SB 1052

DAVID Y. IGE
GOVERNOR

DOUGLAS MURDOCK
Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
P.O. BOX 119
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WRITTEN TESTIMONY
OF
DOUGLAS MURDOCK, COMPTROLLER
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
TO THE
SENATE COMMITTEES
ON
ENERGY AND ENVIRONMENT, TRANSPORTATION
AND GOVERNMENT OPERATIONS
ON
FEBRUARY 10, 2015

S.B. 1052

RELATING TO ENERGY

Chairs Gabbard, Nishihara, Dela Cruz and members of the Committees, thank you for the opportunity to submit written testimony on S.B. 1052.

The Department of Accounting and General Services (DAGS) does not support S.B.1052. S.B. 1052 proposes that DAGS procure new hydrogen fuel cell vehicles to upgrade state fleet vehicles. At this time, purchase of hydrogen fuel cell vehicles in not cost effective due to the high price of hydrogen fuel cell vehicles and lack of infrastructure.

Thank you for the opportunity to submit written testimony on this matter.



SENATE COMMITTEES ON ENERGY AND ENVIRONMENT, TRANSPORTATION, AND GOVERNMENTAL OPERATIONS

February 10, 2015, 1:15 P.M., Room 414

(Testimony is 1 page long)

TESTIMONY IN SUPPORT OF SB 1052

Aloha Chairs Gabbard, Nishihara, and Dela Cruz and members of the Committees:

Blue Planet Foundation supports SB 1052, which would help empowering the state to become an innovative leader in the use of hydrogen fuel cell vehicles. Along with battery electric vehicles, hydrogen fuel cell vehicles can use fuel generated from local clean energy. Unlike fossil fuel vehicles, they create no dangerous emissions.

Hydrogen fuel cell vehicles currently face a chicken/egg problem. Without local infrastructure to generate the hydrogen and fuel vehicles, many residents and businesses are unlikely to adopt these vehicles; but without a demand from vehicles, it is difficult to justify the infrastructure. SB 1052 proposes a way to solve this problem by making the state a leader in the hydrogen movement.

Although we do not propose amendments at this time, we caution that state hydrogen vehicle policy should ensure that the hydrogen is obtained from clean energy resources (such as local curtailed power) and not from fossil fuels.

Thank you for this opportunity to testify.

55 Merchant Street 17th Floor • Honolulu, Hawai'I 96813 • 808-954-6142 • blueplanetfoundation.org

Hawaii Automobile Dealers' Association

Bill van den Hurk, President
Dave Rolf, Executive Director

HADA testimony in SUPPORT of
SB1052

RELATING TO ENERGY

Presented to the Senate Committee on Energy and Environment, the Senate Committee on Transportation, and the Senate Committee on Government Operations
at the public hearing to be held
1:10 p.m. Tuesday, February 10, 2015
in Conference Room 414, Hawaii State Capitol

by the Members of the Hawaii Automobile Dealers Association
Hawaii's franchised new car dealers

Chairs Gabbard, Nishihara, and Dela Cruz, Vice Chairs, and Members of the Committees:

I am David Rolf, representing the members of the Hawaii Automobile Dealers Association, Hawaii's franchised new car dealers, who have remained strong in their support of the transition to renewable energy for use in vehicles in Hawaii. The association supports the measured and considered transition to renewable fuel, hydrogen fuel cell electric vehicles.

This bill proposes to appropriate out of the general revenues of the State of Hawaii funding as may be necessary for fiscal year 2015-2016 and the same sum for fiscal year 2016-2017 for the purchase of hydrogen fuel cell vehicles to replace or upgrade existing state fleet vehicles.

State hydrogen fuel cell electric vehicles are needed for the important role of providing early users for hydrogen fuel production and fueling stations which must be built to allow for the roll-out of such vehicles.

The U.S. Department of Energy has provided a report on the feasibility of Ft. Armstrong in Honolulu for the deployment of a hydrogen production and fueling station.

State monies allotted for the purchase of hydrogen fuel cell electric vehicles for the state fleet will provide part of the market base for this facility--thus providing a flagship hydrogen fueling station right in downtown Honolulu.

U.S. Department of Energy Hydrogen & Fuel Cells Program Plan (September 2011) identifies the use of hydrogen for government and fleet electric vehicles as a key step for achieving "reduced greenhouse gas emissions; reduced oil consumption; expanded use of renewable power …; highly efficient energy conversion; fuel flexibility…; reduced air pollution; and highly reliable grid support." This report synthesizes several pieces of existing information that can inform a decision regarding the viability of deploying a hydrogen (H_2) fueling station at the Fort Armstrong (HI0013zz) site in Honolulu, Hawaii. The hydrogen fueling station will be publicly accessible and used to fuel light-duty vehicles, including both General Services Administration fleet and non-General Services Administration fleet vehicles, and other fuel cell transportation technologies that are being deployed in the Honolulu area (such as fuel cell buses and plug-in paratransit buses).

The envisioned facility would consist of a premium covered parking lot, a roof-mounted photovoltaic solar array, and a small H_2 production and distribution station similar to other established H_2 fueling stations in California. A 1.4–acre, roof-mounted photovoltaic solar field that produces about 700 kW of power per day can sustain an electrolyzer that is capable of producing roughly 65 kg of H_2 per day without being overly dependent on the electric grid. The intent is to tie the photovoltaic solar array to the electrical grid and to one or more nearby third-party electricity consumers (i.e., most likely a co-located Federal Building) and effectively use the third-party consumer and the grid as an energy storage device. All required equipment is commercially available and can be easily procured and installed within a lead time of one calendar year.

With a 65-kg per day electrolyzer and an average demand of 80% utilization, the H_2 refueling station could support roughly 85 to 100 vehicles. About 148 government-owned electrical and gas-powered "cars" located near the proposed H_2 fueling station could easily be transitioned to H_2 fuel cell-powered vehicles. Another 293 sport utility vehicles and light-duty trucks are also candidates for transition and fueling station use, as well as a large fleet of public transportation vehicles such as busses. This makes the Fort Armstrong (HI0013zz) site very attractive.

This facility is intended to be a flagship-type installation, setting the example and establishing a renewable H_2 infrastructure in Hawaii for other government and private entities to follow. It is assumed that GSA would not own and operate the station but rather enter into a lease agreement with an entity to own and maintain the fueling station. The objective is to establish an H_2 production concept that can be replicated at other sites throughout the islands to produce affordable H_2 at a price comparable to fossil fuels and in a way that the consumer cost of H_2 per kg will not vary from station to station.

In accordance with the information and analysis contained herein, to produce an initial rate of return of 4% on the H_2 fueling station, the cost at which H_2 must be sold to recuperate capital expenditures and operations and maintenance costs, following the sale of excess solar-based power and the revenue received for covered parking, is $13.00 per kg. In this analysis, it was assumed that a single

kilogram of H_2 can power an H_2 fuel cell vehicle for ~60 miles, which is a conservative effort. Considering that gasoline-powered vehicles average

approximately 24 miles per gallon in fuel economy, a single kg of H_2 is equivalent to more than two gallons of gasoline when fuel cell energy efficiency is considered.

Beyond the economic factors, an H_2 fueling station in Honolulu, Hawaii, offers the following important benefits:

1. Supports the President's clean energy strategy to reduce greenhouse gas emission, reduce dependence on foreign oil, and place 1 million electric vehicles on the road
2. Supports both the Hawaii H_2 Initiative (H_2I) and H_2USA, the public, private partnership launched by DOE and industry in 2013 to address the challenge of H_2 infrastructure
3. Establishes Federal/General Services Administration leadership in the zero emission vehicle and fuel cell electric vehicle arena
4. Permits the leasing of fuel cell electric vehicles by General Services Administration on Oahu
5. Informs potential stakeholders that H_2 fueling stations are real and encourages the appropriation and allocation of funds for other zero emission vehicles beyond just battery electric vehicles
6. Fort Armstrong (HI0013zz) becomes the 'anchor tenant' for fuel cell vehicle growth and catalyzes development of the Oahu infrastructure toward an initial rollout of six public H_2 fueling stations
7. Sends a serious message to fuel cell electric vehicle automakers to support the growing demand for zero emission vehicles/fuel cell electric vehicles in Hawaii.

