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February 8, 2019

HEARING BEFORE THE  
SENATE COMMITTEE ON AGRICULTURE AND ENVIRONMENT  
SENATE COMMITTEE ON WATER AND LAND  
SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM

**LATE**

**TESTIMONY ON SB 1008  
RELATING TO LAND USE**

Room 414  
3:00 PM

Aloha Chairs Gabbard, Kahele, and Wakai, Vice Chairs Ruderman, Keith-Agaran, and Taniguchi, and Members of the Committees:

I am Brian Miyamoto, Executive Director 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 strongly opposes SB 1008. We are concerned about permanent loss of Hawaii's farmland.** This bill will allow development of utility scale solar projects on lands classified as having the highest productivity soil in the State. This is in conflict with our state's goal of food sustainability, our state's priorities, and public trust principles.

Nationwide, there is an ongoing struggle between solar developers and farmers. Land that is best for solar installations are often lands needed to grow crops or raise animals. The ideal tract of land for solar development is flat, dry, unshaded, close to transmission infrastructure and customers, accessible to installers and maintenance, and in an area with plenty of sunshine. All of these characteristics are associated with farmland. Prime farmland may be particularly attractive for solar development.

When a piece of land is developed for a solar installation, it is very unlikely to be reverted back to agricultural land, even when the lease to a solar company eventually runs out. Flattening and compacting the land, as well as other changes, tend to ruin the land for future farming. Rising demand for solar energy could swallow up huge swaths of farmland as struggling farmers may be coerced into selling or leasing to these developments. This is because leasing land for solar development can be more profitable, per acre, than

producing any crop. Furthermore, the consistent revenue stream from solar leases may be an attractive alternative to the typical risks that farmers take to produce food; i.e. insects, diseases, floods, drought, fickle market, transportation costs, etc.

Acknowledging this potential crisis, some states and counties have banned new solar developments on agricultural lands. Others have implemented strict policies such as tax penalties and permit hurdles to ensure no, or minimal impact to farmland. In some states, the state Department of Agriculture must certify that the project will not materially affect the status of any prime farmland. California, the national leader in both solar production and crop sales, imposes an expensive conversion penalty for converting farmland to solar. California policy is to favor solar development on “land that is not valuable habitat, open space, or farmland.”

Currently, Hawaii law allows solar development on B, C, D, or E classified land. Hawaii Farm Bureau strongly believes that siting these developments on A classified lands, as proposed in SB 1008, will be disastrous for agriculture in Hawaii.

Thank you for your consideration of our position.



**SENATE COMMITTEE ON WATER AND LAND**  
**Senator Kaiali'i Kahele, Chair,**  
**Senator Gilbert S.C. Keith-Agaran, Vice Chair**

**SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM**  
**Senator Glenn Wakai, Chair**  
**Senator Brian T. Taniguchi, Vice Chair**

**SENATE COMMITTEE AGRICULTURE AND ENVIRONMENT**  
**Senator Mike Gabbard, Chair**  
**Senator Russell E. Ruderman, Vice Chair**

**Senate Bill No. 1008**

DATE: Friday, February 8, 2019  
TIME: 3:00 p.m.  
PLACE: Conference Room 414  
State Capitol  
415 South Beretania Street

**TESTIMONY OF Hawaii Clean Power Alliance**

Chairs Kahele, Wakai, and Gabbard, Vice Chairs Keith-Agaran, Taniguchi, and Ruderman and Members of the Committees:

POSITION:

**We strongly support SB 1008**

DESCRIPTION:

Authorizes the development of utility scale solar development projects on certain lands by coexisting with agriculture

TESTIMONY

The Hawaii Clean Power Alliance (HCPA) is a nonprofit association organized to advance the development and sustainability of clean energy in Hawaii. Our mission is to educate the public about the benefits of clean energy, and to support Hawaii's policy goal of 100% renewable portfolio standard by 2045. The benefits of clean, utility scale, grid connected energy projects are numerous, including reducing Hawaii's dependence on fossil fuels, lowering carbon emissions, providing stable, multi-year long-term rates, which are passed on to rate payers. In addition, grid-connected clean power assists the income challenged and the over 50% of our population who rent and cannot put solar on their rooftop. Businesses can also benefit,



especially farmers, who experience a high cost of electricity with their operations. We feel of equal importance is the balance of Hawaii's need to support the goal of providing more locally grown food, in order to wean ourselves of the import of expensive, especially perishable food items.

Hawaii is at a policy crossroad, as we find it increasingly necessary to solve the sometimes seemingly contradictory goals of increasing renewable energy production, increasing food production and increasing affordable housing. Each vies for scarce resources such as land, water and human capital. This bill can help to solve to take away those silos and solve the problem of deciding one over the other by creating a meaningful and symbiotic partnership between two industries.

In the energy sector, there is a real time-bound deadline to get more megawatts developed on the grid because federal tax incentives are scheduled to decrease substantially in 2022 and these tax incentives are a pass through to ratepayers, and is proposed to provide the lowest cost of energy ever seen in the state. Fortunately, the use of technology has enabled advancements to help increase the production of energy, while decreasing the physical footprint.

The same is occurring with technology helping agriculture. With more being done in smart data analysis, vertical farming, innovative greenhouses, warehouse farming, aeroponics, aquaponics and hydroponics, farmers can now increase yields in a sustainable way. There are examples of innovation in farming right here in Hawaii, by traditional farmers, which help to control environmental and pest risks, but also help to lower the use and therefore cost of water. However, these facilities take more and more energy to run. There are numerous examples across the U.S. such as AeroFarms in New Jersey which delivers up to 30 harvests vs, 3 from a traditional far in New York State <https://aerofarms.com/>. Skygreens out of Singapore report similar ten times yields vs traditional farming <https://www.skygreens.com/>

We support SB1008 because it helps to solve the competing land use by making sure that solar co-exists with agriculture in a significant way.

