HAWAII STATE ENERGY OFFICE
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

SCOTT J. GLENN
CHIEF ENERGY OFFICER

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Testimony of
SCOTT J. GLENN, Chief Energy Officer

before the
SENATE COMMITTEE ON WAYS AND MEANS

Wednesday, February, 23, 2022
Time 10:05 AM
State Capitol, Conference Room 211 & Videoconference

SUPPORT
SB 2570 SD1
RELATING TO ZERO EMISSION VEHICLE FUELING REBATES.

Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee, the Hawaii State Energy Office (HSEO) supports SB 2570 SD1, which adds the installation and upgrade of hydrogen refueling stations to the Electric Vehicle Charging System Rebate Program, establishes the rebate amount for the installation or upgrade of a hydrogen refueling system at $200,000, limits the rebate to hydrogen refueling systems that do not store and dispense hydrogen fuel produced using fossil fuels, renames Hawaii's Electric Vehicle Charging System Rebate Program to the Zero-Emission Vehicle (ZEV) Infrastructure Rebate Program, and increases the spending cap of the ZEV Infrastructure Rebate Program.

HSEO's comments are guided by its mission to promote energy efficiency, renewable energy, and clean transportation to help achieve a resilient, clean energy, decarbonized economy. A significant barrier to the adoption of zero emission vehicles is access to fueling stations. Broadening the scope of the existing rebate program to explicitly incorporate hydrogen refueling stations supports the State's energy policy objectives to achieve a net-negative carbon economy as soon as practicable but no later than 2045. HSEO appreciates the Senate Committee on Energy, Economic Development, and Tourism adopting HSEO's recommendation in oral testimony to use the word "infrastructure" in the name of the rebate program. HSEO also appreciates

increasing the spending cap of the rebate program, which is particularly helpful as it increases the amount of infrastructure that can be installed, especially for expensive hydrogen fueling stations. Incentivizing a broader set of zero emission transportation technologies provides greater flexibility in the decarbonization of ground transportation.

Thank you for the opportunity to testify.

SERVCO

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Senator Donovan Dela Cruz, Chair
Senator Gilbert Keith-Agaran, Vice Chair
Committee on Ways & Means

RE: **SB 2570 SD1 - Relating to Zero Emission Vehicle Fueling Rebates – In Support**
February 23, 2022; 10:05 A.M.

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran and members of the committee:

Servco is in support of SB 2570 SD1, which adds the installation and upgrade of hydrogen refueling stations to the Electric Vehicle Charging System Rebate Program, establishes the rebate amount for the installation or upgrade of a hydrogen refueling system at $200,000, limits the rebate to hydrogen refueling systems that do not store and dispense hydrogen fuel produced using fossil fuels, renames Hawaii's Electric Vehicle Charging System Rebate Program to the Zero-Emission Vehicle (ZEV) Infrastructure Rebate Program, and increases the spending cap of the ZEV Infrastructure Rebate Program.

The demand for alternative forms of refueling vehicles will continue to grow in support of Hawaii's 100% energy goals. However, Servco respectfully requests that hydrogen refueling stations and fuel not be limited to renewable sources only but should be produced using diverse options, including fossil fuels. The reality is electric vehicle charging stations are ultimately sourced from fossil fuels and, as such, parity should be imposed as the state pursues more refueling choices for consumers.

Servco has invested millions of dollars into hydrogen production facilities and will continue to invest as we believe in its future. The long-term export potential of hydrogen across the globe is not only a revenue generating opportunity but also yields environmental benefits. We appreciate the efforts made by the State Legislature to make improvements to the program in pursuit of our clean energy mandate.

Thank you for the opportunity to provide comments in support.

Peter Dames
Executive Vice President

SB-2570-SD-1
Submitted on: 2/20/2022 8:18:57 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Kevin Kern	Testifying for Maui Nui EV	Oppose	No

Comments:

We are opposed to supporting Hydrogen fueling stations. This bill represents significant costs in an unproven technology that deprives funding for proven EV charging stations. Hydrogen fueling is cost prohibitive at the consumer level and can't be produced in a clean or effecient fashion as it requires the use of hydrocarbons.

Email: communications@ulupono.com

SENATE COMMITTEE ON WAYS & MEANS
Wednesday, February 23, 2022 — 10:05 a.m.

Ulupono Initiative supports the intent of SB 2570 SD 1, Relating to Zero-Emission Vehicle Fueling Rebates

Dear Chair Dela Cruz and Members of the Committee:

My name is Micah Munekata, and I am the Director of Government Affairs at Ulupono Initiative. We are a Hawai'i-focused impact investment firm that strives to improve the quality of life throughout the islands by helping our communities become more resilient and self-sufficient through locally produced food; renewable energy and clean transportation; and better management of freshwater and waste.

Ulupono supports the intent of SB 2570 SD 1, which adds the installation and upgrade of hydrogen refueling stations to the Electric Vehicle Charging System Rebate Program; establishes the rebate amount for the installation or upgrade of a hydrogen refueling system at $200,000; limits the rebate to hydrogen refueling systems that do not store and dispense hydrogen fuel produced using fossil fuels; renames Hawai'i's Electric Vehicle Charging System Rebate Program to the Zero-Emission Vehicle (ZEV) Infrastructure Rebate Program; and, increases the spending cap of the ZEV Infrastructure Rebate Program.

