
A BILL FOR AN ACT

RELATING TO ENERGY.

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

1

PART I

2 SECTION 1. The legislature finds that the current governor
3 has pledged to address the challenges facing Hawaii's
4 classrooms, including soaring temperatures, outdated
5 infrastructure, and costly electric bills throughout the State.

6 The legislature also finds that the University of Hawaii is
7 progressing toward becoming energy net-zero by producing as much
8 renewable energy as the system consumes by 2035. This progress
9 will reduce the university's energy costs, contribute to
10 Hawaii's clean energy goals, and make better use of limited
11 resources. A similar opportunity to save on long-term energy
12 costs and maximize limited resources exists in Hawaii's
13 elementary, middle, and high schools. The department of
14 education spends approximately \$62,000,000 annually for
15 electricity, gas, and water services. By implementing a program
16 similar to the university program, the large sum of money used
17 for utility services could be redirected broadly on projects



1 that will improve the learning environment, such as cooling
2 solutions, better learning tools for students, enriching sports,
3 arts, and extracurricular programs, and increasing pay to hire
4 and retain better teachers.

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

19 Installing more efficient lighting, natural ventilation,
20 and integrating innovative renewable technologies such as solar
21 panels and batteries can help power schools, reduce electricity



1 costs, and improve student performance. Powering new classroom
2 air conditioning units with solar panels and batteries without
3 the need to connect to the electric grid can also reduce costs
4 by eliminating the need for costly campus electrical upgrades,
5 and will not add significant new costs to public school electric
6 bills.

7 Although the department of education previously estimated
8 that it would cost over \$30,000 to air condition a single
9 classroom, pilot projects installing cheaper solar-powered air
10 conditioning solutions have demonstrated that installation can
11 cost less than \$8,000 per classroom. The legislature finds that
12 it is in the public's interest to maximize the use of effective
13 innovative technologies to reduce installation and operating
14 costs.

15 The purpose of this part is to accelerate the goals of the
16 department of education to cool Hawaii's schools, reduce energy
17 costs, meet Hawaii's clean energy goals, and provide all
18 students with better classrooms in which to learn.

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



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

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

11 (c) The department shall submit an annual report to the
 12 legislature no later than twenty days before the convening of
 13 each regular session. The annual report shall include
 14 information about:

- 15 (1) Overall progress toward the net-zero energy goal set
- 16 forth in subsection (a); and
- 17 (2) Plans and recommendations to advance the net-zero
- 18 energy goal set forth in subsection (a)."

19 SECTION 3. (a) In each county, the department of
 20 education shall establish a minimum of one microgrid pilot
 21 project at public schools that also serve as emergency shelters.



1 (b) Each pilot project shall provide power for the
2 operations of campus facilities and be capable of operation
3 without reliance on the existing electric grid.

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

5 (1) Hawaii natural energy institute at the University of
6 Hawaii at Manoa;

7 (2) Hawaii state energy office; and

8 (3) The administrator or director of the county emergency
9 management agency affected,

10 shall examine the pilot projects, and identify how to maximize
11 microgrid inclusion at all department of education public
12 schools.

13 (d) The department of education shall report its findings
14 and recommendations, including any proposed legislation, to the
15 legislature no later than twenty days prior to the convening of
16 the regular session of 2018.

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

20 (b) When implementing classroom cooling measures, the
21 department, and any contractor hired to implement classroom



1 cooling measures, shall maximize energy efficiency, and
2 installation and operating costs savings over the entire life of
3 the project.

4 (c) The department of education shall submit a report to
5 the legislature about the implementation of measures taken to
6 cool public school classrooms. The report shall include the
7 following information:

- 8 (1) The number of classrooms that cooling measures were
9 implemented in and that still require cooling;
- 10 (2) The different types of cooling measures implemented;
- 11 (3) Costs per school for each type of planned cooling
12 measure, including installation, upgrades, equipment,
13 maintenance, and projected operating costs; and
- 14 (4) Actual costs per school for each cooling measure
15 implemented, including installation, equipment,
16 maintenance, and operating costs.

17 (d) The department of education shall report its findings
18 and recommendations, including any proposed legislation, to the
19 legislature no later than twenty days prior to the convening of
20 each regular session following a year in which the department of



1 education expends general obligation bond moneys authorized by
2 this Act for the purpose of cooling classrooms.

3 PART II

4 SECTION 5. This part is recommended by the governor for
5 immediate passage in accordance with section 9 of article VII of
6 the Hawaii State Constitution.

7 SECTION 6. There is appropriated out of the Hawaii green
8 infrastructure special fund the sum of \$100,000,000 or so much
9 thereof as may be necessary for fiscal year 2015-2016 and to
10 loan such moneys to the department of education and department
11 of budget and finance.

12 The sum appropriated shall be expended by the department of
13 business, economic development, and tourism for the purposes of
14 this Act.

15 SECTION 7. The department of education and department of
16 budget and finance, with the approval of the governor, are
17 authorized to borrow the sum of \$100,000,000 or so much thereof
18 as may be necessary for fiscal year 2015-2016 from the green
19 infrastructure loan program for capital improvement program
20 equipment and installation costs for air conditioning, energy-
21 efficient lighting, and other energy-efficiency measures related



1 to heat abatement at public schools. The sum of \$100,000,000 or
2 so much thereof as may be necessary is appropriated out of other
3 funds for fiscal year 2015-2016 to allow expenditure of the
4 funds for such purpose.

5 The sums appropriated shall be expended by the department
6 of education for the purposes of this Act.

7 SECTION 8. There is appropriated out of the general
8 revenues of the State of Hawaii the sum of \$7,000,000 or so much
9 thereof as may be necessary for fiscal year 2016-2017 for the
10 initial loan repayment for the moneys borrowed from the green
11 infrastructure loan program by the department of education and
12 department of budget and finance.

13 The sum appropriated shall be expended by the department of
14 budget and finance for the purposes of this Act.

15 SECTION 9. The sum of \$30,000,000 or so much thereof as
16 may 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.



1 The sum appropriated shall be expended by the department of
2 education for the purposes of this Act.

3 SECTION 10. Funds appropriated or authorized by this Act
4 that are not expended or encumbered by June 30, 2018, shall
5 lapse as of that date; provided that funds appropriated or
6 authorized by section 11 of this Act not expended or encumbered
7 by June 30, 2017, shall lapse as of that date.

8 SECTION 11. New statutory material is underscored.

9 SECTION 12. This Act shall take effect upon its approval;
10 provided that section 8 shall take effect on July 1, 2016.



Report Title:

Department of Education; Net-Zero Energy Use; Classrooms;
Cooling; Energy; Microgrids; General Obligation Bonds;
Appropriation

Description:

Requires DOE 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. 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. (HB2569 HD1)

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