



# HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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GOVERNOR

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Testimony of  
**SCOTT J. GLENN, Chief Energy Officer**

before the  
**SENATE COMMITTEE ON EDUCATION &  
SENATE COMMITTEE ON HIGHER EDUCATION**

Friday, March 19, 2021  
3:15 PM  
State Capitol, Conference Room #229

In SUPPORT of  
**SCR 89**  
**URGING THE UNIVERSITY OF HAWAII SYSTEM AND DEPARTMENT OF EDUCATION  
TO INCLUDE TRAINING, COURSES, AND CURRICULA RELATED TO THE  
MECHANICS, REPAIR, AND MAINTENANCE OF ELECTRIC VEHICLES, HYDROGEN  
VEHICLES, AND OTHER ALTERNATIVE FUEL VEHICLES IN THEIR PROGRAMS.**

Chairs Kim and Kidani, and Members of the Committees, the Hawaii State Energy Office (HSEO) supports Senate Concurrent Resolution 89, which urges the University of Hawaii System and Department of Education to include training, courses, and curricula related to the mechanics, repair, and maintenance of electric vehicles, hydrogen vehicles, and other alternative fuel vehicles in their programs.

HSEO acknowledges the growing adoption of alternative fuel vehicles (AFV), such as electric and hydrogen vehicles, in Hawaii. HSEO also acknowledges programs to prepare and train the workforce to participate in the growing AFV sector are needed to support the successful adoption and operation of these new technologies. Support of these programs is consistent with HSEO's mission to promote clean transportation and a decarbonized economy.

Thank you for the opportunity to testify.



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented Before the  
Senate Committee on Higher Education  
and  
Senate Committee on Education  
March 19, 2021 at 3:15 p.m.  
By  
Erika Lacro  
Vice President for Community Colleges  
University of Hawai'i System

SCR 89 – URGING THE UNIVERSITY OF HAWAII SYSTEM AND DEPARTMENT OF EDUCATION TO INCLUDE TRAINING, COURSES, AND CURRICULA RELATED TO THE MECHANICS, REPAIR, AND MAINTENANCE OF ELECTRIC VEHICLES, HYDROGEN VEHICLES, AND OTHER ALTERNATIVE FUEL VEHICLES IN THEIR PROGRAMS

Chair Kim, Chair Kidani, and members of the Committees:

The University of Hawai'i (UH) provides comments on Senate Concurrent Resolution 89 which encourages UH and the Department of Education to include training, courses and curricula related to mechanics, repair and maintenance of electric vehicles (EVs), hydrogen vehicles (HEVs) and other alternative fuel vehicles in their respective programs.

Five UH community colleges offer Automotive Technology or Automotive Mechanics Technology (AMT) programs: Hawai'i, Honolulu, Kaua'i, Leeward, and Maui. In 2019-20, UHCCs awarded 21 Associates degrees and 57 Certificates of Achievement for Automotive Technology. At some campuses, the mechanics, repair and maintenance of EVs, HEVs and other alternative fuel vehicles would extend beyond the AMT program to other transportation programs (e.g., Diesel Mechanics, Auto Body and Repair).

All UHCC AMT programs recognize the industry shifts toward EVs, HEVs and other alternative fuel vehicles. Campuses are changing their programs to address the new technologies based on the advice and relationship with local industry partners, the availability of training in the postsecondary setting, and the availability of resources to invest in the faculty training, equipment, and curriculum necessary, especially given significant safety concerns in working with the new technologies. The programs include education about the EVs, HEVs and other alternative fuel vehicles into their programs, focusing on theory and safety components. All programs identified challenges to incorporating comprehensive training due to technology-specific and vehicle-specific requirements for repair and safety, and all programs have identified that incorporating EVs, HVs and other alternative fuel vehicles in their respective programs would require significant investments, such as faculty training, equipment, safety space, vehicles, certifications and curriculum.

Some programs have already incorporated or are planning to incorporate EV and HEV content into their program. Currently, Kaua'i CC offers certificates in Automotive Green Technology, HEV Preventative Maintenance and Repair and HEV Diagnostic and Repair. Leeward's Ford ASSET curriculum provides manufacturer training required of entry-level technicians in EV/HEV

technologies for Ford vehicles; due to safety concerns, all instruction is classroom and web-based only. Hawai'i CC and Maui College are planning for curriculum that includes EV/HEV and fuel cell technologies but need to secure sufficient resources to implement plans.

Consistent with SCR 89, UHCCs' AMT programs will discuss the industry needs with their advisory councils regarding current and projected workforce needs for automotive technologies which are moving toward EVs, HVs and alternative fuel vehicles.

Thank you for your consideration of UH's comments.



**Hawaiian  
Electric**

**TESTIMONY BEFORE THE SENATE COMMITTEES ON  
HIGHER EDUCATION AND  
EDUCATION**

**SCR 89**

**URGING THE UNIVERSITY OF HAWAII SYSTEM AND DEPARTMENT OF  
EDUCATION TO INCLUDE TRAINING, COURSES, AND CURRICULA RELATED TO  
THE MECHANICS, REPAIR, AND MAINTENANCE OF ELECTRIC VEHICLES,  
HYDROGEN VEHICLES, AND OTHER ALTERNATIVE FUEL VEHICLES IN THEIR  
PROGRAMS.**

March 19, 2021  
3:15 PM, Agenda Item # 2  
State Capitol, Conference Room 229 / VIDEO CONFERENCE

June Chee  
Program Manager, Electrification of Transportation  
Hawaiian Electric Company, Inc.

Aloha Chairs Kim and Kidani and Committee Members,

My name is June Chee and I am testifying on behalf of Hawaiian Electric Company **in support of and providing suggested amendments for SCR 89**. Hawaiian Electric Company supports this resolution because it would be a significant step in strengthening Hawaii's commitment to clean ground transportation by ensuring there is a trained workforce prepared for the influx of electric vehicles. Specifically, the Company supports the legislature's foresight to urge the University of Hawaii System and Department of Education to include training, courses, and curricula related to the mechanics, repair, and maintenance of electric vehicles, hydrogen vehicles, and other alternative fuel vehicles.

In 2019, Hawaiian Electric conducted its Electric Vehicle Critical Backbone Study, which looked at the forecasted need for public and private electric vehicle charging infrastructure in the next 10 years. The backbone study projected a need of seven times more public charging by 2030 and an even greater need for private commercial and

residential charging. This insight helped the Company focus its planning for the coming influx of electric vehicles through electrification of transportation programs such as EV-specific rates to encourage daytime charging; an electric bus make ready infrastructure pilot; our proposed Charge Ready Hawaii pilot to provide make ready infrastructure support to commercial properties and multi-unit dwellings; and a planned request to expand our public charging network.

Hawaiian Electric has a longstanding relationship with the University of Hawaii in developing engineering talent and this resolution can expand and improve upon a pipeline of young professionals who can advance their careers at home. The Company proposes to add language to SCR89 to include training, courses, and curricula related to the mechanics, repair, and maintenance of electric vehicle supply equipment (EVSE). A U.S. Department of Labor O-NET Code<sup>1</sup> was recently created by ChargerHelp!<sup>2</sup>, an Elemental Excelerator Company, to specify skills needed for EV charging station maintenance and repair. This new code paves the way for certified Electric Vehicle Service Equipment (EVSE) technicians to increase their earning potential as the average wage for this career pathway starts at \$39.80/hour or \$82,780 annually. The EV market's growth is accelerating and charging infrastructure will need to be quickly installed and maintained to provide robust and reliable charging for the growing number of EV drivers. Skilled technicians in EVSE repair and maintenance can contribute to increasing the number of good paying jobs as we emerge from the COVID19 pandemic.

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<sup>1</sup> The **O\*NET Code Connector** helps workforce professionals determine the correct **O\*NET-SOC codes** for job orders, job applicants, and UI claimants. Key items from the **O\*NET Database** are displayed so that workforce personnel can quickly find the matching **code** for a job order.

<sup>2</sup> <https://afrotech.com/u-s-department-of-labor-approves-black-led-tech-startup-chargerhelp-as-leader-in-workforce-development>

As the largest provider of electric vehicle fast charging in the state, Hawaiian Electric Company remains committed to EV strategies and workforce development that support the momentum and progress already achieved in transforming Hawaii's ground transportation to electric vehicles. Thank you for this opportunity to testify.

**SCR-89**

Submitted on: 3/17/2021 8:11:18 PM

Testimony for HRE on 3/19/2021 3:15:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Steve Parsons	Testifying for Small Biz	Support	No

Comments:

Aloha Trusted Lawmakers,

We strongly support this bill. While EV's will require tremendously less maintenance, we will need skilled workers to service these cars and trucks and more importantly: Battery repair and converting ICE (Internal Combustion Engines) to EV. Currently, EV's are cheaper than ICE when Total Cost of Ownership, Then in 1-3 years they will be cheaper to buy, then they will be cheaper to convert, and that's where some of this talent pool will pay off: <https://thedriven.io/2020/07/07/the-osborne-effect-why-new-car-sales-will-be-all-electric-in-six-years/>

Imua>>>

Steve parsons Kauai Resident, Wailua

## Hawaii Electric Vehicle Association

hawaiiev.org  
info@hawaiiev.org



March 18, 2021

**SUPPORT FOR SCR 89** URGING THE UNIVERSITY OF HAWAII SYSTEM AND DEPARTMENT OF EDUCATION TO INCLUDE TRAINING, COURSES, AND CURRICULA RELATED TO THE MECHANICS, REPAIR, AND MAINTENANCE OF ELECTRIC VEHICLES, HYDROGEN VEHICLES, AND OTHER ALTERNATIVE FUEL VEHICLES IN THEIR PROGRAMS.

Dear Chair Kidani and Vice-Chair Kim, and Committees on Education and Higher Education,

**Hawaii Electric Vehicle Association is in SUPPORT of SCR 89.**

As detailed in this resolution, the transition of our transportation system away from the internal combustion engine to the electric drive train is well underway. The signs are pervasive - manufacturers, e.g., GM and Volvo, have declared their intention to stop the production of gas cars in the future, bans on internal combustion vehicles are spreading across the globe<sup>1</sup>, bus fleet owners are introducing zero-emission buses, and EV adoption is rising in our state.

This situation represents an opportunity to upskill our workforce and prepare future workers for the automotive industry's needed jobs. It also represents an opportunity to avoid a bottleneck in our transition to a clean energy future.

SCR 89 urges the focus and investment in programs that will develop the workforce needed for future jobs. Importantly, it will ensure that we have local resources who can support our transition to zero-emission transport.

Please support **SCR 89**.

Thank you for the opportunity to testify.

Sincerely,  
Noel Morin - President

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

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<sup>1</sup> <https://cleantechnica.com/2021/01/02/31-countries-states-and-cities-have-ice-bans-in-place/>



## Big Island Electric Vehicle Association

www.bigislandev.org  
hawaiidrivedelectric@gmail.com



March 18, 2021

**SUPPORT FOR SCR 89** URGING THE UNIVERSITY OF HAWAII SYSTEM AND DEPARTMENT OF EDUCATION TO INCLUDE TRAINING, COURSES, AND CURRICULA RELATED TO THE MECHANICS, REPAIR, AND MAINTENANCE OF ELECTRIC VEHICLES, HYDROGEN VEHICLES, AND OTHER ALTERNATIVE FUEL VEHICLES IN THEIR PROGRAMS.

Dear Chair Kidani and Vice-Chair Kim, and Committees on Education and Higher Education,

**Big Island Electric Vehicle Association is in SUPPORT of SCR 89.**

SCR 89 will encourage the focus on the training programs to develop the workforce needed for future jobs. With the inevitable demise of the internal combustion engine and the rising adoption of zero-emission vehicles, we will need people skilled in building, maintaining, and repairing of a new type of automotive technology. It behooves us to act now to help upskill our existing workforce and prepare future workers clean transportation jobs.

I urge your support of **SCR 89**.

Thank you for the opportunity to testify.

Sincerely,

Noel Morin – President

**Big Island Electric Vehicle Association** (bigislandev.org), established in 2011, is a grassroots non-profit group dedicated to accelerating the adoption of EVs on Hawaii Island. Our members are EV owners and supporters.



## **Sustainable Energy Hawai'i**

sustainableenergyhawaii.org

421 Lama St.

Hilo, HI 96720

March 18, 2021

Dear Chair Kidani and Vice-Chair Kim, and Committees on Education and Higher Education,

I am Richard Ha, Chair of Sustainable Energy Hawai'i, a coalition of concerned citizens dedicated to improving the quality of life of Hawaii residents through affordable renewable energy. **We are in STRONG SUPPORT of SCR 89.**

**SCR 89** will help our workforce be ready to support our shift to zero-emission transportation. On Hawaii Island, we have projects like the fuel cell electric bus pilot that will benefit from on-island resources that can maintain and service electric drive trains. We also anticipate the need for technicians who are certified in battery electric solutions.

Let's proactively prepare our people for the jobs of the future. Please support SCR 89 and future policies that will facilitate our transition to zero-emission vehicles.

Mahalo,  
Richard Ha  
Chair - Sustainable Energy Hawai'i

**SCR-89**

Submitted on: 3/16/2021 6:42:37 PM

Testimony for HRE on 3/19/2021 3:15:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Rachel Solemsaas	Individual	Support	No

Comments:

I strongly support SCR89. AT Hawai'i CC, we have established an auto mechanic early collge pathway with Kealekehe HS. If passed, we will further enhance the training to include current renewal energy technologies.

Mahalo.

**SCR-89**

Submitted on: 3/17/2021 9:38:00 AM

Testimony for HRE on 3/19/2021 3:15:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Stephanie Hall Morin	Individual	Support	No

Comments:

Brilliant for job creation and to reduce the fears around moving away from gas-fueled vehicles.

**SCR-89**

Submitted on: 3/17/2021 11:36:45 AM

Testimony for HRE on 3/19/2021 3:15:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Kaikea K. Blakemore	Individual	Support	No

Comments:

Support

**SCR-89**

Submitted on: 3/18/2021 1:23:44 AM

Testimony for HRE on 3/19/2021 3:15:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Janet Pappas	Individual	Support	No

Comments:

Dear HRE and EDU Chairs, Vice Chairs and Committee Members,

I strongly support resolution SCR89 to prepare for the electric vehicles and other clean energy vehicles that are beginning to appear on our roadways.

Hawaii imports fossil fuel to the tune of \$5 billion per year and two thirds of that is for transportation. Decarbonizing Hawaii's transportation sector needs to be one of the State's major goals.

A majority of car manufacturers across the U.S. are building at least one model of electric vehicle this year, while other carmakers are planning all-electric fleets. In other words, Hawaii must prepare for the EVs that will begin to flood the market--and our roadways--within the next five years (Hawaii currently stands at 1% EV adoption (over 10,000 EVs). Electric vehicles will soon be upon us, and probably other alternative fuel vehicles as well. We will need people trained in these new technologies.

I can remember when personal computers came on the market in the mid-1980s. The PCs would arrive, you would experience a problem, call the company and there would be no one who knew enough to service the customer. This same scenario could happen with EVs and the EV charging infrastructure. The time is now to plan for these eventualities. Hawaii needs to develop a workforce of automotive technicians capable of repairing and maintaining these new vehicles and the infrastructure they rely on.

Please support this resolution (SCR89) so Hawaii can be ahead of the EV stampede.

Thank you for listening and for the opportunity to testify.

Sincerely,

Jan Pappas - Aiea, Hawaii

**SCR-89**

Submitted on: 3/18/2021 10:59:15 AM

Testimony for HRE on 3/19/2021 3:15:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jeff Hood	Individual	Support	No

Comments:

I support this bill.