Ulupono supports clean, alternative fuel transportation as ground transportation makes up a significant portion of Hawai'i's reliance on imported oil. Hydrogen can potentially play a critical role as a renewable energy source to combat ground transportation's greenhouse gas emissions, however, we believe that this measure may be a bit premature. While hydrogen's technology continues to improve, there is still some question regarding its current economic feasibility here in Hawai'i. Studies and strategic plans, such as those listed in SB 2283, may help to better inform how best the State can support the implementation of hydrogen as a renewable energy source. For now, we believe that it may be best to maintain the current Hawai'i Electric Vehicle Charging System Rebate Program. State investments into EV charging infrastructure directly supports a blossoming EV market for Hawai'i that will only continue to grow as vehicle manufacturers across the world make bold, clean transportation commitments.

As Hawai'i's energy issues become increasingly complex and challenging, we appreciate

this committee's efforts to look at policies that support the continued implementation of renewable energy resources throughout the islands.

Thank you for this opportunity to testify.

Respectfully,

Micah Munekata
Director of Government Affairs

To: The Senate Committee on Ways and Means
From: Sherry Pollack, 350Hawaii.org
Date: Wednesday, February 23, 2022, 10:05am

In strong opposition to SB2570 SD1

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and Committee members of Ways and Means,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org **strongly opposes SB2570 SD1** that adds the installation and upgrade of hydrogen refueling stations to the Electric Vehicle (EV) Charging System Rebate Program.

The development of the EV system rebate program to incentivize infrastructure build-out was based on market conditions and interest. It is well established that a significant barrier to the adoption of zero emission vehicles is access to charging stations. With the demand for EVs growing, we need to prepare for this emerging need in our communities. It must be noted, however, that fuel-cell electric vehicles (hydrogen cars) have little traction in the auto market. In Hawaii, currently there are over 18,000 registered EVs to 37 Hydrogen vehicles.

Considering how expensive hydrogen fueling stations are, (up to $2,000,000 per station, compared to $10,000 for commercial Level 2 charging stations), and the existing shortage of working EV charging stations available to the public, it does not make sense at this critical stage in our transition to clean transportation to siphon our limited resources away from the expansion of EV charging infrastructure. Considering the proposed annual commercial charging station rebate cap of $700,000 (from $500,000), a $200,000 hydrogen fueling station rebate will quickly cannibalize the funds required for public EV charging.

We must accelerate our transition away from fossil fuels to mitigate the effects of the climate crisis. Expanding our public EV charging infrastructure aggressively is a very effective means to do that. Ensuring the integrity of the charging system rebate program helps address a key barrier to EV adoption and enable more equitable access to clean transportation.

Mahalo for the opportunity to testify.

Sherry Pollack
Co-Founder, 350Hawaii.org

Hawai'i Energy

45 North King Street, Suite 500 • Honolulu, Hawai'i 96817 • HawaiiEnergy.com • P: (808) 839-8880 • F: (808) 441-6068

Before the Senate Committee on Ways and Means
Wednesday, February 23, 2022 at 10:05am

Testimony on SB2570 SD1 relating to Zero Emission Vehicle Fueling Rebates.

Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committees:

Thank you for the opportunity to provide comments on Senate Bill 2570 SD1.

Hawai'i Energy works to empower island families and businesses on behalf of the Hawai'i Public Utilities Commission (PUC) to make smart energy choices to reduce energy consumption, save money, and pursue a 100% clean energy future. Energy efficiency is the cheapest option to help us achieve our 100% clean energy goal by eliminating waste and being more efficient.

Under the Hawai'i Public Utilities Commission's direction, Hawai'i Energy has been managing the electric vehicle charging station (EVCS) rebate program that was initially funded in 2019 by the State Legislature (Act 142), and in 2021, provided continued funding with the passage of House Bill 1142 (Act 75).

To date, the rebates have only been distributed to qualified charging stations that power full-battery electric and/or plug-in hybrid vehicles. The rebates are distributed on a first-come, first served basis, upon confirmation that the project has been installed and is operational.

As of January 2022, the program has issued rebates for the following types of EVCS:

- Level 2 – 43 new installations and 62 retrofits
- DC Fast Chargers – 1 new installation and 1 retrofit

Also as of January 2022, the rebate program's funding was as follows:

Act 142 Funding - $400,000
Act 75 Funding - $100,000 (bridge funding provided on July 1, 2022)
TOTAL - $500,000

Total rebates paid – $442,500
Total funding remaining - $57,500
Projects in pipeline (based on applications received) - $195,508

We appreciate the efforts made by the State Legislature to make improvements to the rebate program in pursuit of our 100% clean energy mandate. Thank you for the opportunity to testify on Senate Bill 2570 SD1.

