DAVID Y. IGE
GOVERNOR

MIKE MCCARTNEY
DIRECTOR

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377

Statement of
MIKE MCCARTNEY
Director
Department of Business, Economic Development, and Tourism
before the
SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT & TOURISM
AND
SENATE COMMITTEE ON TRANSPORTATION

Friday, February 8, 2019
2:00 PM
State Capitol, Conference Room #225

In consideration of
SB 1000
RELATING TO ELECTRIC VEHICLES.

Chairs Wakai and Inouye, Vice Chairs Taniguchi and Harimoto, and Members of the Committees. The Department of Business, Economic Development, and Tourism (DBEDT) **offers comments** on SB 1000, 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.

DBEDT believes that SB1000 Section 2 would better achieve the Legislature's goals in a different section of the Hawaii Revised Statutes.

Thank you for the opportunity to testify.

chargepoint.com

ChargePoint, Inc.
254 East Hacienda Avenue | Campbell, CA 95008 USA
+1.408.841.4500 or US toll-free +1.877.370.3802

Before the Senate Committee on Transportation
February 6, 2019
SB 1000: Relating to Electric Vehicles

Aloha Chair Inouye, Vice Chair Harimoto, and members of the Committee,

On behalf of ChargePoint, Inc. (ChargePoint), I would like to testify in support for SB 1000. The bill would require all new residential multi-family and commercial buildings to have a minimum number of "EV-ready" parking stalls capable of supporting the installation of electric vehicle charging equipment.

ChargePoint is the world's largest and most open electric vehicle ("EV") charging network with more than 60,000 Level 2 EV and DC fast charging spots around the country, including over 360 public and private ports in Hawaii. ChargePoint's customers include major employers, municipalities, universities, utilities, real estate developers and parking garage facility owners and operators that provide EV charging and related services to EV drivers. ChargePoint customers in Hawaii include the Aulani Disney Resort, the City and County of Honolulu, the University of Hawaii, Target, BMW of Hawaii, Kapolei Lofts, Maui Ocean Club, Maui Electric, and many more. Every 2 seconds, a driver connects to a ChargePoint station, and drivers on the ChargePoint network have driven over 1.2 billion gas-free miles.

SB 1000 takes a critical step in helping to reduce the upfront cost of installing electric vehicle charging equipment by ensuring that parking stalls at both multifamily and commercial facilities can take advantage of the significantly lower cost of deploying the electrical infrastructure necessary for EV charging at the time of construction. This can lead to as much as a 70% cost savings per project when installing EV charging equipment in parking stall that are EV-ready. ChargePoint supports this legislation and respectfully asks for your Aye vote.

Thank you for the opportunity to provide this testimony.

Anthony Harrison
Director of Public Policy
ChargePoint, Inc.

SB-1000
Submitted on: 2/6/2019 2:45:09 PM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Richard Emery	Testifying for Associa	Oppose	No

Comments:

With residential condominium buildings, stalls are owned by the unit owners and only a few are guest stalls for the public. Owners are required to pay for their own charging today and that cost should not be forced on the other owners. Owner-owned stalls would each needs its own electric meter and the ability to read to accomplish have owners with electric vehicles pay for their usage. I am OK if new buildings had 25% of public stalls EV ready.

HAWAII LEGISLATIVE ACTION COMMITTEE
community ASSOCIATIONS INSTITUTE

February 6, 2019

Honorable Lorraine R. Inouye
Honorable Breene Harimoto
Senate Committee on Transportation
&
Honorable Glenn Wakai
Honorable Brian T. Taniguchi
Senate Committee on Energy, Economic Development and Tourism
415 South Beretania Street
Honolulu, Hawaii 96813

Re: SB1000/OPPOSITION

Dear Chair Inouye, Chair Wakai, Vice Chair Harimoto, Vice Chair Taniguchi and Committee Members:

The Community Associations Institute, Legislative Action Committee ("CAI LAC") hereby submits this testimony in opposition to SB1000.

