

OFFICE OF PLANNING STATE OF HAWAII

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DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Statement of
LEO R. ASUNCION
Director, Office of Planning
before the
SENATE COMMITTEE ON WAYS AND MEANS
Wednesday, April 4, 2018
10:30 AM
State Capitol, Conference Room 211

in consideration of
HB 1986, HD 2, SD 1
RELATING TO THE ENVIRONMENT

Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Senate Committee on Ways and Means.

The Office of Planning appreciates the intent and offers the following comments on HB 1986, HD 2, SD 1 provided that its passage does not replace or adversely impact priorities indicated in the Executive Budget.

HB 1986, HD 2, SD 1 establishes a carbon offset program under DBEDT, in partnership with the DLNR. The bill will allow the proceeds and revenue generated from forest carbon offset credits to be deposited into the forest stewardship fund, and non-forest carbon credits to be invested in projects enhancing the State's efforts to mitigate climate change, improving the State's water infrastructure, or mitigating threats to water sustainability efforts. HB 1986, HD 2, SD 1 also appropriates funds to implement the carbon offset program.

Presently the Office of Planning is administering the State's Carbon Farming Task Force (CFTF), pursuant to Act 33 (2017) to identify agricultural or aquacultural activities and best practices that provide carbon sequestration benefits that may be used to establish a carbon farming certification. This CFTF is required to report its findings and recommendations, including any proposed legislation to the legislature no later than twenty days prior to the convening of the regular session of 2025.

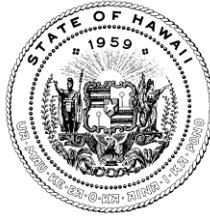
The Office of Planning notes that voluntary carbon markets' carbon offset projects presently can be broadly categorized into forestry and land use, industrial gases, methane capture, energy-efficiency, renewable energy, and transportation projects; therefore, the potential for carbon offset projects could be performed by multiple state departments and agencies.

We appreciate the over-all concept of this bill as it includes initiatives supportive of our goals and objectives for carbon emission reduction activities and water sustainability, but are concerned about the cost implications generated by this proposal.

We also note that HB 2182, HD2, SD1 is being heard by this committee on Thursday, April 5, 2018, and this measure seeks 1) make permanent the Carbon Farming Task Force (by renaming the task force as the Hawaii Greenhouse Gas Sequestration Task Force and repealing Act 33 (2017)); 2) expanding the membership and task force responsibilities; 3) making an appropriation, and 4) begin required reporting a year earlier (prior to the 2024 regular session). If passed with the appropriation amount of \$150,000, and an additional temporary project analyst position, HB 2182, HD2, SD1 will allow the current CFTF to continue its examination and creation of a carbon offset program/carbon sequestration certification. OP will request follow-on funding in the FB20-21 budget.

Thank you for the opportunity to offer these comments in support of HB 1986, HD 2, SD 1.

DAVID Y. IGE
GOVERNOR OF
HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
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Testimony of
SUZANNE D. CASE
Chairperson

Before the Senate Committee on
WAYS AND MEANS

Wednesday, April 4, 2018
10:30 AM
State Capitol, Conference Room 211

In consideration of
HOUSE BILL 1986, HOUSE DRAFT 2, SENATE DRAFT 1
RELATING TO THE ENVIRONMENT

House Bill 1986, House Draft 2, Senate Draft 1 proposes to establish a carbon offset program under the Department of Business, Economic Development, and Tourism (DBEDT), in partnership with the Department of Land and Natural Resources (DLNR). The bill would allow the proceeds and revenue generated from forest carbon offset credits to be deposited into the forest stewardship fund, and non-forest carbon credits to be invested in projects enhancing the State's efforts to mitigate climate change, improving the State's water infrastructure, or mitigating threats to water sustainability efforts due to climate change. Also, funds would be appropriated to implement the carbon offset program. **The Department of Land and Natural Resources (DLNR) supports the current version of this measure and provides the following comments.**

The Hawai'i State Energy Office within DBEDT monitors Hawai'i's progress towards achieving the State's goal of 100% renewable energy by 2045. DLNR agrees that DBEDT is well positioned to facilitate a market for carbon offset credits related to energy production and reduction of use of fossil fuels through production, distribution and use of renewable energy and emission capture mechanisms.

DLNR has already invested in a parallel and complementary initiative in carbon offsetting through the certification of carbon sequestered in the biomass of trees in lands managed by DLNR. These DLNR supported projects would produce carbon offset credits that could be sold to emitters. Significant funds are needed to both plant trees that would sequester carbon as well as to certify a reforestation project under an established forest carbon standard. For the current DLNR pilot project we estimate that the revenues generated through the sale of carbon offset credits could cover about 15% of total reforestation and maintenance costs. Thus, revenue

received from sale of carbon credits to emitters would need to be available to DLNR, or other forest carbon provider, in order to continue these types of forest carbon projects.

DLNR manages and operates a number of ongoing reforestation projects on degraded and former forest lands often located in crucial watersheds all over the State. Watersheds are catch-basins or drainages for rain that is either funneled into stream beds or infiltrates into and recharges Hawaii's aquifers. As such, watersheds are the single most important part of our "water infrastructure", the source of domestic water supply for the cities, towns and communities of the State. The amount of water recharging our aquifers is strongly correlated with the land uses prevalent in the watersheds. A 1,400 acre forested watershed can provide 11 million gallons of water a day to Hawaii's aquifers (Waiawa Section of the Honolulu Forest Reserve).

Forest ecosystems not only capture significantly more water and prevent it from running off, resulting in damage to our coral reefs and brown-water beach closures, than any other land use, but can also sequester and store remarkable amounts of carbon dioxide, resulting in a powerful climate change mitigation effect. Recent scientific estimates by the United States Geological Survey suggest that an additional four million metric tons of carbon, equal to 89% of Hawaii's annual ground transportation emissions, could be sequestered and stored by reforesting current non-native grass and shrub-lands under the jurisdiction of the DLNR's Division of Forestry and Wildlife alone.¹

DLNR has invested significantly in the exploration and due diligence necessary to launch carbon forest pilot projects certified under an established forest carbon standard. Such standards verify and certify the amount of carbon sequestered in forest carbon projects through independent third-party auditors and operate transparent registries that track the generation, retirement, and cancellation of every single carbon offset credit in databases accessible online. Certifications under established forest carbon standards require substantial staff and financial resources (usually well over \$100,000 over the entire project period). Much more resources are necessary to implement the actual reforestation work on the ground. Once carbon offset credits are verified and issued by the standard the pricing is market-based and varies internationally between approximately \$0.70 and \$70 per credit.²

Although independent certification bodies and registries already exist for forest carbon offset projects located in Hawai'i, DLNR acknowledges the value of a coherent statewide carbon offset program for coordination and marketing purposes. The remarkable climate change mitigation potential and indispensable contribution to the State's drinking water supply of healthy forests within watersheds should be reflected both in the design and decision-making process of the program and in the allocation of revenues derived from forest carbon sequestration credits.

DLNR stands ready to collaborate and coordinate with DBEDT on these parallel and complementary efforts.

Thank you for the opportunity to comment on this measure.

¹ See latest [Hawai'i Greenhouse Gas Inventory report](#).

² See [State of Forest Carbon Finance 2017 Report](#) by Ecosystem Marketplace.



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

DAVID Y. IGE
GOVERNOR

LUIS P. SALAVERIA
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR

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Statement of
LUIS P. SALAVERIA
Director
Department of Business, Economic Development and Tourism
before the
SENATE COMMITTEES ON WAYS AND MEANS
Wednesday, April 4, 2018
10:30 a.m.
State Capitol, Conference Room 211
in consideration of
HB1986, HD2, SD1
RELATING TO THE ENVIRONMENT.

Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee.

The Department of Business, Economic Development and Tourism (DBEDT) **supports the intent** of House Bill 1986, HD2, SD1, provided that its passage does not replace or adversely impact the priorities indicated in the Executive Budget.

HB1986, HD2, SD1 establishes a carbon offset program under DBEDT, in partnership with the DLNR. The bill specifies that all revenue generated from forest carbon offset credits be deposited into the forest stewardship fund, and any non-forest carbon credit revenue be invested in projects enhancing the State's efforts to mitigate climate change, improving the State's water infrastructure, or mitigating threats to water sustainability efforts. The bill appropriates funds to implement the carbon offset program.

Your Carbon Farming Task Force has determined that carbon offset projects presently can be categorized into forestry and land use, industrial gases, methane capture, energy-efficiency, renewable energy, and transportation projects. Thus, there is potential for carbon offset projects to be performed by multiple state departments.

DBEDT notes that **HB 2182, HD2, SD1**, being heard by WAM on Thursday, April 5, appropriates \$150,000 to support the Greenhouse Gas Sequestration Task Force. If the Legislature **appropriates \$150,000 and one temporary planning analyst**, OP will have enough resources to begin implementation of a coordinated carbon offset program for all state agencies. OP will need to request follow-on funding for FY2019-20 and FY2020-21 in the biennium budget.

Thank you for the opportunity to offer these comments for HB1986, HD2, SD1.



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April 4, 2018

HEARING BEFORE THE
SENATE COMMITTEE ON WAYS AND MEANS

**TESTIMONY ON HB 1986, HD2, SD1
RELATING TO THE ENVIRONMENT**

Room 211
10:30 AM

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran and Members of the Committee:

I am Randy Cabral, President of the Hawaii Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,900 farm family members statewide, and serves as Hawaii's voice of agriculture to protect, advocate and advance the social, economic and educational interests of our diverse agricultural community.

The Hawaii Farm Bureau offers the following comments on HB 1986, HD2, SD1, which creates a carbon offsets market for Hawaii.

This measure seeks to create "carbon offset credits" in carbon trading to be used for funding of infrastructural changes e.g. drought mitigation associated with climate change, operated by DBEDT. This is a novel concept to fund infrastructural costs. However, it appears that the credits are from operations that reduce emissions. It does not recognize the potential role of agriculture in Hawaii.

Hawaii's agriculture has an opportunity contribute to providing carbon off sets. Research done at UH CTAHR is beginning to document the potential Hawaii's farms and ranches have to sequester carbon for a long time while increasing the amount stored each year. Unlike conversion from a fossil fuel generator to a solar unit that will immediately save a quantity of carbon emissions, the changes in levels of reducing emission will be constant and changing only with use. For example, if use of the generator drops for a year, the amount of carbon emission savings is less. In contrast, agriculture can continuously increase carbon storage under certain conditions. The research thus far has also demonstrated increase in soil water holding capacity further demonstrating that the fields themselves can act as a "water reservoir" for agriculture during dry periods.

Research across the world, e.g. Climate Change Impacts on Yields and Soil Carbon in Row Crop Dryland Agriculture (Robertson, Andy D. etal, 2017) document amounts of soil

organic matter (SOM) and associated soil carbon sequestered by agriculture and models its' long-term capacity for sustainable management of the State's natural resources. In this study, they demonstrate

“how dryland agricultural management in semiarid climates could build and maintain SOM while also maintaining yields under current and future climates. More intensively cropped rotations have the greatest potential for annualized yields as well as the highest soil C sequestration rates.”

Many of these studies have been done under temperate conditions. Studies by Dr. Susan Crowe et.al. at the University of Hawaii have documented steadily increasing soil carbon under perennial, no till agricultural systems in Hawaii. She has also documented gas emissions to document net carbon storage. Actively managed pastures also provide similar opportunities. The livestock industry has long referenced their ecosystem services they provide to the community. Efforts continue by Dr. Crowe and colleagues in quantifying and developing reliable data to support the role of agriculture in carbon trading. These efforts seek to develop best management practices under tropical conditions. The USDA NRCS is also working with us to develop Best Management Practices that can be included in Conservation Plans.

Clearly articulating that agriculture can be a potential contributor to carbon offset credits will further incentivize farmers and ranchers to adopt best management practices and help assure their economic viability while contributing to the long-term sustainability of their operations.

We suggest redefining “carbon offset credits” to not only include reduction in emissions but also sequestration.

“Carbon offset credit” means a tradable credit issued by the department under the program that represents a long term sequestered carbon or greenhouse gas reduction or greenhouse gas removal enhancement that is equivalent to one metric ton of carbon dioxide equivalent and meets the requirements of the program.

HFB agrees with the intent of this measure and believes agriculture can be an active player to meet the State's goals. We respectfully request your support to include the amended language in the measure.

Thank you for this opportunity to provide our input on this measure.

Testimony of The Nature Conservancy of Hawai'i
Supporting H.B. 1986 HD2 SD1 Relating to the Environment
Senate Committee on Ways and Means
Wednesday, April 4, 2018, 10:30AM, Room 211

The Nature Conservancy of Hawai'i is a private non-profit conservation organization dedicated to the preservation of the lands and waters upon which life depends. The Conservancy has helped to protect nearly 200,000 acres of natural lands in Hawai'i. We manage 40,000 acres in 14 preserves and work in 19 coastal communities to help protect the near-shore reefs and waters of the main Hawaiian Islands. We forge partnerships with government, private parties and communities to protect Hawai'i's watershed forests and coral reefs.

The Nature Conservancy supports H.B. 1986 HD2 SD1 to help facilitate a carbon offset market in Hawai'i.

The Nature Conservancy (TNC) has been using forest conservation and restoration to help solve the climate challenge and offset carbon for over a decade. By 2026, TNC's Noel Kempff project in Bolivia will have prevented 5.8 million metric tons of carbon from entering Earth's atmosphere. TNC also has forest carbon offset projects in Louisiana, California, Mexico, Brazil and Indonesia.

Here in Hawai'i, we are working with the Department of Land and Natural Resources (DLNR), the U.S. Forest Service (USFS) and other partners to determine how carbon offset credits can be generated from Hawaiian forests. Our focus is to qualify Hawai'i forest carbon for eligibility first in voluntary carbon offset markets and ultimately in regulated markets like California's cap-and-trade market. To do this, we collaborated with DLNR, USFS and Climate Action Reserve (CAR, climateactionreserve.org) -- whose forest carbon standards are the basis for credits in the California market -- to revise their protocols to certify Hawaiian forest carbon in voluntary markets and later in regulated markets. CAR protocols for Hawaiian forest carbon were approved in July 2017. Like DLNR, we are now turning our attention to pilot forest carbon sequestration projects in Hawai'i.

Thank you for the opportunity to testify in support of H.B. 1986 HD2 SD1.



Email: communications@ulupono.com

SENATE COMMITTEE ON WAYS & MEANS
Wednesday, April 4, 2018 — 10:30 a.m. — Room 211

Ulupono Initiative Supports the Intent of HB 1986 HD 2 SD 1, Relating to the Environment

Dear Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee:

My name is Murray Clay and I am Managing Partner of the 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 management of waste and fresh water. Ulupono believes that self-sufficiency is essential to our future prosperity and will help shape a future where economic progress and mission-focused impact can work hand in hand.

Ulupono supports the intent of HB 1986 HD 2 SD 1, which establishes a carbon offsets program, because it aligns with our goal of increasing the production of clean, renewable energy in Hawai'i.

A carbon offsets program can provide a mechanism for participants to reduce fossil fuel consumption. Ulupono is in support of this forward-thinking program, if structured correctly.

To better structure the program the legislation needs to be clear that:

- Any public or private entity can generate, sell, or buy carbon offset credits
- The credits are the property of the generator (entity that reduces carbon intensity)
- The State therefore can only receive income if it is the generator of carbon offsets/credits and/or it levies a tax on the sale of credits/offsets
- There needs to be a third-party validator that the credits are accurate (note, there are several national level firms that do this so a new entity to validate will not likely be needed)

As Hawai'i's energy issues become more complex and challenging, we appreciate this committee's efforts to look at policies that support renewable energy production.

Investing in a Sustainable Hawai'i



Thank you for this opportunity to testify.

Respectfully,

Murray Clay
Managing Partner

HB-1986-SD-1

Submitted on: 4/2/2018 11:59:02 PM

Testimony for WAM on 4/4/2018 10:30:00 AM

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

Comments:

To the Honorable Donovan M. Dela Cruz, Chair; the Honorable Gilbert S.C. Keith-Agaran, Vice-Chair and Members of the Committee on Ways and Means:

Good morning, my name is Melodie Aduja. I serve as Chair of the Oahu County Legislative Priorities Committee of the Democratic Party of Hawaii. Thank you for the opportunity to provide written testimony on **HB1986 HD2 SD1** relating to DBEDT; DLNR; Carbon Offset Program; Water Infrastructure; Climate Change; and an appropriation.

The OCC Legislative Priorities Committee is in favor of **HB1986 HD2 SD1**, and support its passage.

HB1986 HD2 SD1, is in accord with the Platform of the Democratic Party of Hawai'i ("DPH"), 2016, as it establishes a carbon offset program under the Department of Business, Economic Development, and Tourism, in partnership with the Department of Land and Natural Resources; allows the proceeds and revenue generated from forest carbon offset credits to be deposited into the forest stewardship fund, and non-forest carbon credits to be invested in projects enhancing the State's efforts to mitigate climate change, improving the State's water infrastructure, or mitigating threats to water sustainability efforts due to climate change; and appropriates funds to implement the carbon offset program, effective 1/28/2045.

Specifically, the DPH Platform states that "[t]he Democratic Party of Hawai'i believes that the preservation and restoration of our natural environment are essential. We support a sustainable society that utilizes the earth in such a way that future generations will benefit from the practices of our generation. We support the restoration, preservation, and protection of our native ecosystems on each island. We believe in integrated approaches, practices, and support public policies that create and maintain a sustainable way of life in Hawai'i.

We believe in supporting best management practices in sustaining our environment and in increased citizen involvement. We support programs that encourage sustainable clean, efficient, creative and environmentally friendly modes of transportation, recycling, and waste reduction.

The conservation, preservation and restoration of Hawai'i's natural resources are connected to the health and welfare of our people; therefore, we support the conservation and protection of our natural environment, which includes reducing our carbon footprint for the benefit of current and future generations.

We support the protection of our 'aina against destruction by corporate, government, or military usage and expect full restoration and reparation of environmental damage. To handle current and future demands for water, we must assess the current condition of our aquifers and take appropriate actions to secure our freshwater resources.

We believe in the vigorous enforcement of our environmental laws and increased public-private stewardships and citizen involvement in protecting our resources.

We know that climate change is a real threat to our islands and the world. We strongly urge our candidates and elected officials to take immediate action to mitigate and adapt to the consequences of climate change. This includes funding adaption measures including coastal retreat, effective participation of indigenous peoples in climate change governance, and recognition that indigenous, local, and traditional ecological knowledge is key in climate change adaptation solutions." (Platform of the DPH, P. 3, Lines 115-116, P. 8, Lines 406-425, 432-439 (2016)).

Given that **HB1986 HD2 SD1** establishes a carbon offset program under the Department of Business, Economic Development, and Tourism, in partnership with the Department of Land and Natural Resources; allows the proceeds and revenue generated from forest carbon offset credits to be deposited into the forest stewardship fund, and non-forest carbon credits to be invested in projects enhancing the State's efforts to mitigate climate change, improving the State's water infrastructure, or mitigating threats to water sustainability efforts due to climate change; and appropriates funds to implement the carbon offset program, effective 1/28/2045, it is the position of the OCC Legislative Priorities Committee to support this measure.

Thank you very much for your kind consideration.

Sincerely yours,

/s/ Melodie Aduja
Melodie Aduja, Chair, OCC Legislative Priorities Committee
Email: legislativepriorities@gmail.com, Tel.: (808) 258-8889

HB-1986-SD-1

Submitted on: 4/2/2018 5:59:51 PM

Testimony for WAM on 4/4/2018 10:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Benton Kealii Pang, Ph.D.	Individual	Support	No

Comments:

HB-1986-SD-1

Submitted on: 4/2/2018 12:48:03 AM

Testimony for WAM on 4/4/2018 10:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Sarah Toole	Individual	Support	No

Comments:

My name is Sarah Toole, my address is 1128 Ala Napunani St. 96818, and I am a political science student at UH Manoa.

I support this bill.

HB-1986-SD-1

Submitted on: 4/2/2018 10:17:56 AM

Testimony for WAM on 4/4/2018 10:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Leslie Cole-Brooks	Individual	Support	No

Comments: