
A BILL FOR AN ACT

RELATING TO PUBLIC SCHOOLS.

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

1 SECTION 1. This Act is recommended by the governor for
2 immediate passage in accordance with section 9 of article VII of
3 the Constitution of the State of Hawaii.

4 PART I

5 SECTION 2. The legislature finds that the current governor
6 has pledged to address the challenges facing Hawaii's
7 classrooms, including soaring temperatures, outdated
8 infrastructure, and costly electric bills throughout the State.

9 The legislature also finds that the University of Hawaii is
10 progressing toward becoming energy net-zero by producing as much
11 renewable energy as the system consumes by 2035. This progress
12 will reduce the university's energy costs, contribute to
13 Hawaii's clean energy goals, and make better use of limited
14 resources. A similar opportunity to save on long-term energy
15 costs and maximize limited resources exists in Hawaii's
16 elementary, middle, and high schools. The department of
17 education spends approximately \$48,000,000 annually for



1 electricity. By implementing a program similar to the
2 university program, the large sum of money used for utility
3 services could be redirected broadly on projects that will
4 improve the learning environment, such as cooling solutions,
5 better learning tools for students, enriching sports, arts, and
6 extracurricular programs, and increasing pay to hire and retain
7 better teachers.

8 Temperatures in Hawaii's kindergarten through grade twelve
9 classrooms can reach over one hundred degrees Fahrenheit, far
10 exceeding the ideal conditions in which children and teachers
11 are effectively able to perform. Reducing temperatures in hot
12 classrooms is critical to increasing student learning. A recent
13 peer-reviewed study by the Harvard School of Public Health, "The
14 Impact of Green Buildings on Cognitive Function," found that
15 cognitive scores were over one hundred per cent higher in
16 enhanced green building conditions with adequate ventilation,
17 that lowered carbon dioxide levels and provided a comfortable
18 indoor environment. Other recent studies have shown increases
19 in cognitive function and student performance in classrooms with
20 daytime light emitting diode lighting over traditional
21 fluorescent or incandescent lighting.



1 Installing more efficient lighting, natural ventilation,
2 and integrating innovative renewable technologies such as solar
3 panels and batteries can help power schools, reduce electricity
4 costs, and improve student performance. Powering new classroom
5 air conditioning units with solar panels and batteries without
6 the need to connect to the electric grid can also reduce costs
7 by eliminating the need for costly campus electrical upgrades,
8 and will not add significant new costs to public school electric
9 bills.

10 Although the department of education previously estimated
11 that it would cost over \$30,000 to air condition a single
12 classroom, pilot projects installing cheaper solar-powered air
13 conditioning solutions have demonstrated that installation can
14 cost less than \$8,000 per classroom. In fact, traditional air
15 conditioning installations at schools such as Pohakea Elementary
16 School have more than doubled the school's utility bill.
17 Therefore, the legislature finds that it is in the public's
18 interest to maximize the use of effective renewable technologies
19 to reduce air conditioning installation and operating costs.

20 The purpose of this part is to accelerate the goals of the
21 department of education to cool Hawaii's schools, reduce energy



1 costs, meet Hawaii's clean energy goals, and provide all
2 students with better classrooms in which to learn.

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

6 "§302A- Sustainable schools initiative. (a) The
7 department shall establish a goal of becoming net-zero with
8 respect to energy use, producing as much renewable energy as the
9 department consumes across all public school facilities, by
10 January 1, 2035.

11 (b) The department shall use the amount and value of
12 energy consumed by the department across all public school
13 facilities during the 2015-2016 fiscal year as the benchmark for
14 measuring the department's progress toward the energy usage goal
15 set forth in subsection (a).

16 (c) The department shall submit an annual report to the
17 legislature no later than twenty days before the convening of
18 each regular session. The annual report shall include
19 information about:

20 (1) Overall progress toward the net-zero energy goal set
21 forth in subsection (a); and



1 (2) Plans and recommendations to advance the net-zero
2 energy goal set forth in subsection (a)."

3 SECTION 4. (a) In each county, the department of
4 education shall establish a minimum of one microgrid pilot
5 project at a public school that also serves as an emergency
6 shelter to allow for continued operations even during the
7 failure of the larger electric grid during a natural disaster.

8 (b) Each pilot project shall provide power for campus
9 facilities and be capable of operation without reliance on the
10 existing electric grid.

11 (c) The department of education, in conjunction with the:

12 (1) Hawaii natural energy institute at the University of
13 Hawaii at Manoa;

14 (2) Hawaii state energy office; and

15 (3) The administrator or director of the county emergency
16 management agency affected,

17 shall examine the pilot projects, and identify how to maximize
18 microgrid inclusion at all department of education public school
19 facilities which also serve as emergency shelters.

20 (d) The department of education shall report its findings
21 and recommendations, including any proposed legislation, to the



1 legislature no later than twenty days prior to the convening of
2 the regular session of 2018.

3 PART II

4 SECTION 5. (a) The department of education shall expedite
5 the cooling of all public school classrooms to a temperature
6 acceptable for student learning.

7 (b) To ensure minimal increase in electric costs,
8 classroom cooling and efficiency measures implemented pursuant
9 to this Act shall be planned so as not to increase the annual
10 aggregate metered energy consumption of all public schools more
11 than ten per cent above the annual aggregate metered energy
12 consumption of all public schools in the fiscal year prior to
13 this Act.

14 (c) The department of education shall submit a report to
15 the legislature about the implementation of measures taken to
16 cool public school classrooms. The report shall include the
17 following information:

18 (1) The number of completed classrooms that cooling
19 measures were implemented in and number of classrooms
20 that still require cooling;

21 (2) The different types of cooling measures implemented;



- 1 (3) The approximate costs per classroom for planned
2 cooling measures, including installation, upgrades,
3 equipment, maintenance, and projected operating costs
4 over the life of the installation;
- 5 (4) The approximate cost per completed classroom for
6 cooling measures implemented, including installation,
7 equipment, maintenance, and projected operating costs
8 over the life of the installation;
- 9 (5) The number of completed classrooms that energy
10 efficiency measures were implemented in and the number
11 of classrooms that still require energy efficiency
12 measures;
- 13 (6) The different types of energy efficiency measures
14 implemented;
- 15 (7) The approximate cost and savings per classroom for
16 planned energy efficiency measures, including
17 installation, upgrades, equipment, maintenance, and
18 projected operating costs over the life of the
19 installation; and
- 20 (8) The approximate cost and savings per completed
21 classroom for energy efficiency measures implemented,



1 including installation, equipment, maintenance, and
2 projected operating costs over the life of the
3 installation.

4 (d) The department of education shall report its findings
5 and recommendations, including any proposed legislation, to the
6 legislature no later than twenty days prior to the convening of
7 each regular session following a year in which the department of
8 education expends general obligation bond moneys authorized by
9 this Act for the purpose of cooling classrooms.

10 PART III

11 SECTION 6. There is appropriated out of the Hawaii green
12 infrastructure special fund the sum of \$ or so much
13 thereof as may be necessary for fiscal year 2015-2016 to loan
14 the moneys to the department of education and department of
15 budget and finance.

16 The sum appropriated shall be expended by the department of
17 business, economic development, and tourism for the purposes of
18 maximizing the energy efficiency of all schools as allowed under
19 section 196-65(b), Hawaii Revised Statutes.

20 SECTION 7. The department of education and department of
21 budget and finance, with the approval of the governor, are



1 authorized to borrow the sum of \$ or so much thereof as
2 may be necessary for fiscal year 2015-2016 from the green
3 infrastructure loan program for capital improvement program
4 equipment and installation costs for air conditioning, energy-
5 efficient lighting, and other energy-efficiency measures related
6 to heat abatement at public schools as allowed under section
7 196-65(b), Hawaii Revised Statutes; provided that the loan shall
8 be repaid from the savings realized from the reduction in energy
9 consumption as a result of efficiency measures funded by this
10 section. The sum of \$ or so much thereof as may be
11 necessary is appropriated out of other funds for fiscal year
12 2015-2016 to allow expenditure of the funds for such purpose.

13 The sums appropriated shall be expended by the department
14 of education for the purposes of this part.

15 SECTION 8. The sum of \$ or so much thereof as may
16 be necessary for fiscal year 2015-2016 in general obligation
17 bond funds is appropriated for capital improvement program
18 equipment and installation costs for air conditioning, other
19 heat abatement measures, energy-efficient lighting, and other
20 energy-efficiency measures related to heat abatement at public
21 schools.



Report Title:

Department of Education; Net-Zero Energy Use; Classrooms;
Cooling; Energy; Microgrids; General Obligation Bonds;
Appropriations; Hawaii Green Infrastructure Loan Program

Description:

Requires the Department of Education to: (1) Establish a goal of becoming net-zero with respect to energy use by January 1, 2035; (2) Establish microgrid pilot projects at public schools that also serve as emergency shelters; and (3) Expedite the cooling of all public school classrooms. Lends funds for energy efficiency in schools. Authorizes the issuance of general obligation bonds and the use of funds from the Green Infrastructure Loan Program to implement cooling measures in public school classrooms. (SB3126 HD2)

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