A BILL FOR AN ACT

RELATING TO ELECTRIC GRID RESILIENCY.

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

SECTION 1. Chapter 46, Hawaii Revised Statutes, is amended by adding two new sections to be appropriately designated and to read as follows:

"§46- Identification of critical infrastructure. The State shall ensure that there is an adequate supply of critical infrastructure in the State and that critical infrastructure can continue operations in service of the public following a natural disaster. The counties, in coordination with the department of business, economic development, and tourism, shall be responsible for the implementation of this section in a manner consistent with this chapter. Each county, in coordination with the department of business, economic development, and tourism, shall, within one year of the effective date of Act , Session Laws of Hawaii 2019:

(1) Develop a comprehensive list of critical infrastructure in this State. Such comprehensive list shall include:
(A) The name and address of each critical infrastructure location;

(B) The name, telephone number, and email address of at least one individual employed at the critical infrastructure location in a supervisory role;

(C) The estimated capacity of each designated emergency shelter, stated as the number of individuals who could feasibly take refuge at the designated emergency shelter during a natural disaster or state of emergency; and

(D) The estimated critical load of each critical infrastructure location;

(2) Determine, with respect to each critical infrastructure location, the estimated number of hours that the designated emergency shelter will be able to continue operations following a natural disaster or during a state of emergency. Such determination shall consider:

(A) Each critical infrastructure location's capability to store or access adequate food, water, and medical supplies to serve the local
community that may be expected to rely on the critical infrastructure following a natural disaster or during a state of emergency;

(B) With respect to each designated emergency shelter, the capability to store or access adequate food, water, and medical supplies to serve the estimated number of individuals who can feasibly take refuge at the designated emergency shelter following a natural disaster or during a state of emergency; and

(C) Whether each critical infrastructure location has sufficient access to a source of backup electricity such that it will be capable of supplying its critical load during an electrical grid outage without significant interruption; and

(3) Develop, with respect to each critical infrastructure location, a list of improvements that the department, in coordination with the counties, considers reasonably necessary to ensure that each critical infrastructure location can continue operations following a natural disaster or during a state of
emergency. Such list of improvements shall include, as applicable:

(A) Food and water storage equipment;

(B) Medical supplies and equipment to store perishable medical supplies; and

(C) Grid resiliency improvements; provided that any electricity generation technology used in such grid resiliency improvements shall be consistent with the renewable portfolio standards established pursuant to section 269-92.

§46- Critical infrastructure access to electricity. (a) The State shall ensure that critical infrastructure locations in the State have access to adequate supplies of electricity after natural disasters and during states of emergency. The counties, in coordination with the department of business, economic development, and tourism, shall be responsible for the implementation of this section in a manner consistent with this chapter. Each county, in coordination with the department of business, economic development, and tourism, shall, within one year of the effective date of Act , Session Laws of Hawaii 2019, develop a plan to ensure that each critical infrastructure
1 location has access to electricity after natural disasters and
during states of emergency. Such plan shall:

(1) Recommend grid resiliency improvements for each
critical infrastructure location; provided that any
electricity generation technology used in such grid
resiliency improvements shall be consistent with the
renewable portfolio standards established pursuant to
section 269-92;

(2) Consider potential cost savings that may result from
the use of grid resiliency improvements at critical
infrastructure locations to supply both the critical
infrastructure location's daily electricity needs or a
portion of such daily electricity needs in addition to
supplying the critical infrastructure's critical load
after a natural disaster or during a state of
emergency; and

(3) Consider and account for the increasing use and
importance of electricity in the fields of
transportation, communications, and medicine and each
of these field's importance to responding to natural
disasters and states of emergency.
(b) For a county with an electrically isolated community, the county shall, in coordination with the department of business, economic development, and tourism, within one year of the effective date of Act , Session Laws of Hawaii 2019, develop recommendations for measures to ensure access to electricity in the electrically isolated community after natural disasters and during states of emergency. Such plan shall:

(1) Include a brief statement explaining the reasons that the county is an electrically isolated community; and

(2) Recommend specific grid resiliency improvements that would allow the electrically isolated community to have access to electricity in the event of a prolonged outage of the electrical grid after natural disasters and during states of emergency.

The county shall only recommend measures that are consistent with the renewable portfolio standards established pursuant to section 269-92.

The county shall consider measures capable of supplying both the critical loads of critical infrastructure in the electrically isolated community as well as other loads in the electrically isolated community."
SECTION 2. Section 196-2, Hawaii Revised Statutes, is amended by adding six new definitions to be appropriately inserted and to read as follows:

"Battery storage device" means any identifiable facility, equipment, or apparatus that:

(1) Is electrically connected to a critical infrastructure's critical load and paired with a new or existing renewable generation system;

(2) Stores electricity from its paired renewable generation system via a chemical or mechanical process;

(3) Delivers stored energy at a later time to the critical infrastructure's critical load, an electric utility, or the Hawaii electric system; and

(4) Has a storage capacity capable of supplying:

(A) A critical infrastructure's critical load for a minimum of forty-eight hours; or

(B) The total of a critical infrastructure's average daily usage for a minimum of five hours.

"Critical infrastructure" means police stations, fire stations, hospitals, nursing homes, designated emergency
shelters, and such other critical infrastructure that may be designated as such by the governor or other authorized official pursuant to a natural disaster or state of emergency designation. Critical infrastructure may include privately owned property.

"Critical load" means the minimum load necessary for any critical infrastructure to perform its essential functions during a natural disaster or state of emergency.

"Designated emergency shelter" means any building, owned by the State, a county, or a municipal government agency, that has been designated by appropriate authorities as a place of community refuge made available to provide temporary shelter and housing to citizens during any natural disaster or state of emergency as declared by the governor or other authorized official.

"Electrically isolated community" means a rural or remote community vulnerable to prolonged outages because the community is served by a single distribution or transmission line, is located in or surrounded by mountainous or other isolating terrain, or has historically experienced frequent or prolonged outages. For purposes of this definition, a prolonged outage is
any outage of the electrical grid lasting forty-eight hours or longer.

"Grid resiliency" means the installation and operation of electric equipment that:

(1) Prevents or reduces the severity of damage to the electric grid from a natural disaster or state of emergency;

(2) Enables faster recovery of normal grid operations after a grid outage due to a natural disaster or state of emergency;

(3) Maintains critical loads at critical infrastructure during a grid outage due to a natural disaster or state of emergency; and

(4) May include, without limitation, distributed energy resources, battery storage devices, and microgrid projects as that term is defined in section 269-46."

SECTION 3. Chapter 196, Hawaii Revised Statutes, is amended by adding two new sections to be appropriately designated and to read as follows:

"§196- Identification of critical infrastructure. The State shall ensure that there is an adequate supply of critical
infrastructure in the State and that critical infrastructure can continue operations in service of the public following a natural disaster. The department of business, economic development and tourism, in coordination with the counties, shall be responsible for the implementation of this section in a manner consistent with this chapter. The department shall, within one year of the effective date of Act , Session Laws of Hawaii 2019:

(1) Develop a comprehensive list of critical infrastructure in this State. Such comprehensive list shall include:

(A) The name and address of each critical infrastructure location;

(B) The name, telephone number, and email address of at least one individual employed at the critical infrastructure location in a supervisory role;

(C) The estimated capacity of each designated emergency shelter, stated as the number of individuals who could feasibly take refuge at the designated emergency shelter during a natural disaster or state of emergency; and
(D) The estimated critical load of each critical
infrastructure location;

(2) Determine, with respect to each critical
infrastructure location, the estimated number of hours
that the designated emergency shelter would be able to
continue operations following a natural disaster or
during a state of emergency. Such determination shall
consider:

(A) Each critical infrastructure location's
capability to store or access adequate food,
water, and medical supplies to serve the local
community that may be expected to rely on the
critical infrastructure following a natural
disaster or during a state of emergency;

(B) With respect to each designated emergency
shelter, the capabilities to store or access
adequate food, water, and medical supplies to
serve the estimated number of individuals who
could feasibly take refuge at the designated
emergency shelter following a natural disaster or
during a state of emergency; and
(C) Whether each critical infrastructure location has sufficient access to a source of backup electricity such that it would be capable of supplying its critical load during an electrical grid outage without significant interruption; and

(3) Develop, with respect to each critical infrastructure location, a list of improvements that the department, in coordination with the counties, considers reasonably necessary to ensure that each critical infrastructure location can continue operations following a natural disaster or during a state of emergency. Such list of improvements shall include, as applicable:

(A) Food and water storage equipment;

(B) Medical supplies and equipment to store perishable medical supplies; and

(C) Grid resiliency improvements, provided that any electricity generation technology used in such grid resiliency improvements shall be consistent with the renewable portfolio standards established pursuant to section 269-92.
§196- Critical infrastructure access to electricity.

The State shall ensure that critical infrastructure locations in the State have access to adequate supplies of electricity after natural disasters and during states of emergency. The department of business, economic development, and tourism, in coordination with the counties, shall be responsible for the implementation of this section in a manner consistent with this chapter. The department shall, within one year of the effective date of Act  , Session Laws of Hawaii 2019:

(1) Develop a plan to ensure that each critical infrastructure location has access to electricity after natural disasters and during states of emergency. Such plan shall:

(A) Recommend grid resiliency improvements for each critical infrastructure location; provided that any electricity generation technology used in such grid resiliency improvements shall be consistent with the renewable portfolio standards established pursuant to section 269-92;

(B) Consider potential cost savings that may result from the use of grid resiliency improvements at
critical infrastructure locations to supply both
the critical infrastructure location's daily
electricity needs, or a portion of such daily
electricity needs, in addition to supplying the
critical infrastructure's critical load after a
natural disaster or during a state of emergency;
and
(C) Consider and account for the increasing use and
importance of electricity in the fields of
transportation, communications, and medicine and
each of these field's importance to responding to
natural disasters and states of emergency;
(2) Develop recommendations for measures to ensure access
to electricity in electrically isolated communities in
the State after natural disasters and during states of
emergency. Such plan shall:
(A) Identify and list electrically isolated
communities; and
(B) Recommend specific grid resiliency improvements
that would allow electrically isolated
communities to have access to electricity in the
event of a prolonged outage of the electrical
grid after natural disasters and during states of
emergency; provided that the department:

(i) Shall only recommend measures that are
consistent with the renewable portfolio
standards established pursuant to section
269-92; and

(ii) Shall consider measures capable of supplying
both the critical loads of critical
infrastructure in electrically isolated
communities and other loads in such
electrically isolated communities."

SECTION 4. New statutory material is underscored.

SECTION 5. This Act shall take effect upon its approval.

INTRODUCED BY: [Signature]

JAN 22 2019
Report Title:
Electric Grid Resiliency; Critical Infrastructure

Description:
Requires the Department of Business, Economic Development, and Tourism, in coordination with the counties, to identify critical infrastructure locations and ensure those locations have adequate supplies of electricity during and after a natural disaster or during a state of emergency.

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