HOUSE OF REPRESENTATIVES
THIRTIETH LEGISLATURE, 2019
STATE OF HAWAII

H.B. NO. 1583 H.D. 2 S.D. 1

A BILL FOR AN ACT

RELATING TO ELECTRIC GRID RESILIENCY.

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

SECTION 1. The legislature finds that Hawaii's residents, businesses, and government are vulnerable to disruptions in the State's energy systems caused by extreme weather events or other disasters. In 2017, Puerto Rico was devastated by Hurricane Maria, leaving a majority of the island's residents without power for months after the storm made landfall.

The legislature further finds that, if a disaster of similar magnitude impacted Hawaii, having some shelters and other critical infrastructure facilities equipped to continue to provide backup power independent of the electric grid while recovery efforts are underway will greatly increase disaster preparedness.

In many areas of Hawaii, public school structures have also served as designated shelters during hurricane warnings and other disaster events. In 2016, as part of an effort to air condition more schools while keeping utility bills in check, the legislature created a goal for the State's public schools to

become net-zero in regards to energy use by the year 2035. Following this, many schools have begun to install renewable energy systems in order to meet this goal. However, the department of education has no directive or incentive to install systems that are sized or designed to both meet the daily electricity needs of a school during normal operations and to function as a backup power system for a disaster shelter that can operate independently from the grid.

Furthermore, the Hawaii emergency management agency has identified approximately nine hundred critical facilities across the State, many of which have backup electrical generation systems powered by fossil fuels. Some of these critical facilities are evaluating or procuring renewable energy systems to offset their electricity costs and to support Hawaii's renewable energy transition. Renewable energy systems, if intentionally configured as part of a microgrid, may also be able to offset some or all of the backup power generation requirement and reduce the associated capital and operating costs. Although there is an additional cost associated with the installation of such a system, it may also provide ancillary service and resiliency value to the utility and its customers.

However, the legislature finds that the ability of public agencies and procurement officials to evaluate the feasibility and cost-benefit of renewable energy microgrids is limited. Developing the technical capacity to perform such analyses improves the State's resiliency to disasters, and the Hawaii state energy office, which provides technical analysis and support services for public evaluation and deployment of energy efficiency and renewable energy technology, is well positioned to develop the necessary expertise in microgrids. Additionally, the public utilities commission is currently evaluating the value of such systems in its microgrid services docket, and public agency microgrid evaluations could inform that proceeding and support the deployment of renewable and resilient energy systems across the State.

Therefore, the legislature finds that it will be beneficial to the resiliency of Hawaii's shelters and critical facilities to improve the ability of public agencies to evaluate such systems and that the Hawaii state energy office should develop such expertise and support capacity. The legislature also finds that public-private partnerships and emerging energy-as-a-service financing frameworks may facilitate the evaluation,

development, adoption, and operation of such microgrids. The legislature further finds that the lessons learned from these evaluations should inform the public utilities commission microgrid services docket.

Accordingly, the purpose of this Act is to:

(1) Authorize the department of education to evaluate the feasibility and cost-benefit of a renewable energy system to provide backup power in the event of a natural disaster or other similar emergency;

(2) Authorize the department of transportation to evaluate the feasibility and cost-benefit of a renewable energy microgrid system to provide backup power in the event of a natural disaster or other similar emergency at one facility;

(3) Authorize the natural energy laboratory of Hawaii authority to evaluate the feasibility and cost-benefit of a renewable energy microgrid system to provide backup power in the event of a natural disaster or other similar emergency; and

(4) Require the public utilities commission to incorporate findings from public agency microgrid evaluations into

its microgrid service docket and consider ways to incentivize the installation in public facilities of renewable energy systems that can provide backup power in the event the broader electric grid cannot provide power.

SECTION 2. Chapter 227D, Hawaii Revised Statutes, is amended by adding a new section to be appropriately designated and to read as follows:

"**§227D- Microgrid demonstration project.** (a) The natural energy laboratory of Hawaii authority is authorized to establish a microgrid demonstration project.

(b) The authority shall plan, design, and implement a microgrid, with the support of public and private sector partners if necessary, on property controlled by the authority.

(c) The authority shall submit a report of the planning, design, and implementation of the microgrid demonstration project to the legislature and the Hawaii state energy office upon completion of the project."

SECTION 3. Section 302A-1510, Hawaii Revised Statutes, is amended to read as follows:

"[~~§~~] §302A-1510 [~~§~~] **Sustainable schools initiative.** (a) The department shall establish a goal of becoming net-zero with respect to energy use, producing as much renewable energy as the department consumes across all public school facilities, by January 1, 2035.

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

(c) The department shall submit an annual report that shall include information on:

(1) The overall progress toward the net-zero energy goal set forth in subsection (a);

(2) Its plans and recommendations to advance the net-zero energy goal set forth in subsection (a); and

(3) Any challenges or barriers encountered or anticipated by the department in meeting the net-zero energy goal set forth in subsection (a).

(d) The department shall expedite the cooling of all public school classrooms to a temperature acceptable for student

learning. When implementing classroom cooling measures, the department, and any contractor hired to implement classroom cooling measures, shall maximize energy efficiency and installation and operating cost savings over the entire life of the project.

(e) Pursuant to this section, the department shall include in the report the status of the implementation of measures taken to cool public school classrooms as required by subsection (d). The report shall include the following information:

(1) The number of completed classrooms in which cooling measures were implemented and the number of classrooms remaining that require cooling;

(2) The different types of cooling measures implemented;

(3) The approximate cost per classroom for planned cooling measures, including installation, upgrades, equipment, maintenance, and projected operating costs over the life of the installed cooling measures;

(4) The approximate cost per completed classroom for cooling measures implemented, including installation, upgrades, equipment, maintenance, and projected

operating costs over the life of the installed cooling measures;

(5) The number of completed classrooms in which energy efficiency measures were installed or implemented and the number of classrooms remaining that require energy efficiency measures; and

(6) The different types of energy efficiency measures installed or implemented.

(f) The department may, with the support of public and private sector partners as necessary, evaluate the feasibility and cost-benefit of establishing and implementing a pilot microgrid in at least one facility in which the facility is provided with a renewable energy system that is capable of providing backup electrical power in the event that the electric grid cannot provide power. The department may select a facility that is likely to be designated as an emergency shelter in the event of a natural disaster. In selecting the renewable energy system, the department shall consider, among other things, a system's capacity for generating and providing energy to the electric grid over the lifetime of the system.

[~~(f)~~] (g) The department shall report its findings and recommendations, including any proposed legislation, to the legislature no later than twenty days prior to the convening of each regular session."

SECTION 4. (a) The department of transportation is recognized as operating several critical infrastructure facilities with the potential to host renewable energy systems that, if configured as a microgrid, could provide backup power and integrate with and supplement existing standby generators.

(b) The department of transportation is authorized to, with the support of public and private sector partners such as the National Renewable Energy Laboratory if necessary, perform a microgrid feasibility and cost-benefit analysis at an appropriate facility with an existing or proposed renewable energy system that is capable of providing backup electrical power in the event that the electric grid cannot provide power.

(c) The department of transportation shall report its findings to the legislature and the Hawaii state energy office upon completion of the microgrid feasibility and cost-benefit analysis, and may include within the report an estimated funding

request for further analysis or the incremental cost of microgrid development.

SECTION 5. The public utilities commission, in coordination with the Hawaii state energy office, shall incorporate findings and data from public facility microgrid evaluations and pilots authorized by this Act into the microgrid services docket with consideration for, at minimum:

(1) The microgrid and critical backup power analysis methodology;

(2) The economic value of resiliency;

(3) Microgrid deployment barriers; and

(4) Ways to incentivize the installation in public facilities of renewable energy systems that can provide backup power in the event the broader electric grid cannot provide power in its current and ongoing proceedings.

SECTION 6. Statutory material to be repealed is bracketed and stricken. New statutory material is underscored.

SECTION 7. This Act shall take effect on July 1, 2050.

H.B. NO. 1583 H.D. 2 S.D. 1

Report Title:
DOE; PUC; DOT; NELHA; Electric Grid; Renewable Energy; Sustainable Schools Initiative; Microgrids; Feasibility Analysis

Description:
Authorizes the Department of Education to evaluate the feasibility and cost-benefit of a renewable energy system to provide backup power in the event of a natural disaster or other similar emergency. Authorizes the Department of Transportation to evaluate the feasibility and cost-benefit of a renewable energy microgrid system to provide backup power in the event of a natural disaster or other similar emergency at one facility. Authorizes the Natural Energy Laboratory of Hawaii Authority to evaluate the feasibility and cost-benefit of a renewable energy microgrid system to provide backup power in the event of a natural disaster or other similar emergency. Requires the Public Utilities Commission to incorporate findings from public agency microgrid evaluations into its microgrid service docket and consider ways to incentivize the installation in public facilities of renewable energy systems that can provide backup power in the event the broader electric grid cannot provide power. Effective 7/1/2050. (SD1)

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