 196-21(b), Hawaii
13 Revised Statutes, provides that state agencies that perform
14 energy efficiency and renewable energy system retrofitting may
15 continue to receive budget appropriations for energy
16 expenditures at an amount that will not fall below the pre-
17 retrofitting energy budget but will rise in proportion to any
18 increase in the agency's overall budget for the duration of the
19 performance contract or project payment term. A portion of the
20 moneys saved through efficiency and renewable energy system
21 retrofitting shall be set aside to pay for any costs directly



1 associated with administering energy efficiency and renewable
2 energy system retrofitting programs incurred by the agency.

3 The legislature further finds that a pilot microgrid
4 project should be implemented to demonstrate the viability of
5 such a project at a department of education school. Costs for
6 similar future microgrid projects at other schools will likely
7 decrease with the increased scale and advances in technology.

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

13 The purpose of this Act is to require the department of
14 education to implement an off-grid microgrid pilot project at a
15 school of the department of education's choosing through its Ka
16 Hei program.

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

20 "§302A- Off-grid microgrid pilot project. (a)
21 Notwithstanding any other law to the contrary, the department,

1 through its Ka Hei program, shall establish and implement an
2 off-grid microgrid pilot project at an appropriate school
3 selected by the department in its discretion.

4 (b) No later than December 31, 2016, the department shall
5 prepare plans for the off-grid microgrid pilot project,
6 including the school selected, the schedule for implementation
7 and installation, and any other relevant information required
8 for the off-grid microgrid pilot project.

9 (c) The department shall complete the installation and
10 commence the operations and utilization of the off-grid
11 microgrid pilot project by December 31, 2017; provided that
12 sufficient funding is made available by August 1, 2017.

13 (d) Nothing in this section shall preclude the department
14 from working with and receiving assistance from any other
15 department or agency in carrying out the purposes of this
16 section.

17 (e) Notwithstanding any law to the contrary, no electric
18 utility company shall be allowed to assess a charge, fee, or
19 penalty of any kind to the department for disconnecting from the
20 grid of the electric utility company.



1 (f) For purposes of this section, an "off-grid microgrid
2 pilot project" means a group of interconnected loads and
3 distributed energy resources and backup energy generation
4 resources within clearly defined electrical boundaries and
5 within a department school that may operate as a contained
6 controllable entity, is not inter-connected with the grid of an
7 electric utility company or of any other party, and that is
8 designed and intended to be operated by the department for a
9 minimum of five years.

10 (g) The department shall report on the status of the
11 implementation of the off-grid microgrid pilot project, along
12 with any proposed legislation, to the legislature no later than
13 twenty days prior to:

- 14 (1) The convening of the regular session of 2017; and
15 (2) The convening of every regular session thereafter
16 until completion of the pilot project."

17 SECTION 3. The department of education shall be required
18 to maximize its use of available public and private alternative
19 financing contracting mechanisms and available grants to fund
20 the off-grid microgrid pilot project, including but not limited
21 to financing through green infrastructure bonds as provided in



1 part X, chapter 269, Hawaii Revised Statutes, and from the
2 United States Department of Energy and the United States
3 Department of Education; provided that if the department of
4 education determines that such funding is not adequate or
5 feasible, the department shall include in its report to the
6 legislature prior to the regular session of 2017 the
7 department's funding requirements for the off-grid microgrid
8 pilot project and submit an appropriate request for funding.

9 SECTION 4. New statutory material is underscored.

10 SECTION 5. This Act shall take effect on July 1, 2030.



Report Title:

Off-grid 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. (SB2604 HD1)

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not legislation or evidence of legislative intent.*