This report was funded by GSA and the Energy Departments' Office of Energy Efficiency and Renewable Energy (EERE) and prepared by engineers from the Idaho National Laboratory and National Renewable Energy Laboratory, and reviewed by experts from industry, gas providers and the utility company in HI. The effort was coordinated between EERE's Fuel Cell Technologies Office and Federal Energy Management Program. It is recommended that the program proceed with pursuing the detailed design and implementation of an H_2 fueling station at the Fort Armstrong (HI0013zz) site in Honolulu, Hawaii.

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HADA has testified on several bills this session heard on hydrogen….which we referred to as "the signal" bills.

Such "signal" bills, if passed, will send a signal from the State of Hawaii to:

1) GSA to move forward. With the 1.4 acre Ft. Armstrong hydrogen fueling station helping to facilitate the lease or purchase of HFCEVs for the GSA fleet in Honolulu

2) DAGS to move forward with their inventory of State vehicles and the move toward HFCEVs

3) County officials across the state and City and County officials here in Honolulu to adopt HFCEVs

4) Worldwide automakers to open up the Hawaii HFCEV market by providing help with infrastructure and providing vehicles

5) Those attending the Sept. 1-10, 2016 World Conservation Congress here in Hawaii—the largest conservation event in the world—that Hawaii is leading in the transition to renewable fuels.

So far, no "signals" have been sent from Hawaii legislative action. Last year all the hydrogen bills failed to pass. Last year, all the money from the barrel tax, which was renewed, was diverted to the General Fund, or other places, mainly funding cleanup projects, NOT funding hydrogen fueling stations or HFCEV vehicle acquisitions by State fleets.

The Servco organization is bringing in the first hydrogen fuel cell electric vehicle—this year.

They will likely create their own hydrogen fueling station.

But redundancy is needed for the successful introduction of HFCEVs.

We respectfully ask for provision of state funds proposed here in SB1052, for the purchase of hydrogen fuel cell electric vehicles for the state fleet which will help in providing the fuel-user base for the creation of the much needed Ft. Armstrong hydrogen production and fueling station described here.

Respectfully submitted,
David H. Rolf
For the members of the Hawaii Automobile Dealers Association
1100 Alakea St. Suite 2601
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Tel: 808 593-0031

Testimony of
Gary M. Slovin / Mihoko E. Ito
on behalf of
The Alliance of Automobile Manufacturers

DATE: February 9, 2015

TO: Senator Mike Gabbard
Chair, Committee on Energy and Environment

Senator Clarence Nishihara
Chair, Committee on Transportation

Senator Donovan Dela Cruz
Chair, Committee on Government Operations

Submitted Via ENETestimony@capitol.hawaii.gov

RE: **S.B. 1052– Relating to Energy**
Hearing Date: Tuesday, February 10, 2015 at 1:15 p.m.
Conference Room: 414

Dear Chair Gabbard, Chair Nishihara, Chair Dela Cruz and Members of the Joint Committees:

On behalf of the Alliance of Automobile Manufacturers ("Alliance") we submit these comments in general support of S.B. 1052. The Alliance is a trade association of twelve car and light truck manufacturers including BMW Group, Fiat Chrysler Automobiles, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of North America, and Volvo.

The various manufacturers have spent billions of dollars in the research and development of motor vehicles capable of using alternative fuels. However, if such efforts are to yield results other players need to also take an active role as the adoption by the public of vehicles that use alternative fuels is challenging, and the manufacturers cannot do it all.

Gary M. Slovin
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There is a distinct role for government to play, including assistance in the funding of infrastructure, fueling stations and the purchase of alternative fuel vehicles. In this regard the Alliance supports S.B. 1052 which calls for the State to purchase hydrogen fueled vehicles. Because hydrogen is only one of the array of alternative fuels being developed the Alliance generally prefers that all technologies be treated in the same way. Realizing, however, that the introduction of hydrogen fueled vehicles into the Hawaii market is very challenged at this time the Alliance does support H.B. 1052..

Thank you for the opportunity to submit testimony on this bill.