
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 Hawaii became an
2 early leader in the push to develop hydrogen as a fuel when, in
3 1980, United States Senator Spark Matsunaga introduced the first
4 hydrogen legislation in Congress. In 1983, with a \$50,000
5 appropriation from the legislature, the Hawaii natural energy
6 institute at the University of Hawaii established the Hawaii
7 hydrogen program. In September 1985, the Hawaii natural energy
8 institute was awarded a contract from the Solar Energy Research
9 Institute (now the National Renewable Energy Laboratory) to
10 establish the Hawaii hydrogen from renewable resources program.

11 During operation of this program and other subsequent
12 hydrogen projects, the efforts of the Hawaii natural energy
13 institute have focused on developing core technologies for
14 renewable hydrogen production, including direct solar and
15 biological hydrogen production, gasification of biomass, and
16 novel hydrogen storage technologies.

17 In 1990, Congress passed the Spark M. Matsunaga Hydrogen,
18 Research, Development and Demonstration Act of 1990 that set

1 forth for the first time a five-year management and
2 implementation plan for hydrogen research and development in the
3 United States. It created the Hydrogen Technical Advisory Panel
4 that was charged with ensuring consultation and coordination
5 regarding hydrogen research.

6 Also in 1990, the Hawaii natural energy institute hosted
7 the World Hydrogen Energy Conference that drew five hundred
8 fifty specialists from thirty-one nations. In 1996, the United
9 States Department of Energy designated the Hawaii natural energy
10 institute's program as a University Center of Excellence for
11 Hydrogen Research and Education.

12 There has been significant progress in hydrogen research
13 and development in Hawaii. For example, in 1999, University of
14 Hawaii chemists discovered a new way to store hydrogen energy
15 that may result in more economical, pollution-free vehicles.
16 Tackling one of hydrogen's major challenges, the team found a
17 catalyst that will release hydrogen from lightweight materials
18 at a moderate temperature. This has major implications for
19 developing effective fuel cells for vehicles. As a result of
20 these accomplishments, the Hydrogen Technical Advisory Panel and
21 the United States Department of Energy named the Hawaii team as
22 the "1999 Research Success Story."



1 In addition, the 2000 legislature requested a study to
2 recommend options that could result in hydrogen becoming a
3 future ingredient in the State's energy economy. The Hawaii
4 natural energy institute concluded that large-scale hydrogen use
5 for transportation can be competitive. As a result of this
6 study, the 2001 legislature appropriated \$200,000 to establish a
7 private/public partnership to implement the recommendations
8 contained in the Hawaii natural energy institute study that
9 resulted in a more comprehensive analysis entitled, "Nurturing a
10 Clean Energy Future in Hawaii: Assessing the Feasibility of the
11 Large-Scale Utilization of Hydrogen and Fuel Cells in Hawaii."

12 The legislature also finds that, in 2003, the Hawaii
13 natural energy institute opened the Hawaii fuel cell test
14 facility. This state of the art facility houses test equipment
15 and hydrogen infrastructure valued at more than \$2,500,000.
16 Testing and development efforts at this facility are funded by
17 the Office of Naval Research, the United States Department of
18 Energy, and by private companies such as United Technologies,
19 General Motors, Ballard Power Systems, and Arkema, Inc. These
20 activities have helped to attract a major international
21 conference to the Hawaii convention center scheduled for
22 November 2006.



1 The legislature also finds that the Hawaii natural energy
2 institute has also been successful in winning a United States
3 Department of Energy competitively awarded program called the
4 Hawaii Hydrogen Power Park, to demonstrate hydrogen technologies
5 in a real-world environment. Other projects funded by the
6 United States Department of Energy include the production of
7 hydrogen from renewable sources like solar and biomass. Since
8 2000, United States Department of Energy funding to the Hawaii
9 natural energy institute in these areas has exceeded \$6,000,000
10 with more than \$1,250,000 more in non-federal cost matching.
11 Partners in this cost match include limited funding from the
12 State; the city and county of Honolulu; Hawaiian Electric
13 Company, Inc.; The Gas Company; Stuart Energy Systems (now
14 Hydrogenics); MV Systems, a photovoltaic development company;
15 Worldwide Energy, LLC; and several universities.

16 However, the legislature finds that having world class
17 facilities, a world-class team, and a strong industrial
18 partnership is not enough when other states that are willing to
19 commit financial resources are aggressively competing against
20 Hawaii for these types of projects. Accordingly, the purpose of
21 this Act is to establish:



1 (1) A Hawaii renewable hydrogen program to support
2 research and development and deployment of renewable
3 hydrogen technologies; and

4 (2) A hydrogen technologies capital special fund to
5 provide seed capital and venture capital investments
6 for the deployment of renewable hydrogen systems.

7 SECTION 2. Chapter 196, Hawaii Revised Statutes, is
8 amended by adding a new section to be appropriately designated
9 and to read as follows:

10 "§196-A Hawaii renewable hydrogen program. There is
11 established, within the department of business, economic
12 development, and tourism, a Hawaii renewable hydrogen program to
13 manage the state's transition to a renewable hydrogen economy.
14 The program shall design, implement, and administer activities
15 that shall include:

16 (1) Strategic partnerships for the research, development,
17 testing, and deployment of renewable hydrogen
18 technologies;

19 (2) Engineering and economic evaluations of Hawaii's
20 potential for renewable hydrogen use and near-term
21 project opportunities for the State's renewable energy
22 resources;



- 1 (3) Electric grid reliability and security projects that
2 will enable the integration of a substantial increase
3 of electricity from renewable energy resources on the
4 island of Hawaii;
- 5 (4) Hydrogen demonstration projects, including
6 infrastructure for the production, storage, and
7 refueling of hydrogen vehicles;
- 8 (5) A statewide hydrogen economy public education and
9 outreach plan focusing on the island of Hawaii, to be
10 developed in coordination with Hawaii's public
11 education institutions;
- 12 (6) Promotion of Hawaii's renewable hydrogen resources to
13 potential partners and investors;
- 14 (7) A plan, for implementation during the years 2007 to
15 2010, to more fully deploy hydrogen technologies and
16 infrastructure capable of supporting the island of
17 Hawaii's energy needs, including:
- 18 (A) Expanded installation of hydrogen production
19 facilities;
- 20 (B) Development of integrated energy systems,
21 including hydrogen vehicles;



1 (C) Construction of additional hydrogen refueling
2 stations; and

3 (D) Promotion of building design and construction
4 that fully incorporates clean energy assets,
5 including reliance on hydrogen-fueled energy
6 generation;

7 (8) A plan, for implementation during the years 2010 to
8 2020, to transition the island of Hawaii to a
9 hydrogen-fueled economy and to extend the application
10 of the plan throughout the state; and

11 (9) Evaluation of policy recommendations to:

12 (A) Encourage the adoption of hydrogen-fueled
13 vehicles;

14 (B) Continually fund the hydrogen technologies
15 special fund; and

16 (C) Support investment in hydrogen infrastructure,
17 including production, storage, and dispensing
18 facilities."

19 SECTION 3. Chapter 211F, Hawaii Revised Statutes, is
20 amended by adding a new section to be appropriately designated
21 and to read as follows:



1 The sum appropriated shall be expended by the department of
2 business, economic development, and tourism for the purposes of
3 this Act.

4 SECTION 5. There is appropriated out of the general
5 revenues of the State of Hawaii the sum of \$10,000,000 or so
6 much thereof as may be necessary for fiscal year 2006-2007 to be
7 deposited into the hydrogen investment capital special fund.

8 The sum appropriated shall be expended by the department of
9 business, economic development, and tourism for the purposes of
10 this Act.

11 SECTION 6. There is appropriated out of the hydrogen
12 investment capital special fund the sum of \$10,000,000 or so
13 much thereof as may be necessary for fiscal year 2006-2007 to be
14 used for the purposes of the hydrogen investment capital special
15 fund, pursuant to section 211F-A, Hawaii Revised Statutes.

16 The sum appropriated shall be expended by the department of
17 business, economic development, and tourism for the purposes of
18 this Act.

19 SECTION 7. In codifying the new sections added by sections
20 2 and 3 of this Act, the revisor of statutes shall substitute
21 appropriate section numbers for the letters used in designating
22 the new sections in this Act.



- 1 SECTION 8. New statutory material is underscored.
- 2 SECTION 9. This Act shall take effect on July 1, 2020.



HB 3222

HD 2

Report Title:

Energy Resources; Renewable Energy

Description:

(1) Establishes the Hawaii renewable hydrogen program to manage the State's transition to a renewable hydrogen economy; (2) establishes the hydrogen investment capital special fund to seed private and federal projects for the deployment of hydrogen systems; and (3) appropriates funds for the program and special fund. (HB3222 HD2)

