



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2360  
HONOLULU, HAWAII 96804

**Date:** 02/07/2022

**Time:** 03:00 PM

**Location:** CR 229 & Videoconference

**Committee:** Senate Education  
Senate Agriculture and Environment

**Department:** Education

**Person Testifying:** Keith T. Hayashi, Interim Superintendent of Education

**Title of Bill:** SB 2543 RELATING TO SUSTAINABLE SCHOOLS.

**Purpose of Bill:** Requires the Department of Education to establish zero-emission vehicle goals as part of the sustainable school's initiative.  
Requires an annual report to the Legislature.

**Department's Position:**

The Hawaii State Department of Education (Department) provides comments on SB 2543 and recommends further study be conducted.

The Department supports the goals of reducing emissions to create cleaner air for our students and our communities and acknowledges that zero-emission transportation is one strategy that can help to achieve these goals. However, there are some challenges which should be considered. An electric school bus is about \$120,000 more expensive than a diesel version. The added costs can be offset by fuel and maintenance savings over the course of the life cycle of the bus, which tends to be about 12 to 16 years.

After the initial purchase, the Department can expect to realize dividends on their operating costs through the life of the bus in the form of fuel savings and lower maintenance costs. Although fueling and charging costs ebb and flow, recent reports are showing electricity can be around 60 percent lower than diesel costs. Because electric school bus motors have fewer moving parts, maintenance is dramatically reduced, with the largest maintenance expense being battery replacement. On average, an electric school bus could save the Department nearly \$2,000 a year in fuel and \$4,400 a year in maintenance costs.

Based on the \$120,000 higher cost and \$6,400 per year savings, payback would be

18.75 years, which surpasses the bus life cycle by at least 2.75 years.

Thank you for the opportunity to offer comments on this measure.

Aloha Hawaii State Legislators,

I am writing to support the induction of SB2543 into law. Climate change, community health, and economic success are at the core of my response to this bill. Summers hotter, winters colder, oceans higher, and stream beds have dried up, a story of how our island has become to look and feel like. We cannot keep polluting our earth like this and expect it all to be okay. Scientists have been saying for decades how human activity-caused climate change wreaks havoc on our lives; now we sit idly by and say, "not my problem." Well, it **is** our problem, and we have the solutions available.

For Hawaii, battery-electric transportation is one of the pieces of the puzzle. We have thousands of passenger electric cars and a handful of 40' battery-electric transit buses, but nothing in between. For the sake of this bill, let's narrow it down to school transportation. These buses are arguably the best to electrify first. They run routes in the morning, sit idle during the day when they can charge off solar energy, run routes in the afternoon, and then back to the depot to sit overnight. Unfortunately, children are also the most susceptible to lung damage caused by particulate matter coming from the tailpipe of buses. Their lungs are still growing, and when that particulate matter hits the walls of their lungs, it causes asthma and a multitude of other problems.

From the American Lung Association's 2020 "State of the Air" report: exposure to ozone and particle pollution contributes to a wide range of negative health effects and is especially dangerous to children, seniors, people living with asthma and other health conditions, lower-income communities, and communities of color. Transportation is a leading source of harmful air pollution in the United States, representing over half of the total ozone- and particle-forming oxides of nitrogen (NOx) emissions and represents the largest source of carbon pollution in the United States.

**The solution:** replace harmful diesel and gas school buses with battery-electric alternatives.

Some quick facts about the benefits of electric school buses:

- Electric school buses can achieve up to an 80% reduction in maintenance and service costs due to fewer moving parts. Most of the repairs are software solutions rather than hands-on diagnostic problems.
  - This is especially helpful for schools in remote areas like Na'alehu or Ka'u on the island of Hawai'i or Hana on Maui. These schools won't have to travel to a mechanic in Kona or Hilo as often to keep their buses on the road.
- Electric school buses cut down on all tailpipe emissions, keeping our community's safe, especially the most at-risk
- Electric school buses are quieter than internal combustion engine (ICE) buses causing less commotion in neighborhoods and not harming the hearing of drivers and riders.

To properly offer up an argument, I believe it is essential to address and mitigate the challenges of your decision:

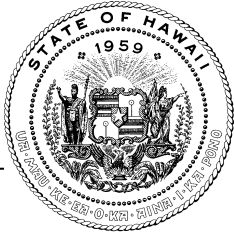
- Electric school buses are typically twice as expensive as ICE buses, making them inaccessible for most operators or schools.
  - Solution: incentives to help push adoption until the market naturally comes down.
- Electric school buses are so new that people are nervous about being early adopters.

- Solution: some electric school bus manufacturers have been putting vehicles on the road for 8+ years now, advancing their products. Yes, there will be issues, but don't we already see enough problems with ICE vehicles? We need early adopters, and that's what we are here to help support. The government should help to incentivize and support these early adopters to help bring the early majority customers.

Right now, the Department of Education (DOE) has an RFP out for a menu-style bid of school buses that DOE schools can purchase buses in a simpler fashion than procuring them for themselves. However, the DOE has taken electric school buses off as options. Why? "They're not ready." This bid has the opportunity to stand for three (3) years. Maybe they will be next year if they're not ready this year, but they've cut themselves out of the chance for the next three (3) years. Why, at a time of utmost importance to shift to battery-electric, are we still not ready? Exactly what will it take?

There are over a thousand school buses in the State of Hawai'i. If we are going to convert these to battery-electric, we need to start today. Not next year, not in five years, but today. Coupled with incentives, mandates will help push that initiative to fruition.

Mahalo for your time and consideration of my testimony and our collective future in a clean and sustainable environment.



# HAWAII STATE ENERGY OFFICE STATE OF HAWAII

DAVID Y. IGE  
GOVERNOR

SCOTT J. GLENN  
CHIEF ENERGY OFFICER

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**LATE**

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

before the  
**SENATE COMMITTEE ON EDUCATION  
AND COMMITTEE ON AGRICULTURE AND ENVIRONMENT**

Monday, February 7, 2022  
Time 3:00 PM  
State Capitol, Room 229 and Via Videoconference

**SUPPORT  
SB 2543  
RELATING TO SUSTAINABLE SCHOOLS.**

Chairs Kidani and Gabbard, Vice Chairs Kim and Nishihara, and Members of the Committees, the Hawai'i State Energy Office (HSEO) supports SB 2543, which Requires the Department of Education to establish zero-emission vehicle goals as part of the sustainable school's initiative and requires an annual report to the Legislature.

According to the Department of Health Greenhouse Gas Inventory for 2017 Transportation made up over half of energy emissions. Ground transportation made up forty seven percent of all transportation emissions making ground transportation a key segment for emission reductions. One of the actions Hawaii has taken to address emissions in ground transportation was to sign onto the Multi-State Medium-and Heavy-Duty Zero Emission Vehicle MOU which, among other things, set a goal that thirty percent of all medium and heavy-duty vehicle sales are ZEVs by 2030 and one hundred percent by 2050. To support achieving that goal the HSEO, through collaboration with the Hawai'i Department of Health – Clean Air Branch, has launched the Diesel Replacement Rebate program to support the adoption of MHD ZEVs by both the public and private sector in order to serve as a catalyst for that market segment.

To achieve a net-negative carbon economy as soon as practicable and no later than 2045 ground transportation needs to be addressed. School buses are an important

transportation segment to ensure the decarbonization of transportation is equitable by providing access to schools through zero emission alternatives. HSEO stands ready to support affected agencies' integration of ZEVs into their fleets. HSEO defers to the appropriate agency for comment on the impacts and implementation of the bill requirements.

Thank you for the opportunity to testify.



**Hawaiian  
Electric**

**TESTIMONY BEFORE THE SENATE COMMITTEES ON  
EDUCATION  
AND  
AGRICULTURE AND ENVIRONMENT**

**SB 2543**

**Relating to Sustainable Schools**

February 7, 2022  
3:00 PM, Agenda Item #2  
State Capitol, VIDEO CONFERENCE

June Chee  
Program Manager, Electrification of Transportation  
Hawaiian Electric Company

Aloha Chair Kidani, Chair Gabbard, Vice Chair Kim, Vice Chair Nishihara, and Committee Members,

My name is June Chee, and I am testifying on behalf of Hawaiian Electric Company **in support of SB 2543**, as it seeks to establish zero-emission vehicle goals as part of the sustainable school's initiative.

Hawaiian Electric in partnership with Electric Power Research Institute has been running an Electric School Bus Pilot to demonstrate and analyze electric bus (eBus) technology and its ability to adequately serve various driving distances, terrains, charging schedules, and school programs. During the pilot, the demonstration eBus will have operated on State Department of Education routes, a Kamehameha Schools commuter route, and field trips, sports, and special event routes with Punahou School. Hawaiian Electric's Charge Up eBus pilot is also launching this month and will simplify and reduce charging installation costs for bus operators. The Company will manage the

design, permitting, construction and maintenance of all the electrical infrastructure up to the charge station at up to 10 sites on Oahu, Maui and Hawaii Island. The Electric School Bus and Charge Up eBus pilots will provide valuable insight into the integration of eBuses and charging equipment for customers like schools, state departments, and private bus operators. Additionally, lessons learned from these pilots may help to inform the proposed transition to zero-emission vehicles for all school-related transportation.

Hawaiian Electric Company has a focused support and momentum to decarbonize Hawaii's ground transportation by providing products and offerings that benefit all our customers and anticipating the charging needs for future EV drivers and riders across our service territory. Hawaiian Electric Company is in support of SB2543 as it provides increased access to zero-emission vehicles and is a sustainable strategy to help create a bridge to a cleaner, more equitable future for Hawaii. Thank you for this opportunity to testify.





Email: [communications@ulupono.com](mailto:communications@ulupono.com)

SENATE COMMITTEES ON EDUCATION AND AGRICULTURE & ENVIRONMENT  
Monday, February 7, 2022 — 3:00 p.m.

**Ulupono Initiative supports SB 2543, Relating to Sustainable Schools.**

Dear Chair Kidani, Chair Gabbard, and Members of the Committees:

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

**Ulupono supports SB 2543**, which requires the Department of Education (DOE) to establish zero-emission vehicle goals as part of the Sustainable Schools Initiative and requires an annual report to the Legislature.

Ulupono supports the State's efforts to increase energy efficiencies and clean transportation. The State currently maintains goals for 100% clean energy by 2045 and 100% zero-emission vehicles for the State light-duty fleet by 2035. Each State department and agency should find ways to lead by example in meeting these sustainable goals. The DOE can make a strong impact for the State by making these statements and policies a reality through the Sustainable Schools Initiative. The DOE can also benefit from teaching our keiki about the importance of clean energy and transportation, creating a more resilient future for all.

Furthermore, zero-emission vehicles are currently available and being utilized in many school districts across the country. While these vehicles may currently hold a premium up-front price, prices are declining and HDOT has shown that EVs can save the State significant money over time due to much lower annual operating costs. In short, we believe it to be in the best interest of all parties to not only establish a goal but to quickly begin transitioning to zero-emission vehicles.

Thank you for this opportunity to testify.

Respectfully,

Micah Munekata  
Director of Government Affairs

*Investing in a Sustainable Hawai'i*



To: The Senate Committee on Education (EDU)  
and  
The Senate Committee on Agriculture and Environment (AEN)  
From: Sherry Pollack, Co-Founder, 350Hawaii.org  
Date: Monday, February 7, 2022, 3:00 pm

**In strong support of SB2543**

Aloha Chairs Kidani and Gabbard, Vice Chairs Mercado Kim and Nishihara, and members of the EDU and AEN committees,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org is in **strong support of SB2543** which requires the Department of Education to establish zero-emission vehicle goals as part of the sustainable school's initiative.

Efforts to increase energy efficiencies and clean transportation promotes good health for students as well as improving the health of our planet. Transitioning to zero-emission vehicles helps avoid the exposure to toxic exhaust emissions from internal combustion engine vehicles via the electrification of our school buses. These efforts and more are the type of actions needed to move Hawaii to a decarbonized economy.

The planet faces an existential climate crisis and we must act now. As an island state, Hawaii is ground zero for climate devastation, from more intense storms, to food insecurity, to rising seas and shoreline destruction.

And let's be clear. Climate change is not an abstract problem for the future. Climate change is happening now, we are causing it, and the longer we wait to act, the more we lose. **Children living today will live to see a 1.5°C warmer world because of the failure of adults to take real action when there still was time to do so.** Scientists have made clear that we are part of the last generation that can stop or at least mitigate the devastating impacts of climate change.

If we are to solve the climate crisis, it will require **all of us** working together. Hawaii can and should be a leader in showing the world the way forward towards a safe and sustainable climate and future. The sooner we inspire others to take action and lead by example, the better off the future will be for our children. We need efforts like those described in SB2543 across all sectors of our society, and we need them in earnest.

Mahalo for the opportunity to testify in **strong support** of this very important legislation.

Sherry Pollack  
Co-Founder, 350Hawaii.org

**SB-2543**

Submitted on: 2/5/2022 7:58:24 PM

Testimony for EDU on 2/7/2022 3:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Dyson Chee	Individual	Support	No

Comments:

Thank you for the opportunity to testify in support of SB2543.

**SB-2543**

Submitted on: 2/6/2022 2:22:51 PM

Testimony for EDU on 2/7/2022 3:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Remote Testimony Requested</b>
Ted Bohlen	Testifying for Climate Protectors Hawaii	Support	No

Comments:

Climate Protectors Hawaii STRONGLY SUPPORT this plan for sustainable schools and the transition to zero-emission vehicles!

The team at Highland Electric Fleets is pleased to offer testimony in favor of SB2543. We thank Senator Lee and the other sponsors for their leadership on a topic that is vitally important to our communities and children.

The transportation choices of school districts and municipalities impact health, quality of life, and learning outcomes of students, and establishing targets for electrification is key to driving progress. School buses are both the most visible and highest polluting contributor to school systems' transportation emissions. The electric school bus space has shifted dramatically in the past few years, with a wide range of bus models available, declining prices, and expanding deployment models to serve every district's needs. Now is the time for Hawaii's schools to commit to a transition to zero emission vehicles on the shortest viable timeline. By initiating this work today, school bus electrification can become a cornerstone in Hawaii's commitment to "achieving a carbon-negative economy by 2045."

Highland Electric Fleets is a comprehensive turnkey solutions provider that delivers electric school buses (EVSb) to school districts and third-party managed fleet providers, and Highland is now the largest buyer of EVSBs in the United States. We offer a model involving financing, infrastructure, vehicle deployment, and maintenance in an easily digestible, budget-neutral format that enables EVSB acquisition at traditional diesel pricing. Our mission is to eliminate the barriers to better student health and a cleaner environment.

**LATE**