In December of 2015, under Act 164, the State Energy Office within the State of Hawaii Department of Business, Economic Development and Tourism Hawaii with assistance by the Legislative Reference Bureau led a working group to examine the same issue SB1000 tries to address, i.e., promoting the use of electric vehicles in Hawaii through improving electric infrastructure in multi-family dwelling units. The undersigned was a member of this working group as a representative of the Community Associations Institute. A copy of this working group's final report can be found at the following webpage:

http://energy.hawaii.gov/wp-content/uploads/2013/07/Act-164_EV-Working-Group-Report_FINAL.pdf

The working group found that energy building codes in Hawaii need to be amended and upgraded in order to pave the way for incorporating EV charging infrastructure in the design and construction of new buildings. Hawaii is currently using the 2015

IECC code, which does not include EV charging system guidelines. Unfortunately, passing SB1000 at this point would be putting the cart before the horse.

The working group also found that workplace charging stations, in comparison with multi-family dwelling units charging stations, may potentially benefit a larger number of customers and more directly address the grid challenges faced by the State. EVs should be timed to charge at periods that best support the integration of renewable energy and do not overburden the electric grid, such as during the middle of the day when solar generation is at its peak, not when energy usage and grid loads are high.

CAI LAC is concerned that SB1000 not only prematurely imposes restriction on building permits for new multi-family residential building, but also will significantly exacerbate the lack of affordable housing in Hawaii. A better alternative lies in work place charging with more efficient direct current fast chargers.

CAI LAC represents the condominium and community associations industry, and respectfully request the Committee to reject or defer SB1000. Thank you for the opportunity to testify.

Very truly yours,

Na Lan

Na Lan

SB-1000
Submitted on: 2/7/2019 12:35:53 PM
Testimony for EET on 2/8/2019 2:00:00 PM

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

Comments:

Aloha,

SB1000 allows for future-proofing of our commercial infrastructure - it will allow Hawaii to better support the increasing number of electric cars. It's always 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 consider.

Thanks for supporting this.

Noel Morin

President - Big Island Electric Vehicle Association

TESLA'S TESTIMONY IN SUPPORT OF SB 1000

being heard by the Senate Committees on Transportation and Energy, Economic Development, and Tourism on Friday, February 8, 2019 at 2:00 p.m. Room 225

Aloha Chairs Inouye and Wakai and Members of the Committees:

Thank you for the opportunity to provide testimony in support of SB 1000, 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 not easily ignored or circumvented. Additionally, Tesla finds the level of the requirement reasonable.

---

[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

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]

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

First, Tesla asks that the threshold for when a building is subject to the requirement be lowered. Tesla is concerned that in implementing the requirement only if a multi-unit residential building has 20 or more parking stalls and a commercial building has 40 or more parking stalls, the proposal will result in a significant number of buildings being exempt and limit the effective reach of the policy. For example, 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.[4] While circumstances may be different in Hawaii, this data suggests that the proposed thresholds are likely to dramatically limit the practical impacts of the proposed policy. Tesla recommends setting the threshold at 10 or more parking stalls for multi-unit residential building and 20 or more parking stalls for commercial buildings. In considering this proposal, Tesla would support lowering the requirement from the proposed 25% of spaces to 20% if that would make this tradeoff more palatable. Finally, as a best practice the calculation of the number of spaces should be rounded up to the nearest whole number when utilizing percentage requirements.

Second, and also in the interest of extending the practical impacts 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.

Third, 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."*

[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] *Id.* p. 14

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 with the proposed amendments discussed above.

SB-1000
Submitted on: 2/7/2019 12:50:18 PM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Paxton Jerry	Testifying for Tesla	Support	No

Comments:

TESTIMONY BEFORE THE SENATE COMMITTEES ON TRANSPORTATION AND ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM

S.B. 1000

Relating to Electric Vehicles

Friday, February 8, 2019
2:00 PM, Agenda # 5
State Capitol, Conference Room 225

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

Aloha Chair Inouye and Chair Wakai, Vice Chair Harimoto and Vice Chair Taniguchi and Committee Members,

My name is Brennon Morioka and I am testifying on behalf of Hawaiian Electric Company Inc. and its subsidiary utilities Maui Electric Company, Limited and Hawaii Electric Light Company, Inc. ("the Hawaiian Electric Companies") in support of S.B. 1000, Relating to Electric Vehicles. This bill seeks to integrate clean transportation planning with large residential and commercial development, by requiring a portion of available parking stalls be electric vehicle ("EV") 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. Thank you for this opportunity to testify.

