
A BILL FOR AN ACT

RELATING TO ENERGY.

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

1 SECTION 1. The legislature finds that the current governor
2 has pledged to address the challenges facing Hawaii's
3 classrooms, including soaring temperatures, outdated
4 infrastructure, and costly electric bills throughout the State.
5 The legislature also finds that the University of Hawaii is
6 progressing toward becoming energy net-zero by producing as much
7 renewable energy as the system consumes by 2035. This progress
8 will reduce the university's energy costs, contribute to
9 Hawaii's clean energy goals, and make better use of limited
10 resources. A similar opportunity to save on long-term energy
11 costs and maximize limited resources exists in Hawaii's
12 elementary, middle, and high schools. The department of
13 education spends approximately \$62,000,000 annually for
14 electricity, gas, and water services. By implementing a program
15 similar to the university program, the large sum of money used
16 for utility services could be redirected broadly on projects
17 that will improve the learning environment, such as cooling



1 solutions, better learning tools for students, enriching sports,
2 arts, and extracurricular programs, and increasing pay to hire
3 and retain better teachers.

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

18 The legislature finds that installing more efficient
19 lighting, natural ventilation, and integrating innovative
20 renewable technologies such as solar panels and batteries can
21 help power schools, reduce electricity costs, and improve



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

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

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

18 SECTION 2. Chapter 302A, Hawaii Revised Statutes, is
19 amended by adding a new section to part VI to be appropriately
20 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) The department of education shall
20 establish a minimum of two microgrid pilot projects at public
21 schools that are also civil defense 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) State civil defense,

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

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

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

19 (b) When implementing classroom cooling measures, the
20 department, and any contractor hired to implement classroom
21 cooling measures, shall maximize energy efficiency, and



1 installing and operating costs savings over the entire life of
2 the project.

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

7 (1) The number of classrooms that cooling measures were
8 implemented in and that still require cooling;

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

10 (3) Costs per classroom for each type of planned cooling
11 measure, including installation, upgrades, equipment,
12 maintenance, and projected operating costs; and

13 (4) Actual costs per classroom for each cooling measure
14 implemented, including installation, equipment,
15 maintenance, and operating costs.

16 (d) The department of education shall report its findings
17 and recommendations, including any proposed legislation, to the
18 legislature no later than twenty days prior to the convening of
19 each regular session following a year that the department of
20 education expends general obligation bond moneys authorized by
21 this Act for the purpose of cooling classrooms.



1 SECTION 5. The director of finance is authorized to issue
 2 general obligation bonds in the sum of \$ or so much
 3 thereof as may be necessary and the same sum or so much thereof
 4 as may be necessary is appropriated for fiscal year 2016-2017
 5 for the purpose of implementing cooling measures in public
 6 school classrooms.

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

9 SECTION 6. The appropriation made for the capital
 10 improvement project authorized by section 5 of this Act shall
 11 not lapse at the end of the fiscal biennium for which the
 12 appropriation is made; provided that all moneys from the
 13 appropriation unencumbered as of June 30, 2018, shall lapse as
 14 of that date.

15 SECTION 7. New statutory material is underscored.

16 SECTION 8. This Act shall take effect upon its approval;
 17 provided that sections 5 and 6 shall take effect on July 1,
 18 2016.

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H.B. NO. 2569

Report Title:

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

Description:

Requires the DOE to: (1) establish a goal of becoming net-zero with respect to energy use by 1/1/2035; (2) establish microgrid pilot projects at two public schools that are civil defense shelters; and (3) expedite the cooling of all public school classrooms to a temperature acceptable for student learning. Authorizes the issuance of general obligation bonds for the implementation of cooling measures in public school classrooms.

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