

SB-1291-SD-1

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Testimony for JDC on 2/24/2021 9:45:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Mark Frohnmayer	Testifying for Arcimoto	Support	No

Comments:

Testimony of Mark Frohnmayer

In Support of SB 1291/HB 717

Honorable Chair and Members of the Committee:

My name is Mark Frohnmayer. I am the founder and CEO of Arcimoto, a three-wheel electric vehicle manufacturer based in Oregon. I strongly support passage of companion bills SB 1291 and HB 717 which will give every Hawaiian and visiting tourist access to our electric vehicles, which will make meaningful progress toward reducing CO2 emissions in the transportation sector in the State.

At Arcimoto, our mission is to catalyze the shift to a sustainable transportation system. We believe that will only happen when we move away from oversized, overpriced, polluting vehicles to right-sized, ultra-efficient EVs we all can afford. To date, the average consumer has been unable to afford electric vehicles, which had an average price of about \$36,000 in 2019, with some vehicles costing upward of \$80,000. Our flagship product, the Fun Utility Vehicle (FUV), starts at \$17,900, and is designed for the pattern of everyday driving.

Consider that roughly 85 percent of all trips today have only one or two people in the vehicle. It no longer makes sense for one person to drive a large, multi-ton, seven-passenger SUV to work every day or to simply run errands. This usage pattern increases pollution, carbon emissions, and traffic.

SB 1291 makes sense because it modernizes legacy legislation written with two-wheel motorcycles in mind. To operate those bikes, riders need special skills and training, and must learn to balance and lean. Conversely, Arcimoto vehicles are stable by design, with simple controls that can be easily learned on your first drive.

Without the need for a motorcycle endorsement, thousands more tourists in Hawai'i would have access to new fleets of FUV rentals, which would provide zero-emission

alternatives to the thousands of gas-powered, CO2-emitting mopeds, scooters, and two-wheel motorcycles that tourists in the Islands rent every day. Electrifying these rentals would make a meaningful impact on air quality and carbon emissions.

SB 1291 is supported by the Hawai'i Department of Transportation and we implore you to do the same.

Mahalo,

Mark Frohnmayer

Founder and CEO

Arcimoto, Inc

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Testimony of Brent Gale
In Support of SB 1291/HB 717

Honorable Chair and Members of the Committee:

Introduction - My name is Brent Gale, and I live at 307 Pualoa Nani Place, Wailea. I strongly SUPPORT passage of companion bills SB 1291 and HB 717, as introduced, as a critical step toward reducing CO2 emissions in the transportation sector in our State. I am president and senior energy consultant for StrataG Consulting, LLC, a Hawai'i company. I have 45 years of experience in the energy industry and have previously submitted testimony before the Hawai'i Senate Transportation Committee, the Hawai'i Public Utilities Commission and elsewhere. I have a juris doctorate and am licensed to practice law elsewhere but not in Hawai'i. I have not been retained by anyone to lobby this bill and am not being compensated for this testimony.¹

History - The objective of the supporters of SB 1291 has always been very simple; that is, to change Hawai'i law to allow electric vehicles with two front wheels and handlebars to be operated with a Class 3 driver's license. In the 2019 legislative we supported SB 408 and in the 2020 session we supported SB 2104. The latter bill passed the Senate Transportation Committee with DOT supporting but did not get through Senate Judiciary Committee before

¹ Disclosure: My wife and I have a modest 400 share investment in Arcimoto, an Oregon company that manufactures and sells 3-wheeled electric vehicles (EVs). We also own one of Arcimoto's EVs, the first in Hawai'i. The Arcimoto EV seats two people, meets all applicable federal standards plus federal standards for seat belt assemblies and roof crush resistance, has a range of over 100 miles per charge, has a top speed of 75 mph, has a miles per gallon equivalent of over 173, and uses a handlebar in its steering mechanism to reduce total weight. This EV was on Oahu in January 2020 to allow legislators and other interested persons to see it and ride in it. Because current HRS sections 286-2 and 286-102 only allow 3-wheeled EVs with handlebars to be operated by drivers possessing a motorcycle driver's license or 3-wheel endorsement, most legislators and interested persons unfortunately were only able to see and ride in the vehicle, not experience the pleasure and safety of driving it.

the 2020 session expired. SB 1291 this session reflects DOT's suggested language and is supported by DOT.