ELEMENTAL
EXCELERATOR

Written Statement of Elemental Excelerator
before the Senate Committees on Transportation and Energy, Economic Development, and Tourism
Friday, February 08, 2019

In consideration of SB 1000
RELATING TO ELECTRIC VEHICLES

Aloha Chair Inouye, Chair Wakai, and Members of the Senate Committees on Transportation and Energy, Economic Development, and Tourism:

Elemental Excelerator respectfully **submits comments in support of the intent of SB 1000**, which requires that on or after January 1, 2020, all new residential multi-family buildings that have twenty or more parking stalls and new commercial buildings that have forty or more parking stalls have at least twenty-five percent of available parking stalls be 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 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.[1]

We respectfully support the intent of SB 1000 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.[2]

1Companies. (n.d.). Retrieved from https://elementalexcelerator.com/companies/
[2] 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.[3]

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
Elemental Excelerator
Managing Director, Policy & Community - Hawai'i

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

SB-1000
Submitted on: 2/7/2019 2:01:41 PM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Melodie Aduja	Testifying for O'ahu County Committee on Legislative Priorities of the Democratic Party of Hawai`i	Support	No

Comments:

SB-1000
Submitted on: 2/5/2019 1:05:11 PM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
R Laree McGuire	Individual	Oppose	No

Comments:

SB-1000
Submitted on: 2/7/2019 10:19:50 AM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Peter Forman	Individual	Support	No

Comments:

Dear Committee Members,
I support SB 1000 because it addresses the biggest bottleneck in moving forward with sustainable clean energy alternatives in vehicular transportation. People who live in condos and apartments need a reasonably convenient charging method in order to move to electric vehicles. Just yesterday, Mary Barra, CEO of General Motors, said that GM is committed to becoming totally electric. The auto industry will be ready, but will Hawaii's charging options be sufficient? The charging model that has been shown to work with single-family homeowners is overnight charging at home, and that's the model that would work best for multi-family dwelling EV owners as well. Unfortunately, expansion of EV ownership will be hobbled until adequate charging infrastructure is available to those residents living in multi-unit dwellings. SB 1000 helps address this need and is critical for the state to move ahead with its long-term clean energy plans.
Respectfully submitted,
Peter Forman
Kailua, Hawaii

SB-1000
Submitted on: 2/7/2019 10:49:01 AM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Timothy Kim	Individual	Support	No

Comments:

As our efforts to curb global warming, we as a State need to work on efforts to promote clean transportation. Plug in electric vehicles help us to reach this goal. However, the infrastructure is lacking. I recommend passing this bill to require parking structures to provide charging stations and stalls to promote and support the use of electric vehicles.

Timothy Kim, MD

SB-1000
Submitted on: 2/7/2019 11:19:40 AM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kenneth Eisner	Individual	Support	No

Comments:

SB-1000
Submitted on: 2/7/2019 11:40:13 AM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Amit Kamra	Individual	Support	No

Comments:

We are an Eco sensitive family of four that has chosen to go all electric for our transportation since 2017 beginning. We support any and all legislation that encourages progress towards sustainable energy and transportation methods for the environment and our kids.

We are doing our part. Our transportation is electric. We now support any proposal that will help others move in the same direction.

Having the convenient option to charge at home and/or work will make it possible for many more to purchase and use electric vehicles.

SB-1000
Submitted on: 2/7/2019 12:42:23 PM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
David Druz	Individual	Support	No

Comments:

I urge you to strongly support this bill. EV use must be incentivized in order to get more EV's on the road. More EV's, less global warming. Our oceans are rising. This is critical!

Ladies and Gentlemen of the committee,

I offer testimony on SB1000. I personally do not benefit nor am I adversely impacted by the lack of EV charging infrastructure in newly constructed multi-family buildings. I am fortunate to live in a townhouse that permits me to have already installed an EV charging station for my EV. I can certainly relate to and understand the difficulty in locating locations to re-charge my vehicle.

Those EV owners that are trying to support the states goal of fossil fuel elimination are not simply inconvenienced, when they cannot charge at home. These owners exhaust valuable family time searching for open and available charging spaces. They compete with other EV owners in the same situation. With every additionally registered EV, the number of public charging space diminishes. Please in behalf of those impacted, provide the support and enforcement necessary to help these EV owners so that they can charge at the new homes they live in. They are supporting the state and themselves.

Thank you in advance for your support.

VR,
Steve Barnes
Kaneohe, HI

SB-1000
Submitted on: 2/7/2019 12:56:51 PM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Amber Wilson	Individual	Support	No

Comments:

I believe all new construction should be EV ready to some capacity. There are more and more electric vehicles on the road and this is a positive direction into reducing our carbon footprint. Why not assist those who are trying to make a positive impact?

SB-1000
Submitted on: 2/7/2019 1:07:19 PM
Testimony for EET on 2/8/2019 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Sabrina Lobdell	Individual	Support	No

Comments:

As an electric vehicle user and advocate for decreasing use of fossil fuels, I support legislation that supports and encourages the use of electric vehicles.

SB-1000
Submitted on: 2/7/2019 1:15:13 PM
Testimony for EET on 2/8/2019 2:00:00 PM

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

Comments:

It took years to get my condo association to install an EV charging station so we could buy EVs. This is critical in moving Hawaii ahead in renewable energy.

SB-1000
Submitted on: 2/7/2019 1:44:57 PM
Testimony for EET on 2/8/2019 2:00:00 PM

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

Comments:

Honorable Chairs and Commitee Members,

I am writing in support of SB1000 which would require all new residential multi-family buildings that have twenty or more parking stalls and new commercial buildings that have forty or more parking stalls have at least twenty-five per cent of available parking stalls be electric vehicle charger ready.

I have been an EV owner since 2013 and am happy to see the significant growth in the number of EVs over the past few years. However, it seems that the number of EV chargers/parking available has not grown at the same pace. 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.

Sincerely,

Nanette Vinton

SB-1000
Submitted on: 2/7/2019 1:46:18 PM
Testimony for EET on 2/8/2019 2:00:00 PM

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

Comments:

SB-1000
Submitted on: 2/7/2019 3:27:08 PM
Testimony for EET on 2/8/2019 2:00:00 PM

LATE

Submitted By	Organization	Testifier Position	Present at Hearing
Bernard M Moret	Individual	Support	No

Comments:

Dear Senators,

My wife, Carol Fryer, and I, both registered voters on the Big Island of Hawaii, wuold like to register our strong support for Senate Bill 1000. Unlike private house owners, apartment dwellers and condo owners cannot plug in their vehicles into their home electrical system for overnight charging. Retrofitting the garages is often expensive, especially today, when only a few of the apartment dwellers or condo owners would be driving an EV. This situation will change, but the sooner new buildings take EV charging into account, the better. We only regret that the text of the bill sets rather high thresholds on the size of the parking areas, as the problem is relevant to parking areas of all capacities.

Respectfully submitted,

Bernard Moret

BOMA HAWAII
Building Owners and Managers Association

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

Testimony to the
Senate Committee on Transportation and
Senate Committee on Energy, Economic Development, and Tourism

February 8, 2019
2:00 p.m.
State Capitol - Conference Room 225

LATE

RE: SB 1000 Relating to Electric Vehicles

Aloha Chairs Inouye and Wakai, Vice Chairs Harimoto and Taniguchi 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 oppose the bill as currently drafted and respectfully request an implementation date of at least 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

LATE

Email: communications@ulupono.com

SENATE COMMITTEES ON TRANSPORTATION AND ENERGY, ECONOMIC DEVELOPMENT, & TOURISM
Friday, February 8, 2019 — 2:00 p.m. — Room 225

Ulupono Initiative Supports SB 1000, Relating to Electric Vehicles

Dear Chair Inouye, Vice Chair Harimoto, Chair Wakai, Vice Chair Taniguchi, 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, which requires that on or after January 1, 2020, all new residential multi-family buildings that have twenty or more parking stalls and new commercial buildings that have forty or more parking stalls have at least twenty-five 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.

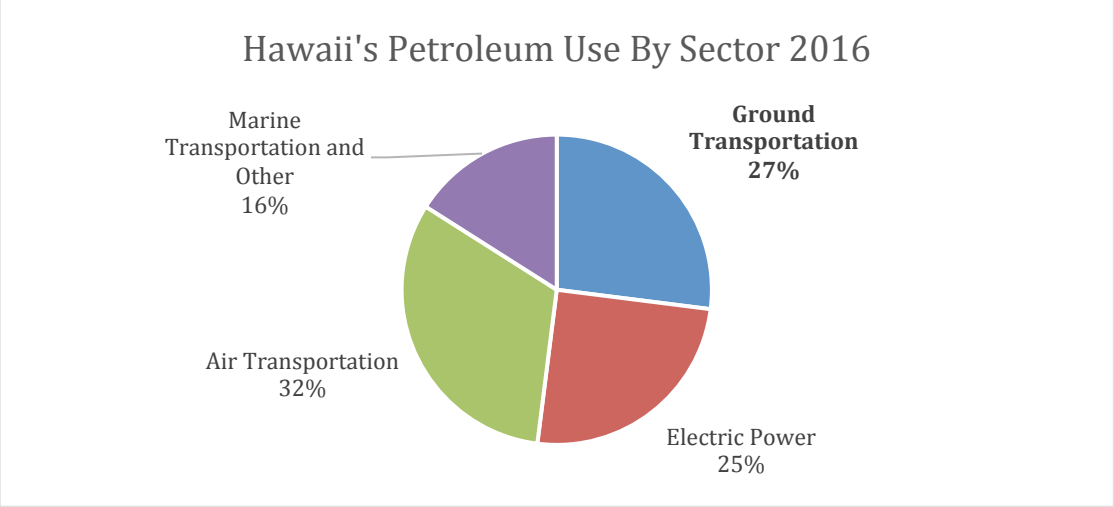
- EVs can alleviate Hawai'i's high cost of living
- EVs provide immediate impact to reduce our dependence on fossil fuels and decrease greenhouse gas (GHG) emissions
- EVs are prime for market acceleration
- Hawai'i should be doing more to promote EVs and EV infrastructure

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 starting MSRP is $29,990. After the Federal tax credit is considered, the purchase price is

$22,490, which is less than the average 2019 Toyota Camry and 2019 Honda Civic (the two best-selling sedans in the country).

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.

Furthermore, EVs can 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 over 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 #1 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

LATE

SENATE COMMITTEE ON TRANSPORTATION
SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM
February 8, 2019, 2:00 P.M.
Room 225
(Testimony is 2 pages long)

TESTIMONY IN STRONG SUPPORT OF SB 1000

Aloha Chair Inouye, Chair Wakai, and members of the Committees:

Blue Planet Foundation strongly supports Senate Bill (SB) 1000, which requires that on or after January 1, 2020, all new residential multi-family buildings that have twenty or more parking stalls and new commercial buildings that have forty or more parking stalls have at least 25% of available parking stalls that are electric vehicle charger ready.

This bill will increase electric vehicle charger accessibility for those that live in multi-unit dwellings (MUDs) both at home and at workplaces and will dramatically decrease the cost of installation of EV charging infrastructure in the long run. It will also ensure that we are "future proofing" our new construction projects.

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.[1]

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.

The longer driving ranges, lower costs, and larger selection of models are making it possible for many of Hawaii's residents to lower their carbon footprints and take advantage of the economic benefits that EVs offer. However, although electric vehicles have recently seen impressive adoption increases in Hawaii (25% growth in EV registrations statewide from December 2017 to December 2018), they still only comprise less than 1% of total passenger vehicles in the state.

Yet, the lack of EV charging infrastructure locally in Hawaii is a significant barrier to EV adoption. Most EV owners primarily charge their vehicle at home, but many of Hawaii's residents reside in multi-unit dwellings (MUDs) where they cannot simply plug in their car in a

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

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

garage. **This bill would expand charging options for residents that currently don't have the luxury of charging their EVs at home.**

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, by deploying more station at time of construction.[2] 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 installation, creating cost savings downstream for residents and tenants.

Conclusion

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 MUDs— with the confidence that they will be able to access charging at home, at the workplace, and in public.

We believe that this bill will help to expedite the uptake of EVs in Hawaii and help to develop a public charging network necessary to accommodate those vehicles.

Thank you for the opportunity to testify.

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

SB-1000
Submitted on: 2/8/2019 8:53:13 AM
Testimony for EET on 2/8/2019 2:00:00 PM

LATE

Submitted By	Organization	Testifier Position	Present at Hearing
Carlo A Daquanni	Individual	Support	No

Comments: