DAVID Y. IGE
GOVERNOR

MIKE MCCARTNEY
DIRECTOR

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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Statement of
MIKE MCCARTNEY
Director
Department of Business, Economic Development, and Tourism
before the

HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
AND
HOUSE COMMITTEE ON TRANSPORTATION

Tuesday, March 19, 2019
10:00 AM
State Capitol, Conference Room #325

In consideration of
SB 1000, SD2
RELATING TO ELECTRIC VEHICLES.

Chairs Lowen and Aquino, Vice Chairs Wildberger and Hashimoto, and Members of the Committees. The Department of Business, Economic Development, and Tourism (DBEDT) **offers comments** on SB1000, SD2, which requires that multi-family buildings and commercial buildings are electric vehicle (EV) charger ready.

In 2015, DBEDT served as the chair of the Act 164 Working Group, examining issues regarding requests to the board of directors of a MUD (multi-unit dwellings) for the installation of EV charging systems. The Working Group found that increasing the availability of EV charging systems located at MUDs could enable roughly one-third of households to own EVs.

DBEDT understands discussions pertaining to EV charger readiness in MUDs and commercial buildings have been occurring within the State Building Code Council (SBCC). DBEDT recommends these SBCC discussions be allowed to continue to develop.

Thank you for the opportunity to testify.

DEPARTMENT OF PLANNING AND PERMITTING
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KIRK CALDWELL
MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

March 19, 2019

The Honorable Nicole E. Lowen, Chair
and Members of the Committee on Energy
and Environmental Protection
The Honorable Henry J. C. Aquino, Chair
and Members of the Committee on Transportation
Hawaii House of Representatives
Hawaii State Capitol
415 South Beretania Street
Honolulu, Hawaii 96813

Dear Chairs Lowen and Aquino, and Committee Members:

Subject: Senate Bill No. 1000, SD 2
Relating to Electric Vehicles

The Department of Planning and Permitting (DPP) **opposes, as amended**, Senate Bill No. 1000, SD 2, which would prohibit the issuance of building permits for all new residential multi-family buildings that have 10 or more parking stalls and new commercial buildings that have 20 or more parking stalls unless at least 20 percent of the parking stalls are electric vehicle charger ready.

We agree with the intent of this Bill, which is to require that a percentage of parking stalls be set aside for electric vehicle charging stations. But we cannot support using a building permit as the enforcement tool to ensure compliance.

The City and County of Honolulu is finalizing our own requirements for electric vehicle charger-ready parking stalls, and we ask that this Bill only apply to counties that do not adopt parking standards for electric vehicle parking stalls.

Our initiative is part of our adoption of the State Energy Code and will apply to new multi-family and commercial buildings, as proposed in this Bill. We are proposing a minimum 25 percent of the parking stalls be electric vehicle charger ready. However, we would require multi-family building parking stalls provide an AC Level 1 charge, as opposed to the Level 2 proposed in this Bill. We are proposing Level 2 charge level for commercial building parking stalls.

For the reasons stated above, we ask that this Bill be held in committee, or be amended to apply only to counties that do not adopt standards for electric vehicle charging stations.

Thank you for the opportunity testify.

Very truly yours,

Kathy K. Sokugawa
Acting Director

TESTIMONY BEFORE THE HOUSE COMMITTEES ON ENERGY AND ENVIRONMENTAL PROTECTION & TRANSPORTATION

S.B. 1000, SD2

Relating to Electric Vehicles

Tuesday, March 19, 2019
10:00 a.m., Agenda Item # 1
State Capitol, Conference Room 325

Brennon Morioka
Director, Electrification of Transportation
Hawaiian Electric Company, Inc.

Aloha Chair Lowen and Chair Aquino, Vice Chair Wildberger and Vice Chair Hashimoto and Committee Members,

My name is Brennon Morioka and I am testifying on behalf of Hawaiian Electric Company, Inc., Maui Electric Company, Limited and Hawai‘i Electric Light Company, Inc. (“the Hawaiian Electric Companies”) in support of S.B. 1000, SD2, Relating to Electric Vehicles, S.B. 1000, SD2 seeks to integrate clean transportation planning with large residential and commercial development, by requiring a portion of available parking stalls be electric vehicle charger ready.

This bill has the potential to make a big impact on the availability of EV charging infrastructure, particularly in areas of high population density. These areas are typically ideal locations for EVs in that residents typically have shorter driving distances than those living in less dense, but more distant locations from the city center. Existing commercial locations and multi-family buildings face expensive retrofits to their parking facilities to be EV ready. However, by making a proactive requirement to plan for and incorporate EV charging into future large building projects, the costs will be lower.

Providing increased access to EV charging at workplaces, commercial locations and multi-family buildings are all key priorities identified in the Companies' *Electrification of Transportation Strategic Roadmap*. This bill will continue the tremendous progress that the state has made towards a cleaner and more sustainable transportation future.

Accordingly, the Hawaiian Electric Companies support S.B. 1000, SD2. Thank you for this opportunity to testify.

TESLA'S TESTIMONY IN SUPPORT OF SB 1000 SD2

being heard by the House Committee on Energy & Environmental Protection
and the House Committee on Transportation
on Tuesday, March 19, 2019 at 10:00 a.m.

Conference Room 325

Aloha Chairs Lowen and Aquino and Members of the Committees:

Thank you for the opportunity to provide testimony in support of SB 1000 SD2, which would require new residential multi-unit dwellings and commercial buildings to deploy minimum levels of EV charging infrastructure. By focusing on the deployment of EV infrastructure during initial construction, this measure recognizes the importance of "future proofing" the built environment to accommodate vehicle electrification.

Tesla's mission is to accelerate the world's transition to sustainable energy. The electrification of the transportation sector is a critical part of this to the degree it represents among the most significant sources of greenhouse gas emissions through the combustion of fossil fuels. Nationally, the transportation sector accounts for almost 30% of GHG emissions.[1] By supporting efforts to transition to EVs, Hawaii can leverage its 100% renewable energy goals to greatly advance efforts to address climate change, reduce pollution and improve air quality, and enhance the state's economic and energy security.

Access to charging represents one of the more fundamental challenges impairing demand for electric vehicles. Without easy and convenient access to EV charging, drivers will be less inclined to choose an EV over a conventional vehicle. EV charging currently suffers from the "last mile" problem, or more realistically, the "last fifty feet" problem. Specifically, while the electrical grid is fairly ubiquitous, in order to support EV charging it needs to be expanded to bring the power to where EVs are actually parked. This typically requires incremental investments in infrastructure on the customer side of the meter including electrical panel capacity, conduit and wiring, in addition to, in the case of Level 2 charging, the charging station itself. In the case of new construction, where EV charging infrastructure can be incorporated into the initial plans, studies indicate that the costs of deploying Level 2 EV charging infrastructure are quite modest, representing a de minimus share of total construction costs.[2]

The proposed approach in the measure, which would make issuance of a building permit contingent on deploying EV-ready charging infrastructure in proposed multi-family residential buildings and commercial buildings, is a sound means of ensuring that the requirement has meaningful teeth and is

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[1] US Environmental Protection Agency; see https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions

[2] See, for example, "Electric Vehicle Charging Infrastructure: Multifamily Building Standards" California Air Resources Board, April 13, 2018; p. 22. Available for download at https://arb.ca.gov/cc/greenbuildings/pdf/tcac2018.pdf

not easily ignored or circumvented. Additionally, Tesla finds the level of the requirement reasonable. While certainly ambitious, it is by no means excessive relative to similar policies that have been adopted in other jurisdictions, including cities like Atlanta, San Francisco, and Vancouver.[3] Tesla also strongly supports the threshold, as measured by the number of parking stalls, used to determine whether the 20% EV ready requirement applies to a given building. This will ensure that the policy applies to a meaningful share of newly constructed buildings.[4]

Although Tesla strongly supports this measure as drafted, we do offer a number of friendly amendments:

First, in the interest of further extending the reach of the proposed policy, Tesla recommends that new multifamily buildings with less than 10 stalls and new commercial buildings with less than 20 stalls but more than 2 stalls, should have at least 1 stall that is EV charger ready. For these smaller buildings, an exemption from the requirement could be made in instances where the permit applicant can show that it imposes substantial financial hardship.

Second, regarding the definition of "electric vehicle charger ready", in the interest of harmonizing this language with amendments we have offered on other bills and to ensure there is a consistent technical standard, Tesla requests the language be modified as follows (underline indicates additions, strikethrough indicates deletions):

> *""Electric vehicle charger ready" means that sufficient wire, conduit/raceway, termination point, and electrical panel ~~service~~ capacity, ~~overcurrent protection devices, and suitable termination points are connected to an electric vehicle charger capable of providing~~ to provide a minimum of 40 amp 208 or 240-volt branch circuit ~~nine kilowatts of electrical capacity be provided~~ per EV space."*

This language is consistent with the requirements to support Level 2 charging which provides roughly 25 miles of charge per hour and thus provides more than sufficient energy to support the typical EV driver's daily needs.

Tesla appreciates the opportunity to submit this testimony in support of SB 1000 and encourages your respective committees to pass this important measure.

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[3] In 2017 both San Francisco and Atlanta passed 20 percent EV-ready requirements. In 2018, Vancouver increased its existing EV-ready requirement from 20% to 100% for new multi-family buildings. For Atlanta see https://www.atlantaga.gov/Home/Components/News/News/10258/1338?backlist=/; For San Francisco see https://sfmayor.org/article/mayor-lee-signs-new-ordinance-make-san-francisco-electric-vehicle-ready; for Vancouver see https://pluginbc.ca/city-vancouver-goes-100-ev-new-builds/.

[4] Based on 2016 Census Data, the California Air Resources Board found that nationally, 70% of new multi-unit family buildings have fewer than 20 units. See "Electric Vehicle Charging Infrastructure: Multifamily Building Standards" California Air Resources Board, April 13, 2018; p. 14. Available for download at https://arb.ca.gov/cc/greenbuildings/pdf/tcac2018.pdf

SB-1000-SD-2
Submitted on: 3/16/2019 9:38:35 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Neil Ishida	ABC Stores	Oppose	No

Comments:

ABC Store opposes SB 100 SD2 Relating to Electric Vehicles. This bill would prohibit on or after January 1, 2020, the issuance of building permits for all new residential multi-family buildings that have ten or more parking stalls and new commercial buildings that have twenty or more parking stalls unless at least twenty per cent of the parking stalls are electric vehicle charger ready.

We believe that the market and customers should be the influencers in business trends and operations and not government mandates. Businesses spend a lot of money to construct new developments. The effective date would put a huge financial burden on those who already are going through the long permitting process but have not had approval. If their current plans are not approved by the effective date, more cost will incur for the business as they would now have to amend and reconfigure their plans to add in EV charging stations.

EV drivers come to plug into retailers charging stations to avoid increasing their electric bill at home. Retailers are finding many EV drivers are feeling entitled to charge their EVs when malls and centers are closed and charging but not shopping when malls/centers are open, taking away EV stalls from customers coming to shop during business hours. We urge you not to impose another government mandate on businesses and ask that you hold this measure. Mahalo for this opportunity to testify.

ELEMENTAL
EXCELERATOR

Written Statement of Elemental Excelerator
before the House Committees on Energy and Environmental Protection and Transportation
Tuesday, March 19, 2019

In consideration of SB 1000 SD 2
RELATING TO ELECTRIC VEHICLES

Aloha Chair Lowen, Chair Aquino, and Members of the House Committees on Energy and Environmental Protection and Transportation:

Elemental Excelerator respectfully **submits comments in support of the intent of SB 1000 SD 2**, which prohibits, on or after January 1, 2020, the issuance of building permits for all new residential multi-family buildings that have ten or more parking stalls and new commercial buildings that have twenty or more parking stalls unless at least twenty per cent of the parking stalls are electric vehicle charger ready.

Elemental Excelerator is a Honolulu-based growth accelerator program founded and operating in Hawai‘i. We have awarded over $30 million to 82 companies resulting in 56 demonstration projects in Hawai‘i & Asia Pacific. Each year, we evaluate over 500 companies and look for innovative entrepreneurs from around the world to come to Hawai‘i and find transformative solutions to help us achieve our 100% clean energy goals and solve our most pressing environmental problems. We select 15-20 companies annually that best fit our mission and fund each company up to $1 million.

Fifteen percent of Elemental Excelerator portfolio companies focus on mobility, with companies such a Proterra, eMotorWerks, and Chargetrip which specifically support solutions that advance the electrification of transportation. Bills such as SB 1000 SD 2 that support the development of EV charging infrastructure readiness signal to the broader mobility innovation sector Hawai‘i's commitment to growing its economy through innovation.

We respectfully support the intent of SB 1000 SD 2 for the following reasons:

1. **It will build capacity for the projected EV use:** Currently, Hawai‘i ranks second in the nation in electric vehicles per capita. *Hawaiian Electric’s Electrification of Transportation Roadmap* projects that at least 55% of cars on the road in 2045 will be electric. Achieving these goals will require extensive collaboration between State, county, and private actors to ensure adequate infrastructure, economic viability, grid optimization, and operational efficiency.[1]

[1] Electrification of Transportation (EoT) Strategic Roadmap. (n.d.). Retrieved from https://www.hawaiianelectric.com/clean-energy-hawaii/electrification-of-transportation

2. **It will align with each county's clean ground transportation goals:** In 2017, all four Hawai‘i counties committed to 100% clean ground transportation by 2045. Development of charging infrastructure affirms and support the goals of the counties.[2]

We respectfully submit the following comment:
The City & County of Honolulu is currently in the process of updating their building codes to include requirements for commercial and residential EV charging. We encourage State requirements to align with county building codes to ensure clear direction and coordination.

Mahalo for the opportunity to provide testimony on this legislation.

Sincerely,

Aki Marceau
Managing Director, Policy & Community - Hawai'i

[2] Hawai‘i's Mayors Commit to 100% Renewable Transportation. (2017, December 14). Retrieved from http://www.hokulea.com/hawaiis-mayors-commit-100-renewable-transportation/

To: The House Committee on Energy & Environmental Protection
and
The House Committee on Transportation
From: Sherry Pollack, 350Hawaii.org
Date: Tuesday, 3/19/19

In support of SB1000 SD2

Aloha Chairs Lowen and Aquino, Vice Chairs Wildberger and Hashimoto, and members of the EEP and TRN committees,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. On behalf of our 6,000 members and supporters, 350Hawaii.org **supports SB1000 SD2.**

EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

Thank you for the opportunity to testify on this important bill.
Sherry Pollack
Co-Founder, 350Hawaii.org

Young Democrats of Hawaii
Democratic Party of Hawaii

Testimony presented before the Committee on Energy & Environmental Protection and the Committee on Transportation
Tuesday, March 19, 2019 at 10:00 a.m.
Conference Room 325

Senate Bill 1000, Senate Draft 2

Dear Chairs Lowen and Aquino, Vice Chairs Wildberger and Hashimoto, and members of the Committees:

Senate Bill 1000, Senate Draft 2 requires that on or after January 1, 2020, all new residential multi-family buildings that have ten or more parking stalls and new commercial buildings that have twenty or more parking stalls have at least twenty percent of available parking stalls be electric vehicle charger ready. In January 2019 the Young Democrats of Hawaii conducted a member survey to identify and prioritize important issues facing young people today. Taking action on climate change was identified as one of the top three issues. YDHI members recognize that the impacts of climate change are already being felt throughout the world and in the State of Hawaii, and that actions must be taken immediately to ensure a viable future for all of Hawaii residents. The Young Democrats of Hawaii **strongly supports** the passing of SB1000, SD2 for the following reasons:

1) Hawaii is second to California in the number of electric vehicles per capita. One of the barriers to owning an EV is the lack of charging infrastructure. This bill will allow for the expansion of charging stations in residential and commercial buildings, while also decreasing the cost of living by saving residents on average 35% on fuel costs.
2) Senate Bill 1000, SD 2 will help Hawaii meet its goal of 100% clean energy by 2045 as well as the Paris Agreement. When the federal government decided to step away from the Paris Agreement in 2017, the State of Hawaii became the first state to enact legislation to implement the goals of the global accord. Hawaii must continue to lead by example for the rest of the nation and the world in climate change mitigation.

Thank you for the opportunity to testify.

Sincerely,

Executive Committee
Young Democrats of Hawaii

SB-1000-SD-2
Submitted on: 3/14/2019 9:56:34 PM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Erica Scott	Individual	Support	No

Comments:

ORGANIZING *for* ACTION

To: The House Committees on Energy and Environmental Protection; and Transportation
From: Brodie Lockard, Hawaii State Climate Lead, Organizing for Action
Date: Tuesday, March 19, 2019, 10:00 am

In strong support of HB SB1000 SD2

Dear Chairs Lowen and Aquino, Vice Chairs Wildberger and Hashimoto, and Committee Members—

Organizing for Action strongly supports SB1000 SD2.

In January 2018 an anemic 0.79 percent of passenger vehicles in the state were electric [1]. In February 2019 the percentage was still just 0.81. We should be doing everything we can to increase that percentage [1].

Installing or upgrading EV charging stations can cost up to $12,000 apiece. The price to include an EV charging station during new construction is about $900. We're going to need them, very soon, and planning for them during new construction will save millions of dollars.

Nearly every major automaker said in 2017 that they plan to move to all-electric vehicles (EVs), and will each introduce 10 to 50 new EV models within one to seven years. Volkswagen and General Motors have already scheduled the end of their gasoline vehicle production.

As the number of zero-emissions vehicles (ZEVs) in Hawaii inevitably grows, the number of charging stations must grow to accommodate them. Large parking areas are especially important because ZEV drivers cannot just park "next door" where there might not be a charging stations available. When gas-powered cars are no longer for sale—not long from now—will Hawaii be equipped to charge its ever-growing number of ZEVs?

The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii [2]. This bill will also help reduce Hawaii's greenhouse gas emissions by helping to make charging ZEVs a non-issue.

Please support SB1000 SD2. It will help pave the way for our clean energy goals, and the imminent end of gasoline cars.

Thank you for the opportunity to testify.

[1] http://files.hawaii.gov/dbedt/economic/data_reports/energy-trends/Energy_Trend.pdf
[2] https://www.eia.gov/state/analysis.php?sid=HI

Brodie Lockard

Hawaii State Climate Lead, Organizing for Action

TESTIMONY TO THE HOUSE COMMITTEES ON ENERGY AND ENVIRONMENTAL PROTECTION, AND TRANSPORTATION
State Capitol, Conference Room 325
415 South Beretania Street
10:00 AM

March 19, 2019

RE: SENATE BILL NO. 1000 SD 2, RELATED TO ELECTRIC VEHICLES

Chairs Lowen and Aquino, Vice Chairs Wildberger and Hashimoto, and members of the committees:

My name is Gladys Quinto-Marrone, CEO of the Building Industry Association of Hawaii (BIA-Hawaii). Chartered in 1955, the Building Industry Association of Hawaii is a professional trade organization affiliated with the National Association of Home Builders, representing the building industry and its associates. BIA-Hawaii takes a leadership role in unifying and promoting the interests of the industry to enhance the quality of life for the people of Hawaii. Our members build the communities we all call home.

BIA-Hawaii is opposed to S.B. 1000 SD 2, which prohibits, on or after January 1, 2020, the issuance of building permits for all new residential multi-family buildings that have ten or more parking stalls and new commercial buildings that have twenty or more parking stalls unless at least twenty per cent of the parking stalls are electric vehicle charger ready.

While providing twenty (20%) percent of parking stalls as "electric vehicle charger ready" may be possible in a parking structure, the requirement in a paved parking lot in a multi-family development would be difficult to achieve. Parking stalls in multi-family development projects are usually assigned based on proximity to the individual units. It is impossible to predict which prospective buyers would own or purchase an electric vehicle, so it would be impossible to ensure that the appropriate parking stall would be near the appropriate unit.

We are opposed to S.B. 1000 SD 2 as presently drafted and appreciate the opportunity provide comments on this matter.

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HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
HOUSE COMMITTEE ON TRANSPORTATION
March 19, 2019, 10:00 A.M.
Room 325
(Testimony is 3 pages long)

TESTIMONY IN STRONG SUPPORT OF SB 1000 SD2

Aloha Chair Lowen, Chair Aquino, and members of the Committees:

Blue Planet Foundation strongly supports Senate Bill (SB) 1000 SD2, which requires that on or after January 1, 2020, all new residential multi-family buildings that have ten or more parking stalls and new commercial buildings that have twenty or more parking stalls have at least 20% of available parking stalls that are electric vehicle charger ready. This measure **applies only to new construction** of these building types—an important first step.

Electric vehicles are the fastest growing segment of new cars in Hawaii. In 2018, EV registrations grew 25 percent, while registrations of gasoline-powered vehicles grew only 0.8 percent.[1] We expect over 10,000 EVs registered in Hawaii by the end of the year—a number that is expected to grow exponentially as new EV models with longer ranges and lower prices hit the market.

Electric vehicles will play an integral role in Hawaii's clean energy future. While EVs that use the existing electricity grid to charge still use mostly fossil fuel, they use that fuel more effectively than burning fuel directly in a typical gasoline engine. This is why EVs are much less expensive to "fuel" per mile than their gasoline counterparts. Further, by using stored electrical energy, EVs can take advantage of intermittent solar, wind, and other clean energy resources. Most vehicles sit idle over 22 hours of the day, so they can become *de facto* energy storage devices if their batteries are plugged into the grid when they are not in use. With smart grid infrastructure in place, EVs become an essential component to electricity load and clean energy resource balancing—in addition to providing clean mobility solutions for Hawaii residents.

Still, over one million gasoline-powered vehicles are on Hawaii's roads—and from them comes nearly five million metric tons of climate-changing carbon pollution. What's worse, while Hawaii has made good progress in reducing its carbon emissions from the electricity sector, emissions from ground transportation have been increasing in recent years.

The International Energy Agency has found that "the availability of chargers emerged as one of the key factors for contributing to the market penetration of EVs." Unlike gasoline car owners,

[1] DBEDT Monthly Energy Trends, January 2019 (http://dbedt.hawaii.gov/economic/energy-trends-2/).

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55 Merchant Street 17th Floor • Honolulu, Hawai'i 96813 • 808-954-6161 • blueplanetfoundation.org

charging behavior for EV owners indicates that more than 80% of EV drivers charge their cars at home or at work.[2] In addition, a large share of the Hawaii population lives in high density, multi-family residential buildings. The vast majority of parking facilities currently lack EV chargers.

By ensuring that we are "future proofing" new construction projects, this measure is an important step toward increasing electric vehicle charging options for those who don't have access to charging at home or at work.

Hawaii can expect more residents to choose EVs or gasoline vehicles as prices decrease. Battery costs have fallen precipitously over the past several years so that in many cases, the total cost of ownership for EVs is lower than for conventional vehicles. Experts expect battery prices to continue to fall and as automakers increase the number of models and volume of EVs in the next few years, the upfront cost of EVs is expected to reach upfront cost parity with conventional vehicles by 2024.[3]

In part due to falling costs and increasing consumer demand, and in part due to government policies supporting EVs, nearly all of the world's leading automakers have announced aggressive strategies and investments in EVs during the past two years.

Installing EV-ready wiring is cheaper pre-construction

The most challenging aspect of EV charger installation is the common lack of electrical capacity and distributed subpanels to support broad deployment of charging infrastructure. **By choosing not to install the wiring and conduit upfront in new construction, developers are forcing tenants to pay for expensive retrofit costs to upgrade power capacity near their parking stalls**.

Studies have shown that **installing EV infrastructure at the time of construction can be 91% less expensive than post-construction retrofits** and per stall installation costs can be reduced through economies of scale.[4] While this bill would not require the installation of the actual EV charging infrastructure, it would require that the power capacity and conduit be set up during construction, which would dramatically reduce retrofit costs at the time of charger installation, creating cost savings downstream for residents and tenants.

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[2] https://www.iea.org/publications/freepublications/publication/GlobalEVOutlook2017.pdf

[3] *See* Bloomberg New Energy Finance, https://bnef.turtl.co/story/evo2018?teaser=true.

[4] *See* http://evchargingpros.com/wp-content/uploads/2017/04/City-of-SF-PEV-Infrastructure-Cost-Effectiveness-Report-2016.pdf.

Conclusion

Blue Planet Foundation strongly supports SB 1000 SD2. Electric vehicles are better for the environment and the economy and can help Hawaii reach its renewable energy and transportation goals. The time has come when Hawaii residents want to purchase electric vehicles but are in need of convenient and affordable charging options. This bill will ensure that the EV charging infrastructure network necessary to support the influx of electric vehicles can be installed more efficiently and cost-effectively in new construction projects. It will provide new EV owners—particularly those that will live in new multi-family residential buildings—with the confidence that they will be able to access charging at home, at the workplace, and in public spaces.

Thank you for the opportunity to testify.

SB-1000-SD-2
Submitted on: 3/18/2019 10:06:55 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Joseph Kohn MD	We Are One, Inc. - www.WeAreOne.cc - WAO	Support	No

Comments:

EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

www.WeAreOne.cc

SB-1000-SD-2
Submitted on: 3/18/2019 11:08:10 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Noel Morin	Big Island EV Association	Support	No

Comments:

Aloha Committee on Transportation,

Thank you for this opportunity to provide testimony in support of SB 1000. My name is Noel Morin. I lead our Big Island Electric Vehicle Association, a chapter of the Electric Auto Association. Our mission is to increase the adoption of sustainable transportation and to reduce fossil energy dependence in Hawaii.

Electric vehicles represent an important part of our state's clean energy objectives. It's still fairly nascent in its level of adoption – electric vehicles represent less than 1% of the state's passenger vehicles. There are a number of barriers to adoption, including access to charging stations, especially in Multi-Unit Dwellings and workplaces. Anything that we can do to mitigate this barrier will contribute to improved adoption and a step shift towards electrification.

SB1000 will allow for future-proofing of our infrastructure and allow Hawaii to better support the increasing number of electric cars. It's more cost-effective to build in anticipation of needs (vs retrofitting). The number of slots/percentage of slots might be negotiable but the concept of building with future needs in mind should be seriously considered. I think that ensuring that the intent is accomplished by ensuring that compliance is built-in is critical (construction-permit dependency is important.)

Sincerely,

Noel Morin

Big Island Electric Vehicle Association

Email: communications@ulupono.com

HOUSE COMMITTEES ON ENERGY & ENVIRONMENTAL PROTECTION AND TRANSPORTATION
Tuesday, March 19, 2019 — 10:00 a.m. — Room 325

Ulupono Initiative Supports SB 1000 SD 2, Relating to Electric Vehicles

Dear Chair Lowen, Vice Chair Wildberger, Chair Aquino, Vice Chair Hashimoto, and Members of the Committees:

My name is Murray Clay and I am the Managing Partner of Ulupono Initiative, a Hawai'i-based impact investment firm that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally produced food; increase affordable clean renewable energy; and better manage waste and fresh water resources.

Ulupono supports SB 1000 SD 2, which requires that on or after January 1, 2020, all new residential multi-family buildings that have ten or more parking stalls and new commercial buildings that have twenty or more parking stalls have at least twenty percent of available parking stalls be electric vehicle charger ready, because it will increase the use of more efficient, cleaner forms of transportation and help to reduce Hawai'i's dependence on imported fossil fuels.

Electric vehicles (EVs) are an important avenue to address Hawai'i's pressing climate issues and align with the State's energy and environmental goals. While Hawai'i's electric power sector continues to make progress toward its 100 percent renewable portfolio standard (RPS) mandate, our transportation sector has received little attention.

EVs currently offer an effective option to progress clean renewable ground transportation and immediate benefits to Hawai'i.

- EVs can alleviate Hawai'i's high cost of living
- EVs provide immediate impact to reduce our dependence on fossil fuels and decrease greenhouse gas (GHG) emissions
- EVs are prime for market acceleration
- Hawai'i should be doing more to promote EVs and EV infrastructure

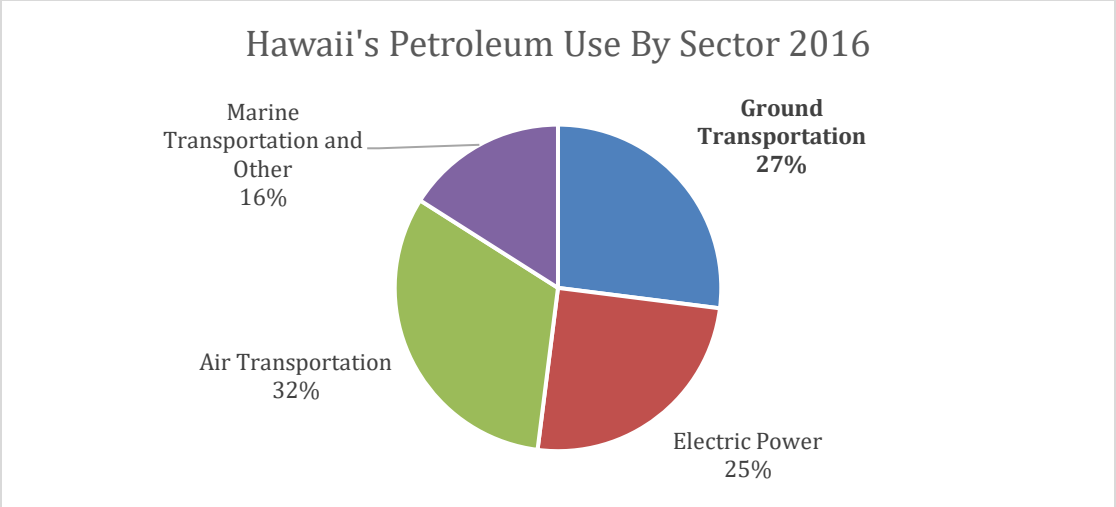
EVs Can Alleviate Hawai'i's High Cost of Living

EVs are an increasingly affordable option for all. For example, the 2019 Nissan Leaf's average MSRP is $33,095. After the Federal tax credit is considered, the purchase price is $25,595, which is less than the best selling sedan in the country, the 2019 Toyota Camry. Attachment A to our testimony compares the purchase price of non-luxury EVs with top-selling sedans and the Toyota Tacoma (the top selling vehicle in Hawai'i).

EVs are also cheaper to operate and maintain because they have less moving parts and are more fuel efficient. According to a recent study by the Union of Concerned Scientists, Honolulu drivers could save more than $500 per year by switching to an EV.

EVs Provide Immediate Energy and Environmental Impact

Ground transportation alone utilizes more than a quarter of the state's imported petroleum. Electrifying ground transportation will reduce our demand for imported fossil fuels, keeping millions of dollars in the state and cutting harmful pollution.



Source: Hawaii State Energy Office – Hawaii Energy Facts & Figures

Converting from petroleum-based vehicles to EVs immediately reduces GHG emissions, helping combat climate change and its impacts on our islands. EVs produce zero-emissions at the tailpipe, and even when full lifecycle emissions (from manufacturing through disposal) are considered, EV emissions are approximately 50 percent lower than internal combustion engine (ICE) vehicles.

EVs can also support the integration of more renewables on the electric grid with smart charging technology and rate structures. Thus, proliferating EVs throughout Hawai'i can help accelerate progress towards the State's 100 percent RPS goal, as well as contribute to the State's Paris Agreement commitments and carbon neutral goal.

EVs Are Prime For Market Acceleration

From a market perspective, EV adoption in Hawai‘i has shown impressive growth, with the state ranking second in the nation behind California in the number of EVs per capita. As of November 2018, there were more than 8,000 passenger EVs registered in Hawai‘i, a 24 percent growth from the previous year. This progress is despite not having strong supporting policies as seen in other states, municipalities and countries.

Based on global and local trends, these adoption numbers are expected to increase exponentially by 2030. Major automobile manufacturers, from Volvo to Volkswagen, have revealed plans to offer electric versions of all their vehicle models. Even Ford announced it will build an all-electric F-150 pickup truck, the top selling vehicle in the country. Policies across the globe are further supporting this transition; in fact, Britain and France have committed to end sales of gas-powered vehicles by 2040.

Hawai‘i Should Be Doing More

EVs are the future, but they currently only represent less than one percent of all passenger vehicles in the state. Hawai‘i must encourage this still nascent market and be prepared with the necessary infrastructure.

Public EV charging stations are a vital component of the EV system. They provide access to charging for drivers who may not be able to charge at home, such as residents who live in multi-unit dwellings, and alleviate range anxiety for all EV drivers, a top-cited barrier to purchasing EVs. Similar to the benefits that community solar offers to renters and apartment residents, public chargers open up the opportunity and feasibility of owning an EV to more people, increasing equity and access.

Requiring qualifying facilities to be “EV ready” is smart and essential future proofing. Installing EV infrastructure post-construction costs three times more than at the time of new construction, and it represents approximately less than one percent of total new construction project cost. Given that building construction has a ~30 year life, this bill is a fiscally prudent way for the private sector to prepare for 2049 and beyond, when EVs are expected to be abundant and charging will be critical.

Other states and cities recognize the importance of EV infrastructure and already have policies that require public and private parking facilities to be built to support EV charging. Below are examples of leading state and city EV-ready requirements:

- California – 8 percent of parking stalls at nonresidential properties
- Vancouver – 100 percent of parking stalls at multi-unit residential and 10 percent of stalls at commercial properties
- New York City – 20 percent of parking stalls at parking facilities (open lots and garages)
- Atlanta – 20 percent of parking stalls at new commercial and multifamily properties
- San Francisco – 20 percent of new residential, commercial and municipal properties

If the State of Hawai‘i is serious about the sustainability and resiliency of our communities, it should encourage EVs and EV infrastructure.

Ulupono strongly supports the intent and concept of this bill. One consideration for the committees is to also require significant reconstruction of multi-family and commercial buildings to include EV charger ready as part of any major reconstruction, as other states and cities have mandated.

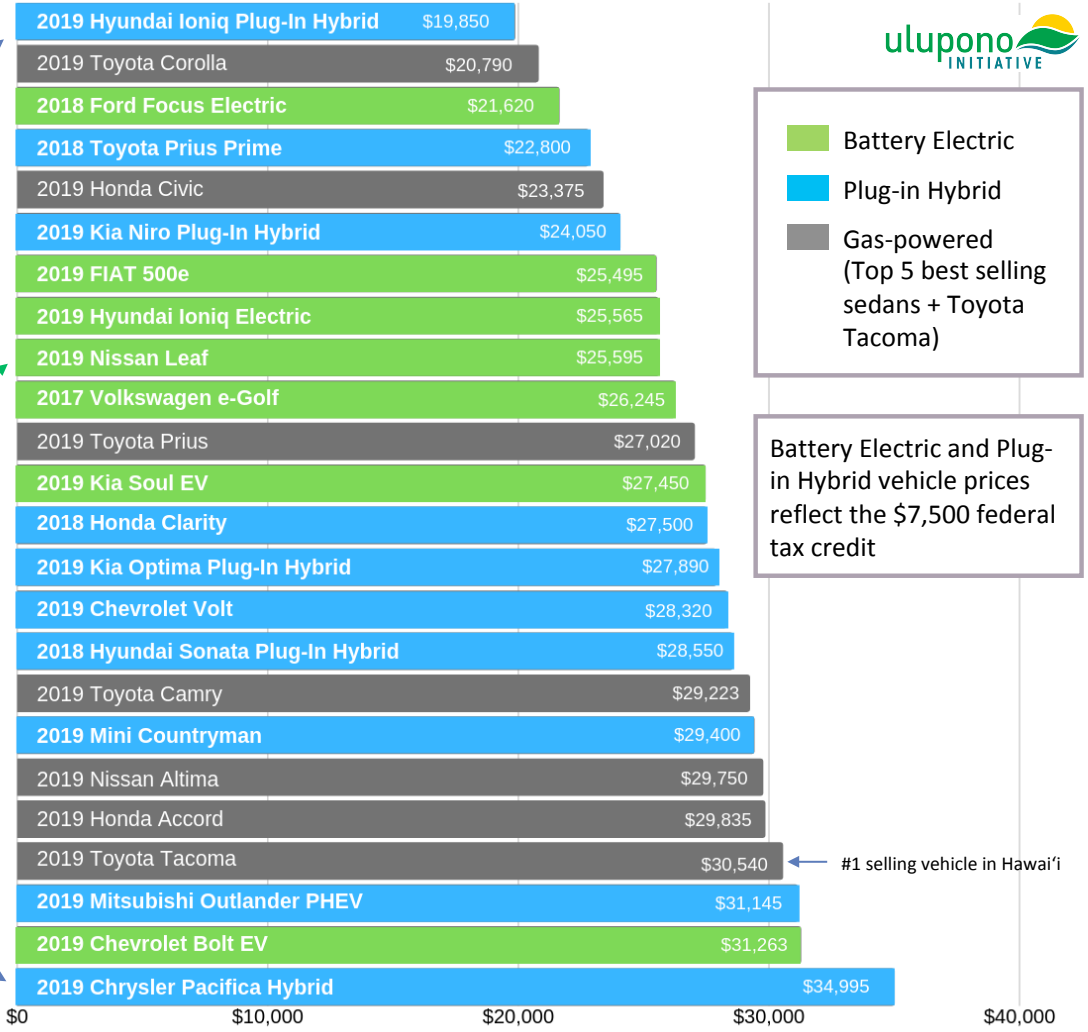
As Hawai‘i’s energy issues become more complex and challenging, we appreciate these committees’ efforts to look at policies that support clean ground transportation. Thank you for this opportunity to testify.

Respectfully,

Murray Clay
Managing Partner

Many Affordable EV Options

Non-Luxury Vehicle Models (attachment A)



ulupono INITIATIVE

- Battery Electric
- Plug-in Hybrid
- Gas-powered (Top 5 best selling sedans + Toyota Tacoma)

Battery Electric and Plug-in Hybrid vehicle prices reflect the $7,500 federal tax credit

#1 selling vehicle in Hawai‘i

Nationwide Average MSRP Data from Edmunds – January 2019

TESTIMONY OF TINA YAMAKI
PRESIDENT
RETAIL MERCHANTS OF HAWAII
March 19, 2019

Re: SB 1000 SD2 RELATING TO ELECTRIC VEHICLES

Good morning Chairperson Lowen, Chairperson Aquino and members of the House Committee on Energy & Environmental Protection and the Committee on Transportation. I am Tina Yamaki, President of the Retail Merchants of Hawaii and I appreciate this opportunity to testify.

The Retail Merchants of Hawaii (RMH) is a statewide not-for-profit trade organization committed to supporting the retail industry and business in general in Hawaii. The retail industry is one of the largest employers in the state, employing 25% of the labor force.

Retailers continue to be concerned about our aina and have supported many initiatives that preserve and protect our environment. However, the Retail Merchants of Hawaii **STRONGLY OPPOSES** SB 1000 SD2 Relating to Electric Vehicles. This bill would prohibit on or after January 1, 2020, the issuance of building permits for all new residential multi-family buildings that have ten or more parking stalls and new commercial buildings that have twenty or more parking stalls unless at least twenty per cent of the parking stalls are electric vehicle charger ready.

We believe that the market and customers should be the influencers in business trends and operations and not government mandates. Businesses spend a lot of money to construct new developments. The effective date would put a huge financial burden on those who already are going through the long permitting process but have not had approval. If their current plans are not approved by the effective date, more cost will incur for the business as they would now have to amend and reconfigure their plans to add in EV charging stations.

We also do not agree on mandating the number of EV ready stalls that businesses must have. Business responds to the customers needs. Many of our members have found EV drivers in the surrounding neighborhood and condominiums come to plug into the retailers charging stations to avoid increasing their electric bill at home. We are finding many residents are feeling entitled to be able to charge their EVs when the malls and centers are closed – in the middle of the night or early morning hours - hours before the mall and centers opens for business. Or these residents leave their cars charging when the mall/centers are open AND are NOT shopping in the stores while their batteries are being recharged. These residents are taking away the EV stall from customers coming to shop during mall hours. And the money that is spent in the stores in turn supports our family, friends and neighbors who work in the stores.

We would also like to point out that with the advancement of technology, the newer model Electric Vehicles can travel further distances. There are also other cars being developed that uses alternatives to traditional gas-powered car like that of hydrogen fuel cell. We are concerned that government will begin to mandate that businesses also provide ready “reserved parking stalls" for all of the various types alternative gas powered vehicles including the EV delivery trucks and that businesses with large parking lots would just become a reserved parking charging station for the public and not able to offer convenient parking for the customers that actually shop in the stores.

Government mandates like this does drive up the cost of doing business that in turn drives up the cost of living in Hawaii. We should be looking at encouraging new businesses to develop independent charging stations like those of gas stations. We urge you not to impose another government mandate on business and ask that you hold this measure.

Mahalo for this opportunity to testify.

3610 Waialae Ave • Honolulu, HI 96816 • (808) 592-4200 • tyamaki@rmhawaii.org

BOMA HAWAII
Building Owners and Managers Association

"Advancing the Commercial Property Management Industry through Education, Networking and Advocacy"

Testimony to the
House Committee on Energy & Environmental Protection and
House Committee on Transportation

March 19, 2019
10:00 a.m.
State Capitol - Conference Room 325

RE: SB 1000 SD2 Relating to Electric Vehicles

Aloha Chairs Lowen and Aquino, Vice Chairs Wildberger and Hashimoto and members of the committees:

We are testifying on behalf of the Building Owners and Managers Association of Hawaii. BOMA Hawaii supports energy efficient alternatives in transportation but opposes inflexibility in regulations. This bill does not adequately address the lead time necessary for development, planning, financing and construction of new buildings. We respectfully request an implementation date of at January 1, 2021.

As electric vehicle usage increases, there has been a corresponding need for electric vehicle charging stations. This emerging need is creating a marketplace demand. Many building owners have installed EV charging stations and have successfully used them as profit centers as well as an amenity to attract new business and tenants. Others are reluctant to take on the cost (installation cost, lost revenue from lost parking spaces, etc.), ongoing maintenance and management responsibilities, and liability. Where building owners are able to balance the benefits and potential draw backs, and where it makes economic sense, property owners will move forward to meet the need, without federal, state or local mandates.

The Building Owners and Managers Association Hawaii is a primary source of information on office building development, leasing, building operating costs, energy consumption patterns, local and national building codes, legislation, occupancy statistics and technological developments.

If this bill advances, we request to be a part of the dialogue concerning its impacts on the community and economy.

Thank you for the opportunity to testify.

BOMA Hawaii • bae@bomahawaii.com • 808-447-1840 • 1099 Alakea Street Suite 2530 • Honolulu HI 96813

SB-1000-SD-2
Submitted on: 3/17/2019 1:43:05 PM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Michelle Matson	Individual	Support	No

Comments:

SB-1000-SD-2
Submitted on: 3/17/2019 5:01:47 PM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Greg Puppione	Individual	Support	No

Comments:

We need to encourage as much EV infrastructure as possible. This seems like a great way to do it. Please support this bill. Thank you!

SB-1000-SD-2
Submitted on: 3/17/2019 9:45:05 PM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Joy Silver	Individual	Support	No

Comments:

EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

SB-1000-SD-2
Submitted on: 3/17/2019 10:11:39 PM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Cory Harden	Individual	Support	No

Comments:

Aloha legislators,

More charging stations, more renewable-energy electric-powered vehicles, less imported fuel vulnerable to shipping strikes and bad weather!

mahalo,

Cory Harden

SB-1000-SD-2
Submitted on: 3/17/2019 10:44:37 PM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Judith Michaels	Individual	Support	No

Comments:

SB-1000-SD-2
Submitted on: 3/18/2019 1:06:24 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
christine trecker	Individual	Support	No

Comments:

If Hawaii is to make the critical transition to environmentally friendly EVs, we must start building the infrastructure necessary to make it happen. I urge you to support SB1000 which requires at least 20% of parking stalls in new residential and commercial buildings be EV charger-ready.

Thank you.

SB-1000-SD-2
Submitted on: 3/18/2019 2:25:56 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Barbara L. George	Individual	Support	No

Comments:

SUPPORT.

SB-1000-SD-2
Submitted on: 3/18/2019 8:31:42 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Constance Keoahunui Uale Warrington	Individual	Support	No

Comments:

I strongly urge support of this bill. EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

SB-1000-SD-2
Submitted on: 3/18/2019 8:32:05 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Severine Busquet	Individual	Support	No

Comments:

Aloha all:

I have an EV car for 6 months which provides me with highly confortable commutes without noise and vibrations. In addition EVs reduce Hawaii's greenhouse gas emissions and play a key role in our transition to 100% clean energy.

While it was not a problem 6 months ago, I am now strungling to find a EV-charger available during my commutes. The lack of adequate EV charging infrastructure is a key barrier to EV adoption.

For these reasons I support SD1000 SD2 which will help by making parking and charging EVs a non-issue.

Thanks for your attention.

Severine Busquet

Honolulu, Hi 96825

SB-1000-SD-2
Submitted on: 3/18/2019 8:44:35 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Joan Gannon	Individual	Support	No

Comments:

To: EEP/TRN Committees

From Joan Gannon

Re: SB1000 Please support this bill. It will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

Thank you

SB-1000-SD-2
Submitted on: 3/18/2019 9:46:58 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Nanette Vinton	Individual	Support	No

Comments:

Honorable Chairs and Commitee Members,

I am a long-time EV owner and am writing in support of SB1000 SD2 which would prohibit issuance of building permits for all new residential multi-family buildings with ten or more parking stalls and new commercial buildings with twenty or more parking stalls *unless* at least twenty percent of the parking stalls are electric vehicle charger ready.

I've owned several EVs since 2013 and am happy to see the significant growth in the number of these vehicles over the past few years. However, it seems that the number of EV chargers available has not grown at the same pace. I have friends who have been deterred from EV ownership because charging infrastructure/availability concerns. We need to be prepared for the future EV growth as more EV models will be coming out over the next year or two.

I believe that having a proper charging infrastructure to support EVs at home, work and public places is key to continued EV adoption and to support the State's Clean Transportation goals. This bill would prepare Hawaii for future EV growth.

Thank you for your consideration.

Sincerely,

Nanette Vinton

SB-1000-SD-2
Submitted on: 3/18/2019 11:17:26 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Jonathan Boyne	Individual	Support	No

Comments:

EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

SB-1000-SD-2
Submitted on: 3/18/2019 11:46:32 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Dale Jensen	Individual	Support	No

Comments:

Dear Senators,

EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging EVs a nonissue. Please pass this bill.

Sincerely,

Dale Jensen, Professional Engineer, Kailua, Oahu.

SB-1000-SD-2
Submitted on: 3/18/2019 12:10:40 PM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Janet Graham	Individual	Support	No

Comments:

Thank you for the opportunity to submit testimony in support of SB 653. Passing this bill is a way of supporting Honolulu zeroe emission goals and showing everyone, especially youngsters, who showed up for the‘Ä• ina at Friday's rally that you care about our future.

EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

Mahalo

Janet

LATE

SB-1000-SD-2
Submitted on: 3/19/2019 12:26:35 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Caroline Kunitake	Individual	Support	No

Comments:

Aloha,

Please support SB1000 SD2.

EVs play a key role in our transition to 100% clean energy. As the number of Zero Emission Vehicles (ZEVs) inevitably grows, the number of designated parking spaces and supply equipment points must grow to accommodate them. The transportation sector uses almost two-thirds of all petroleum consumed in Hawaii. This bill will help reduce Hawaii's greenhouse gas emissions by making parking and charging ZEVs a nonissue.

Mahalo,

Caroline Kunitake

LATE

SB-1000-SD-2
Submitted on: 3/19/2019 2:41:43 AM
Testimony for EEP on 3/19/2019 10:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Janet Pappas	Individual	Support	No

Comments:

Dear Legislators,

Please pass this bill. People cannot drive electric cars if they have no place to charge them. Electric cars are the greatest. We have owned the same car since 2011 and have gone 65,000 miles without a drop of gas or oil. Our maintenance fees have been only new tires and new windshield wipers. No oil change, no transmission fluid, no radiator, no emissions, great pickup from 0 to 50+. What's not to like? Hawaii can be the leader in the number of EVs per capita. Let's do it!