Need for bill and purpose – Our State has identified reducing CO2 emissions as an essential strategic, environmental and public safety goal. Achieving meaningful CO2 reductions in the transportation sector will be very challenging,² and it is important to take reasonable steps now. Passage of these bills is one very important step that we can take immediately, with minimal to zero impact on the State treasury. It will allow both residents and visitors the opportunity to rent or own 3-wheeled EVs (whether with a steering wheel or handlebars) and drive them with a general Class 3 driver's license, providing the State a critical non-CO2-emitting option to today's CO2-emitting mopeds, motor scooters, motorcycles and cars.³

The purpose of companion bills SB 1291 and HB 717 is simply to recognize emerging EV technology and add a narrow new category of vehicle which can be operated by drivers with a general Class 3 Hawai'i driver's license or the equivalent from another state or country. The category added is autocycles (3-wheeled vehicles as defined in HRS section 286.2) with handlebars. Currently under HRS sections 286-2 and 286-102, 3-wheeled vehicles with handlebars can only be operated on public highways by drivers possessing a Class 2 motorcycle

² Achieving CO2 reductions in the transportation sector will be much more difficult than in the electric generation sector. In the electric generation sector, the CO2 emitting resources are almost exclusively owned by a few highly regulated and well financed entities. In contrast, CO2 emitting vehicles are owned by millions of individuals, the most polluting of which are owned by those who can't afford to, or choose not to, maintain their vehicles. It is not realistic to assume these individuals will or can spend \$30,000 or more to replace their polluting fossil-fueled, vehicles with electric-powered 4-wheeled sedans and SUVs, regardless of tax credits. Safe, stable and lower cost 3-wheeled EVs are a needed option.

³ "The transportation sector accounts for a significant portion of US greenhouse gas emissions, roughly 28 percent in 2016. Further, emissions from transportation grew 21 percent between 1990 and 2016, whereas emissions from the electric sector declined 1 percent over the same period. In fact, today's power sector emits the same amount of carbon dioxide as it did a generation ago, although it produces nearly 30 percent more electricity annually. These trends indicate the value of electrifying transportation as part of an overall decarbonization policy." Farnsworth, D., Shipley, J., Sliger, J. and Lazar, J. (2019, January). *Beneficial electrification of transportation*. Montpelier, VT: Regulatory Assistance Project, at 10.

driver's license or 3-wheel endorsement. This severely and unnecessarily restricts the sales and rental market potential of 3-wheeled EVs, and SB 1291/HB 717 removes that unnecessary restriction.

Many new 3-wheeled EVs will use handlebars rather than steering wheels because use of handlebars can materially reduce the weight of the total steering mechanism and other design elements without negatively impacting handling or safety. For example, the U.S. EV manufacturer I mentioned in footnote 1, Arcimoto, was able to reduce the weight of the 3-wheeled EV that I own to 1,300 pounds, a massive 600-pound reduction from the same vehicle equipped with a steering wheel and associated steering mechanism. Reducing vehicle weight to reduce consumer range anxiety without negatively impacting safety and performance is critical to the EV industry supplanting CO2-emitting vehicles and is a critical technological evolution the State should recognize by passing these bills.

If the current licensing impediments are removed by passage of these bills, I anticipate that 3-wheeled EVs will be very attractive in our State and actively rented or purchased by residents and visitors as a clean, safe alternative to fossil-fuel-powered, CO2-emitting mopeds, as well as CO2-emitting motor scooters, motorcycles, and even cars. By my calculations, every moped with a two-cycle engine emits 2.2 pounds of CO2 for every 10 miles driven. And thousands of mopeds are driven in our State every day, many of them by visitors. It is not reasonable to expect visitors will be willing or able to forfeit their state's driver's license in order to secure a Hawai'i motorcycle driver's license or a 3-wheel endorsement as our statutes currently require. Instead, they will continue to rent combustion-engine-powered vehicles and continue to emit CO2.

Summation - It is critical to provide consumers, particularly visitors renting vehicles, with a non-CO2-emitting option to mopeds, motor scooters, motorcycles and cars. Passage of these bills will help do that. I truly believe 3-wheeled EVs, whether with handlebars or steering wheels, are

the nearly perfect vehicle for our islands. In addition to having no CO2 emissions, 3-wheeled EVs can reduce traffic congestion, parking congestion, and imported gasoline and oil usage. EVs on average can convert 60 percent of electric energy into miles traveled, while internal combustion engines on average can convert only 20 percent of their energy source into miles traveled.⁴ Safe, quiet, non-CO2-emitting and compact, 3-wheeled EVs can help us make further progress toward our CO2 reduction goals while at the same time addressing part of our ever-increasing traffic congestion and parking problems but only if our State allows them to be operated by drivers with Class 3 driver's licenses or equivalent. Passage of these bills is critical to this progress. Thank you for the opportunity to offer this written testimony. If it would be beneficial, I would be pleased to appear in person before the Committee to discuss these bills.

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⁴ Source: Farnsworth, D., Shipley, J., Sliger, J. and Lazar, J. (2019, January). *Beneficial electrification of transportation*. Montpelier, VT: Regulatory Assistance Project, at 8.

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Testimony of Joel Sheltroun, Governmental Affairs - Arcimoto

In Support of SB 1291

Honorable Chair and Members of Senate Judiciary Committee:

My name is Joel Sheltroun, and I have been working to secure a change in HI statute for Arcimoto for the last two sessions. I had previously testified before Senate Transportation last year on a very similar bill and participated in a demonstration of the Arcimoto for legislators at the Capitol last year. Arcimoto is an electric three-wheel motor vehicle manufactured in Eugene, Oregon. It helps fulfill the need for sustainable, affordable transportation that is a pleasure to drive. It's front-wheel drive, has a low center of gravity, and provides similar stability found in passenger cars.

The Arcimoto Safety Management System consists of a roll cage/roof meeting automotive FMVSS 216a (roof crush) to protect the occupants in a rollover accident, a seatbelt harness system meeting automotive FMVSS for seat belts, and energy-absorbing zones to lessen impact forces in a collision.

The Arcimoto uses handlebar steering in place of a steering wheel. The handlebar system weighs far less than standard automotive steering options, saving up to 10% or more of the vehicle's total weight, and provides a quicker response from steering stop to steering stop. Weight savings is a critical consideration for efficiency in all vehicles, especially electric.

Unfortunately, because Arcimoto has handlebars for steering, it does not meet the classification of "autocycle." Therefore, operators of our vehicle are currently required to obtain a motorcycle endorsement for operation. Because the Arcimoto handles very similar to front wheel drive automobiles, only a regular Class D license should be necessary for operation. No balancing, leaning into the curve, shifting, and clutching is required as in motorcycles. Unnecessary motorcycle endorsement requirements will reduce rentals and sales of our vehicle. Making the changes in SB1291 will help facilitate the successful launch of Arcimoto in Hawaii.

Hawaii's helmet law creates a dangerous situation for operators and passengers (required under 18) in the Arcimoto. The lap and shoulder seat belts hold the torso against the seat, but the head (with the helmet adding 30% more weight to the head) flies forward in a frontal collision. Helmet use with lap and shoulder seat belts can result in severe whiplash or death in an accident, even at speeds as slow as 30 MPH. There is no need for a helmet with a roof and roll cage protecting operators and passengers.

It is important to note what SB1291 will not do:

- 1) It will not open a loophole for true motorcycles to qualify for autocycle classifications. For example, the amended autocycle classification will require a roll bar, roll cage, or roll hoops, and motorcycles don't have those and other required equipment for the classification.
- 2) It will not eliminate any motor vehicle currently considered an autocycle.

Arcimoto is asking for your support of SB 1291. Thank you for your consideration!

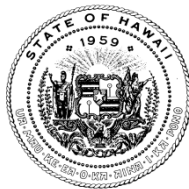
Respectfully submitted,

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February 24, 2021
9:45 A.M.
State Capitol, Teleconference

S.B. 1291, S.D. 1
RELATING TO TRANSPORTATION

Senate Committee on Judiciary

The Department of Transportation **supports** S.B. 1291, S.D. 1 that amends the definition of "Autocycle" from a motorcycle, that must have a steering wheel and seating that does not require the operator to straddle or sit astride, to a motorcycle that has either a handlebar or steering wheel. The bill also clarifies when a helmet must be worn.

Thank you for the opportunity to provide testimony.