Sincerely,
Brian Kealoha
Executive Director
Hawai'i Energy

KauaiEV
Kauai Electric Vehicle Association
302 Makani Rd, Kapaa, HI 96746
808-652-0591

2022/02/21

Strong OPPOSITION to SB2570-SD1

Dear Chair Chair Donovan M. Dela Cruz, Vice Chair Gilbert S.C. Keith-Agaran, and Committee on Ways and Means members,

I am writing on behalf of KauaiEV, a grassroots organization with over 100 members on Kauai. Our members are electric vehicle drivers and we believe that EVs are the personal transportation of the future. We are in **strong OPPOSITION to SB2570-SD1.**

Bringing liquid hydrogen to Hawaii will probably be very expensive, at the moment there is only one prototype ship that can transport it.

Hydrogen fueling stations are very expensive, so is hydrogen. In places with cheap electricity it might be possible to produce green hydrogen between $3 and $6 per kilogram. In Hawaii, electricity is 2-to-3 times more expensive, and so hydrogen would be uneconomical.

Fuel cells are less efficient, and lots of electricity is wasted producing hydrogen. The battery electric Nissan Leaf gets 123 miles per gallon equivalent, and the hydrogen-powered Toyota Mirai gets 79 miles per gallon equivalent; this does not include the wasted energy when producing green hydrogen.

Fuel cell vehicles are more expensive than comparable BEVs and over 95% of all hydrogen worldwide is being produced from fracked methane or coal. Most of the continued support for hydrogen (including for green hydrogen) stems from the fossil fuel industry. As of 2021 only 2 manufacturers offer hydrogen cars: the **Toyota Mirai** and the Hyundai Nexo. Honda stopped manufacturing the Clarity Fuel Cell in August 2021.

The Frauenhofer ISI, one of the leading innovation research institutions in Europe and leading one in Germany has published a study a month ago in the publication Nature: ”Hydrogen technology is unlikely to play a major role in sustainable road transport “ The subtitle is “Technical and economic developments in battery and fast-charging technologies could soon make fuel cell electric vehicles, which run on hydrogen, superfluous in road transport.“ and it explains that when compared to battery-electric hydrogen is inefficient and uneconomical in ground transport, and that more green hydrogen than can be produced until 2030 is needed for maritime transport, aviation and production of steel.

KauaiEV
Kauai Electric Vehicle Association
302 Makani Rd, Kapaa, HI 96746
808-652-0591

I'd like to include 2 articles on the danger - hydrogen is very energy dense and accidents happen.
Bay Area experiences hydrogen shortage after explosion

Hydrogen Fueling Station Explodes: Toyota & Hyundai Halt Fuel Cell Car Sales

Please oppose SB2570-SD1.

Mahalo for your consideration,

Sonja Kass

Sonja Kass, President KauaiEV

Hawaii Electric Vehicle Association
hawaiiev.org
info@hawaiieva.com

February 21, 2022

OPPOSITION TO SB2570 SD1 RELATING TO ZERO EMISSION VEHICLE FUEL REBATES

Dear Chair Dela Cruz, Vice-Chair Keith-Agaran, and members of the Ways and Means Committee,

Hawaii Electric Vehicle Association (Hawaii EV) is in opposition to SB2570 SD1 as it has a great potential to impede the expansion of electric vehicle charging infrastructure. We recommend deferring this measure.

Hawaii EV recognizes that hydrogen fuel cell vehicles (FCEVs) are electric cars and that they have zero-tailpipe emissions. However, due to the following reasons, we continue to focus our efforts on accelerating the adoption of battery electric vehicles:

- Hydrogen/FCEVs are inherently inefficient. When we consider well-to-wheel efficiency, these vehicles are only around 22% efficient. We don't have energy to waste.
- The hydrogen ground transportation ecosystem is costly. A fueling station can cost $2M. Level 2 and DC Fast Chargers cost around $10k to $150k, respectively.
- The market is churning out ever-increasingly diverse, affordable, longer-range EVs in response to consumer demand. The same cannot be said for FCEVs. Global sales continue to be a small fraction of that of EVs. This has implications in servicing, fueling, and supplying FCEVs.
- There are obvious challenges associated with the creation of non-fossil fuel-based hydrogen. Most of the global hydrogen is produced from coal or gas. For it to be meaningful in Hawaii, we first need to meet our need for affordable electricity and transportation and do so with an abundance of firm renewable power.

SB2570 SD1 has the potential to negatively impact the expansion of public charging infrastructure. As stipulated in the measure, ONE hydrogen fueling station rebate is as much as $200,000.

> *(A) $4,500 for the installation of an alternating current Level 2 station with two or more ports; [~~and~~]*
>
> *(B) $35,000 for the installation of a direct current fast charging system; and*
>
> *(C) $200,000 for the installation of a hydrogen refueling station; provided that it does not store or dispense hydrogen fuel that is produced using fossil fuels; and*

While SB2570 SD1 also includes an increase of the annual rebate program cap to $700,000 (from $500,000), it's very apparent that one hydrogen fueling station rebate will be costly and consequential to the expansion of EV chargers. **A $200,000 hydrogen fueling station rebate will support the installation of over 40 Level 2 charging stations or 5 DC Fast Chargers.**

Public EV charging is a necessity for the adoption of clean transportation and for the democratization of the electric car. Public EV chargers are necessary for the equitable enjoyment of the cost savings and clean air benefits that electric vehicles provide.

It is understandable that we need to create the opportunity for all possible renewable energy and transportation options, and that there are quarters that seek to see how we might leverage hydrogen for transportation. If this is, ultimately, deemed a necessity, we ask that a separate rebate fund be established for FCEV fueling stations.

Thank you for this opportunity to testify.

Sincerely,

Noel Morin
President
Hawaii EV Association

Hawaii EV Association is a grassroots non-profit group representing electric vehicle owners in Hawaii. Our mission is to accelerate the electrification of transportation through consumer education, policy advocacy, and electric vehicle charging infrastructure expansion. For more information, please visit hawaiiev.org.

Hawaii EV Board

Noel Morin, President
Nanette Vinton, Secretary and Treasurer
Bill Bugbee – Director
Tam Hunt - Director
Sonja Kass – Director
Rob Weltman – Director

Hawaii EV Clubs

Big Island EV Association
Kauai EV
Maui Nui EV
Tesla Hawaii Club

SB-2570-SD-1
Submitted on: 2/21/2022 8:55:32 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Ted Bohlen	Testifying for Climate Protectors Hawai‘i	Oppose	No

Comments:

To: The Honorable Donovan Dela Cruz, Chair, The Honorable Gilbert Keith-Agaran, Vice Chair,and Members of the Senate Committee on Ways and Means

From: Climate Protectors Hawai‘i (by Ted Bohlen)

Re: Hearing: SB2570 SD1 **RELATING TO ZERO EMISSSION VEHICLE FUELING REBATES.**

Hearing: Wednesday, February 23, 2022, 10:00 a.m., Rm. 211 and by videoconference

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and members of the Senate Committee on Ways and Means:

The Climate Protectors Hawai‘i is a group focused on reversing the climate crisis and encouraging Hawai‘i to lead the world towards a safe and sustainable climate and future. Though we appreciate the intent, the Climate Protectors Hawai‘i **OPPOSES SB2570 SD1** because the bill is premature.

The Climate Protectors Hawai‘i appreciates that the bill has been amended to recognize that hydrogen produced from fossil fuels, as almost all of it is currently, is not a zero emission fuel. If the bill moves forward, **a similar amendment should be made to exclude hydrogen produced from wood, which also is not a zero emission fuel.**

While the technology continues to improve, **there is still reason to doubt hydrogen's economic feasibility for fueling ground transportation here in Hawai‘i. Hydrogen fueling stations are far more expensive than electric vehicle charging stations. Studies and strategic plans, such as those listed in SB2283 SD1, may help to better inform whether and how best the State can support the implementation of hydrogen as a renewable energy source.**

The Climate Protectors Hawai‘i OPPOSES the bill because, without more study, it would be best not to take funding away from the effective Hawai‘i Electric Vehicle Charging System Rebate Program in order to support much more expensive hydrogen station rebates.

Please defer this bill!

Mahalo!

Climate Protectors Hawai‘i (by Ted Bohlen)

Hawaii Automobile Dealers' Association

Heather Cutter, President
Dave Rolf, Executive Director

Written Testimony by
David H. Rolf, Executive Director, Hawaii Automobile Dealers Association

for the
Committee on Ways and Means
Wednesday, February 23, 2022
Time 10:05 a.m.
State Capitol, via Videoconference
providing testimony **IN SUPPORT of** SB2570 SD1

RELATING TO ZERO-EMISSION VEHICLE FUELING REBATES

Chair Dela Cruz, Vice Chair Keith-Agaran and members of the committee:

HADA supports the transition to electric vehicles and hydrogen fuel cell electric vehicles. HADA is in support of SB2570 SD1.

With the growing instability of the world energy markets brought about by the recent Ukraine-Russia conflict it is more important than ever for Hawaii to take steps to foster the production and distribution of Hawaii-made energy.

This bill, among other provisions, adds the installation and upgrade of hydrogen refueling stations to the Zero—Emission Vehicle Fueling System Rebate Program.

HADA appreciates the opportunity provide testimony in support of SB2570, SD1.

SanHi
GOVERNMENT STRATEGIES
A LIMITED LIABILITY LAW PARTNERSHIP

DATE: February 21, 2022

TO: Senator Donovan Dela Cruz
Chair, Committee on Ways and Means

FROM: Tiffany Yajima

RE: **S.B. 2570, S.D.1 – Relating to Zero Emission Vehicle Fueling Rebates**
Hearing Date: Wednesday, February 23, 2022 at 10:05 a.m.
Conference Room: 211

Dear Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of Committee on Ways and Means:

On behalf of the Alliance for Automotive Innovation ("Auto Innovators") we submit this testimony in **support** of S.B. 2570, SD1. This measure renames Hawaii's Electric Vehicle Charging System Rebate Program to Zero-Emission Vehicle Fueling System Rebate Program and incentivizes the installation and upgrade of hydrogen fueling stations in the state.

The Alliance for Automotive Innovation is the singular, authoritative and respected voice of the automotive industry. Focused on creating a safe and transformative path for sustainable industry growth, the Alliance for Automotive Innovation represents the manufacturers producing nearly 99 percent of cars and light trucks sold in the U.S. Members include motor vehicle manufacturers, original equipment suppliers, technology, and other automotive-related companies and trade associations.

This measure incentivizes the build-out of statewide infrastructure to support both electric vehicles and hydrogen vehicles. The automotive industry has made and continues to make a significant investment in hydrogen vehicles and the development of hydrogen fueling infrastructure. At the same time, we also recognize the importance of public, private and government support for infrastructure projects like hydrogen fueling stations. This measure would support the growing number of alternative fuel vehicles on the road today through a broader network of charging infrastructure where these vehicles can refuel.

We appreciate the amendments made in the S.D.1 and note that this measure was also amended so that hydrogen fueling stations that store and dispense non-renewable hydrogen are ineligible for the rebate. We respectfully ask the committee to remove this limitation as hydrogen is a cleaner fuel and important technology pathway that can help the state achieve carbon reductions while growing the electric vehicle market.

Thank you for the opportunity to submit this testimony in support of S.B. 2570, SD1.

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TESTIMONY OF
JAMES P. GRIFFIN, Ph.D.
CHAIR, PUBLIC UTILITIES COMMISSION
STATE OF HAWAII

TO THE
SENATE COMMITTEE ON
WAYS AND MEANS

February 23, 2022
10:05 a.m.

Chair Dela Cruz and Members of the Committee:

MEASURE: S.B. No. 2570, SD1
TITLE: RELATING TO ZERO EMISSION VEHICLE FUELING REBATES.

DESCRIPTION: Adds the installation and upgrade of hydrogen refueling stations to the Electric Vehicle Charging System Rebate Program. Establishes the rebate amount for the installation or upgrade of a hydrogen refueling system at $200,000. Limits the rebate to hydrogen refueling systems that do not store and dispense hydrogen fuel produced using fossil fuels. Renames Hawaii's Electric Vehicle Charging System Rebate Program to the Zero-Emission Vehicle (ZEV) Infrastructure Rebate Program. Increases the spending cap of the ZEV Infrastructure Rebate Program. (SD1)

POSITION:

The Public Utilities Commission ("Commission") offers the following comments for consideration.

COMMENTS:

The Commission appreciates the intent of this measure to facilitate expanded availability of zero emission vehicle infrastructure.

Since 2019, the Commission has managed the Electric Vehicle Charging System ("EVCS") Rebate Program in consultation with electric vehicle stakeholders and in cooperation with the program's administrator, Hawaii Energy. The program has been met with a robust response and has efficiently allocated funds to expand public charging infrastructure in the state. According to Hawaii Energy, the program to date has issued rebates for 43 new Level 2 EVCS installations, 62 Level 2 retrofits, 1 DC fast charger

("DCFC") installation, and 1 DCFC retrofit. The program also has 30 projects in the pipeline, totaling nearly $200,000 in rebates.

The Commission notes that the current funding level would likely be insufficient to support both electric and hydrogen system incentives, primarily due to the cost of hydrogen refueling stations and, thus, the size of a rebate that could adequately encourage investment in these stations. For context, a recent study by the U.S. Department of Energy found that an average hydrogen station requires approximately $1.9 million in capital cost.[1] Hawaii Energy estimates that a low-end rebate for this type of system would equate to $200,000.

Therefore, the Commission notes that a substantial funding increase would likely be necessary to effectively achieve the intent of this measure, in addition to removing the spending cap outlined in Section 269-72, subsection (d), HRS. Given the cost of hydrogen refueling stations and noting that the program is currently operated on a first-come, first-served basis, it is possible that a very small number of hydrogen refueling station rebates could consume the bulk of the available funds under the current spending limit.

The Commission acknowledges the amendments made by the Committee on Energy, Economic Development, and Tourism, which, among other changes, specify the rebate amount for hydrogen refueling systems and increase the spending cap of the rebate program from $500,000 to $700,000. The Commission notes that under this spending cap and with a $200,000 rebate amount for hydrogen systems, the entirety of program funds could still be consumed by a small number of hydrogen system rebates.

For these reasons, the Commission is concerned that, without sufficient funding and under the constraints of this spending cap, this measure could unintentionally stifle the expansion of electric vehicle charging infrastructure that can be achieved through the existing rebate program.

Thank you for the opportunity to testify on this measure.

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[1] U.S. Department of Energy (2021). *Hydrogen Fueling Stations Cost*. https://www.hydrogen.energy.gov/pdfs/21002-hydrogen-fueling-station-cost.pdf

February 22, 2022

From: Hawaii Hydrogen Alliance

Re: SB2570 - SUPPORT

Relating to Zero Emission Vehicle Fueling Rebates

To the Committee on Ways and Means (WAM):

Chair Dela Cruz, Vice-Chair Keith-Agaran, and Members of the Committee,

SB2570 takes a major step forward in creating a true "zero-emissions" transportation fleet in Hawai'i. The bill adds the language "zero-emissions" and includes "hydrogen fuel cell vehicles" to the existing electric-vehicle charging station rebate program. These two additions create an opportunity to drive down fossil-fuel demand for transportation, by creating an incentive for zero-emissions vehicle infrastructure.

The existing language in the rebate program only covers battery-based electric vehicles. This will broaden to fuel-cell-based electric vehicles. WE SUPPORT!

The Hawaii Hydrogen Alliance is focused on increasing awareness for 'green hydrogen' production and use in Hawaii and across the Pacific. HHA represents companies and other stakeholders involved in the green hydrogen industry.

In summary,

- Proposed bill adds "hydrogen fuel cell vehicles", which is another type of zero-emissions vehicle in the marketplace today
- Proposed bill adds "zero-emissions" as a qualifier for the rebate
- Proposed language changes will help to increase demand for hydrogen fuel cell vehicles that use green hydrogen (ie, zero-emissions hydrogen)

We support SB2570 as written, and are thankful for the opportunity to present our testimony.

Mahalo,

Chuck Collins

Board Member

admin@hawaiihydrogenalliance.com

LATE

ALOHA CHARGE
Hawaii's EV Charging Experts

TO: Members of the Senate Ways and Means Committee

FROM: Jim Burness, CEO of Aloha Charge

DATE: February 22, 2022

RE: Opposition to SB2570 SD1

Aloha Charge is the largest provider of EV charging stations in the state of Hawai'i, and we are strongly opposed to SB2570 SD1.

Our company's mission is to hasten the conversion to clean transportation, and as such, we know for a fact that hydrogen is not in a position to play a significant role in passenger car and short-haul transportation. If it were, we would have hydrogen fueling in our portfolio.

Allowing the hydrogen lobby to participate in the incentive funding now allocated to the battery electric vehicle infrastructure will be a de-facto death sentence to the state's EV efforts. The costs of a hydrogen station are upwards of a quarter of a million dollars, whereas a Level 2 EV charging station can be installed for $10,000 or less, depending on circumstances. In other words, for one H2 station, the state must forgo 25 Level 2 stations.

More importantly, however, is the fact that the vast majority auto industry is turning away from hydrogen and towards battery electric power. The Toyota Mirai is the most popular hydrogen vehicle for sale today (not for sale in Hawai'i), and they have sold fewer than 6,000 units over the last four years. It takes only 10 hours for the same number of electric vehicles to be sold across the planet.

Furthermore, just last month the city of Montpellier, France canceled its order for 51 hydrogen-powered transit busses in favor of battery-powered units because the economics of hydrogen just could not be justified. The city calculated that the hydrogen busses would have six times the operating cost of their battery-powered equivalents.

Hydrogen may play a role in the future in cross-country transportation, and may possibly have aviation and marine applications, but it is a dead-end for passenger vehicles and short-haul vehicles (and, truth be told, everything is short haul in our state).

Passing this bill will essentially "suck all of the air out of the room" for EV infrastructure, which would be a huge setback of the state's clean energy goals.

Thank you.

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Honolulu, HI 96814
(808) 450-2111
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LATE

SB-2570-SD-1
Submitted on: 2/22/2022 9:59:04 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Noel Morin	Testifying for Big Island Electric Vehicle Association	Oppose	No

Comments:

Dear Chair Dela Cruz, Vice-Chair Keith-Agaran, and members of the Ways and Means Committee,

Big Island Electric Vehicle Association (BIEVA) opposes SB2570 SD1 - it will complete with more affordable and useful EV charging stations for limited EV Charger Rebate funds. This will create a drag on the needed expansion of EV charging across Hawaii.

We ask that it be deferred or that we establish a separate rebate fund for hydrogen fueling stations.

Thank you for the opportunity to testify.

Noel Morin

Big Island EV Association

SB-2570-SD-1
Submitted on: 2/19/2022 9:30:19 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Douglas Perrine	Individual	Support	No

Comments:

Green hydrogen fuel can be an important part of Hawaii's de-carbonization and for some purposes is much more practical than battery electric. Please pass SB2570

SB-2570-SD-1
Submitted on: 2/20/2022 7:24:41 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Larry Stevens	Individual	Oppose	No

Comments:

Hydrogen is irrelevant at this point. It makes no sense to burden the ZEV movement with it at this point.

SB-2570-SD-1
Submitted on: 2/20/2022 7:34:05 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Harold Grey	Individual	Oppose	No

Comments:

I opposed adding hydrogen refueling stations to the zero emission fueling system rebate program. All resources should be supporting an electric vehicle infrastructure and we should be doing everything we can in Hawaii to encourage people move to EVs, not hydrogen-powere vehicles. The cost of hydrogen fueling stations is considerably more than electric charging stations and can not be self-supporting, such as with solar panels and EV charging. We need to be supporting an EV infrastructure, not diverting funds to hydrogen fueling.

SB-2570-SD-1
Submitted on: 2/20/2022 8:31:52 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Fernando L Alvarado	Individual	Oppose	No

Comments:

While I support technologies that help zero-emission vehicles, the provisions to support Hydrogen Refueling Stations as part of this bill would greatly dilute it. It is a radically different and very expensive technology that some day may deserve support, but for now I think it is wise to concentrate on Electric Vehicles as the most promising and COST EFFECTIVE technology for zero-emissions.

SB-2570-SD-1
Submitted on: 2/21/2022 7:27:49 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Lorn Douglas	Individual	Oppose	No

Comments:

Aloha and thanks for considering my input. Globally the world's fleet of cars and trucks are moving to Electric Vehicles. Hydrogen technology was adapted by Toyota and then later discarded due to the expensive infrastructure requirements.
I make up using all funds for increased support of EV's is where the money will be used most efficiently. ALso I would not incourage use of hydrogen except for where the infrastructure already exisits.
Lorn DOuglas

SB-2570-SD-1
Submitted on: 2/21/2022 9:34:42 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Sherryl Royce	Individual	Oppose	No

Comments:

To Chair Wakai, Vice Chair Misalucha, and Energy, Economic Development and Tourism Committee members:

I oppose SB2570 in its present form.

Hydrogen as an alternative fuel, today, is not clean enough, hydrogen fueling stations are too expensive, and hydogen fueled cars are not widely available or used here in Hawaii.

EV is taking hold here with the support you have given through the current EV charging system rebate program. This bill in its present form would likely have the unintended effect of removing needed moneys that support the expansion of EV. So please help EV continue to expand by amending this bill.

Thank you for your continued efforts to protect our island and its climate.

aloha,

Sherryl Royce

SB-2570-SD-1
Submitted on: 2/21/2022 9:43:29 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Stephanie Hall Morin	Individual	Oppose	No

Comments:

Aloha,

While I wholeheartedly support moving to clean energy, I don't think the hydrogen rebate should be included with the charging station rebates. If the hydrogen stations are built it will quickly deplete the fund for chargers. There are many more electric cars on the roads than hydrogen cars. EV's are more efficient - wasting less resources. We should look to incorporate hydrogen for the big heavy vehicles e.g., semi's and cargo ships, tug boats, etc. Right now we need to build the EV charging infrastructure - and quickly!

Mahalo,

Stephanie

SB 2570 SD 1 TESTIMONY

To: Senate Committee on Ways and Means
Decision Making on Feb. 23, 2022 at 10:05 a.m.

From: John Kawamoto

Position: Oppose

Not all zero emission vehicles are the same. When comparing electric vehicles with hydrogen fuel cell vehicles, electric vehicles are far more advanced in technology and in adoption by customers. In the U.S., a total of 291,933 electric vehicles were sold in 2021, compared with only 3,341 hydrogen fuel cell vehicles sold in the same period.

The numbers show that electric vehicles are winning the battle for commercialization. In allowing rebates for electric vehicle charging stations to be used for rebates for refueling stations for hydrogen vehicles, this bill discourages Hawaii's transition to a clean, renewable energy future.

Furthermore, hydrogen refueling stations are associated with much greater costs than electric vehicle charging stations. Each hydrogen refueling station will be eligible for a rebate of $200,000. By contrast, each electric vehicle charging station will be eligible for a rebate ranging from $3,000 to $28,000, depending on the type of charging station. The rebate for only one hydrogen refueling station will be greater than the total rebates for seven or more electric vehicle charging stations.

Hydrogen fuel cell vehicles may be a part of Hawaii's clean, renewable energy future. However, the funding sources for rebates for hydrogen refueling stations should be separate from the funding sources for rebates for electric vehicle charging stations.

For the foregoing reasons I oppose the bill.

SB-2570-SD-1
Submitted on: 2/21/2022 1:23:26 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Scott Kidd	Individual	Oppose	No

Comments:

EV's and hydrogen vehicles are two separate initiatives from a standard vehicle perspective. Multiple studies show the cost benefit aspect of using hydrogen as a fuel source for personal vehicles is a disproportionate comparison between pure BEV's and hydrogen fueled cars. Separate the two issues, focus on BEV adoption for personal vehicle transportation and hydrogen as a separate energy storage device that has it’s own uses in other arenas.

SB-2570-SD-1
Submitted on: 2/21/2022 5:32:52 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Gerard Silva	Individual	Oppose	No

Comments:

Wast of Money ans time. We the people are watching who the Crooks are and they will be Dealth with!!

SB-2570-SD-1
Submitted on: 2/21/2022 5:34:51 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Sharon Geiken Westerberg	Individual	Oppose	No

Comments:

Dear Chair Donvon M. Dela Cruz, Vice Chair Gilbert S.C. Keith-Agaran and Committee on Ways and Means members,

I am in strong opoposition to SB2570-SD1.

Hydogen fuel cells are much less efficient than the battery technology. It takes energy to make it, transport it and then does not compare the the miles per gallon equivalent with the electric battery.

Hydrogen is not the tuture. Please oppose SB2570-SD1.

Mahalo for your consideration,

Sharon Geiken Westerberg

SB-2570-SD-1
Submitted on: 2/21/2022 6:11:51 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Ruta Jordans	Individual	Oppose	No

Comments:

We need to focus on the infrastructure for electric vehicles, get that in place to be able to expand the number of electric vehicles in Hawaii, before we move on to hydrogen powered vehicles. Looking at both at the same time will slow the adoption of both. Get one in place (EVs) and then look at the other (Hydrogen powered).

SB-2570-SD-1
Submitted on: 2/21/2022 7:44:08 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Diane Ware	Individual	Oppose	No

Comments:

Dear Chair WAM and committee Members,

I own an EV on Ha2ai'i island and I do not Hawaii support hydrogen fuel cell EVs for ground transportation. To summarize, fuel cell electric vehicles (FCEVs) are notoriously inefficient when considering the energy losses associated with hydrogen production, storage, and transport, as well as the conversion back to electricity. Proper hydrogen is that which is created using electrolysis, an energy-intensive process.

Importantly, hydrogen fueling stations can cost up to $2M, and the proposed rebate for a qualified station is $200,000. On the other hand, Level 2 and DC Fast Charger rebates are up to $4,500 and $35,000, respectively.

I urge you to defer this measure at this timel.

Respectfully,

Diane Ware, 99-7815 Kapoha Pl, Volcano Hi 96785

SB-2570-SD-1
Submitted on: 2/21/2022 10:06:00 PM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Andrew Richard Kass	Individual	Oppose	No

Comments:

Dear Legislators,

I oppose this bill to subsidize hydrogen fueling stations in Hawaii because it diverts efforts from vehicle electrification. Battery-electric vehicles are a proven technology, with dozens of models for sale, unlike the nearly unavailable single Toyota Mirai for hydrogen. Battery-electric cars can be charged at home, at work, and out shopping at hundreds of chargers across the state.

But despite their advantages, electric cars aren't mainstream yet. The neighbor islands need more chargers and vehicles are still more expensive than gas-guzzling, carbon-emitting counterparts. Let's focus our efforts and resources on the realistic and proven technology of battery-electric vehicles.

Thank you for your consideration,

Andrew Kass

SB-2570-SD-1
Submitted on: 2/22/2022 7:11:40 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Virginia Tincher	Individual	Oppose	No

Comments:

Aloha,

I am writing to oppose the addition of hydrogen refueling station rebates to SB 2570 SD 1 Relating to zero emission vehicle fueling rebates.

With our state goal of rapidly reducing emissions the biggest bang for our limited state funds is to give rebates for battery electric vehicle (BEV) chargers. For every $200,000 rebate on a hydrogen fuel station Hawaii can support 66 Level 2 electric chargers and 7 DC fast electric chargers.

Electric vehicles are or soon will be available in models that fit the driving needs and budget of most car owners in Hawaii. There will be over 100 new battery electric vehicle models available by the end of 2024 in addition to the 19 battery electric vehicle models available in the US (26 total including model variants). Pricing is or will be competitive with internal combustion engines. There are already affordable EVs in the low $30,000 range with more to come and used electric vehicles are available.

While promising for the future hydrogen fueled vehicles are not widely available nor competitive in pricing now or in the near term.

Increasing the number of electric vehicles in Hawaii is the quickest and most effective way to reduce emissions.

Mahalo,

Virginia Tincher

SB-2570-SD-1
Submitted on: 2/22/2022 7:30:48 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Ron Reilly	Individual	Oppose	No

Comments:

Aloha Chair Senator Dela Cruz, Vice Chair Keith-Agaran and Members of the Senate Ways and Means Committee,

I am opposed to SB 2570 SD1 and urge you to please vote NO on this measure.

My major concern is, that at this time, in our nascent transition to electrified ground transportation, we should focus our attention and resources on increasing the availability of EV charging stations that directly support only plug-in battery electric vehicles. This will benefit folks who don't have the luxury of charging at home, and thus increase the rate of electrification of ground transportation.

As currently produced hydrogen is an inefficient form of energy storage and transport, its production is based on consuming fossil fuels and the resultant release of green house gases, and finally, hydrogen charging stations are way too expensive compared to EV charging stations.

Thank you for your consideration,

Ron Reilly, Volcano Hawaii
Member of Big Island EV Association
Member of Citizens' Climate Lobby – Hawaii Island Chapter

SB-2570-SD-1
Submitted on: 2/22/2022 8:33:25 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Gary K. Tomita	Individual	Oppose	No

Comments:

Aloha Honorable Senators,

My name is Gary K. Tomita. I oppose SB2570 as tax payer's monies would be better and wisely appropriated to promote further EV sales and charging stations establishment throughout the State of Hawaii. This would further help the State achieve independence from oil and reach it's goal.

Thank you for the opportunity to voice my opinion as a tax payer and a resident of Hawaii.

Sincerely,

Gary K. Tomita

Leeward resident

SB-2570-SD-1
Submitted on: 2/22/2022 9:28:05 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Bruce Mirken	Individual	Oppose	No

Comments:

While well intended, SB 2570 is a detour and distraction from the vital work of electrifying our transportation system. Hydrogen vehicles have inherent drawbacks which will not be easily overcome in the near future, particularly when one considers the life-cycle emissions and the cost of truly "green" hydrogen, which remains relatively rare. EVs are simply a better alternative, and there's a reason why millions are on the road globally compared to the paltry number of hydrogen vehicles.

This measure will only slow down Hawaii's critical effort to expand EV charging infrasture and moving to a fossil-fuel-free future. Please vote now.

Bruce Mirken

Hilo, Hawaii

SB-2570-SD-1
Submitted on: 2/22/2022 9:29:27 AM
Testimony for WAM on 2/23/2022 10:05:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Francine Roby	Individual	Oppose	No

Comments:

I urge you to defeat SB2570 SD1 for its negative impact on the electric vehicle charger program rebates and public charging station programs that all need focused work and improvement at this time. I am an EV owner on the Big Island and am severely restricted in where I can get to without maintained and regularly spaced public fast charging stations and I need your legislative focus on getting those infrastructures fully and reliably operational, not diluting those resources and efforts with other programs like hydrogen fuel-based.

Mahalo.

Francine Roby

Ahualoa, Hawaii County