Some of the benefits we see for the state and farmers include:

**Lower energy prices, energy security, reliability, decreased carbon footprint**

- By increasing our own production of renewable fuel, we become a more resilient state, without being dependent on external imports, thereby increasing our energy security, and reliability while decreasing our carbon footprint.
- For farmers, as well as businesses and households, the current cost of energy is one of the highest expenses in their monthly expenditures and can make the difference between



profitability or loss. Farmers are dependent on energy to power their operations, for example, processing, chillers and wells.

- In fact there are numerous bills this legislative body is proposing to promote preferential rates for protected agriculture.

#### **Long term protection of AG land LSB A for years to come (no housing)**

- Solar will protect the use of the land for 35 years, at which point the owner must go to LUC for extension or removal and it will return to sole use of agriculture.
- Provides time for the state and counties to create a master plan and policies to insure LSB A lands are not populated with housing, which can be done today via the CPR and subdivision process, with no oversight or regulation by government entities.
  - In fact there are numerous bills this legislative body is proposing to solve the misuse of condominium property regimes.
- This will enable the state to control the use criteria on private lands.

#### **Security**

- In many situations, farmed lands are also plagued with homeless, vagrants and thieves.
- A solar farm will bring security with fencing, 24/7 surveillance, and human monitoring, which will keep crime out at no extra expense to the farmer.
- Agricultural activities will also benefit by keeping farm equipment, crops and resources safe and secure.

#### **Co-exist with agriculture**

- An applicant must go before LUC no matter what size of project, so the LUC will insure that agriculture is being offered on the land at a discounted price to farmer(s). (at least 50% of the going lease rate or less).
- An applicant must provide water infrastructure to the farmer.
- The solar partner will leave any infrastructure that is provided and beneficial to the farmer when PV farm exits.
- The American Farm Bureau Federation has issued a comprehensive U.S. Energy Policy<sup>1</sup> which supports renewable energy for farmers benefit:

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<sup>1</sup> <https://www.fb.org/issues/energy/comprehensive-us-energy-policy/>



- To help reduce the nation’s dependence on foreign energy resources, stimulate energy production within the agricultural sector, and to ensure that farmers and ranchers have access to affordable energy.
- Farm Bureau advocates policies that will create a diverse, domestic energy supply to fuel America’s economic growth and prosperity while strengthening our energy security. Further development and use of renewable energy sources such as ethanol biodiesel, biomass, solar and wind are critical to our nation’s energy futuer and will help further strengthen teh overall national security of the United States. Farm Bureau supports a comprehensive approach to fulfilling our energy needs of today and into the future.
- In fact there are numerous bills this legislative body is proposing to promote vertical farming.

#### **Food Safety Benefits**

- Of concern to farmers, regulatory bodies and the retailers and restauranteurs who purchase the food are compiiance standards . By co-locating with a solar farm, there may be added benefits such as reduced cost of power for farming, wells, expensive chilling and drying operations.

#### **Limiting the risks of populating all the LSB A lands in the state**

- The bill limits the partnerships in LSB A designated lands to only 2 miles within a 138 KV line, built prior to January 1, 2016.
- The bill sunsets in 6/30/2025
- Certainly while some oppositon may see this as a potential for putting more acceptable uses on the LSB A lands, However, we see this as a way to help create an innovative, symbiotic partnership leveraging technology and business partners who bring needed assets to solve problems.

We urge you to pass SB1008.

Thank you for the oppportunity to testify.

**Senate Committee On Water And Land**  
Senator Kaiiali'i Kahele, Chair,  
Senator Gilbert S.C. Keith-Agaran, Vice Chair

**Senate Committee On Energy, Economic Development, And Tourism**  
Senator Glenn Wakai, Chair  
Senator Brian T. Taniguchi, Vice Chair

**Senate Committee Agriculture And Environment**  
Senator Mike Gabbard, Chair  
Senator Russell E. Ruderman, Vice Chair

**Senate Bill No. 1008**

DATE: Friday, February 8, 2019  
TIME: 3:00 p.m.  
PLACE: Conference Room 414  
State Capitol  
415 South Beretania Street

**TESTIMONY OF Kerry Kakazu, MetroGrow Hawaii**

Chairs Kahele, Wakai, and Gabbard, Vice Chairs Keith-Agaran, Taniguchi, and Ruderman and Members of the Committees:

POSITION:

Thank you for the opportunity to testify on Senate Bill No. 1008

**I submit this testimony in strong support**

DESCRIPTION:

Authorizes the development of utility scale solar development projects on certain lands with agricultural farming

TESTIMONY

My name is Kerry Kakazu and I am the owner and President of MetroGrow Hawaii, the first vertical farm in the state. Founded in 2013, I have combined my degrees in plant science along with my experiences with technology to create a vegetable farming system that is productive, sustainable and safe. We utilize aeroponic and hydroponic methods along with high efficiency LED lighting in a climate-controlled warehouse to grow quality produce for many of our local restaurants and Foodland Farms stores.

There is a need for protected agriculture as a supplement to traditional growing in order to meet the demand for local vegetable production and to move the state toward food self-sufficiency. Decreases in arable land, increasing weather unpredictability, reduction of fresh water availability and the tremendous pest pressures in Hawai'i necessitate research and development of alternative forms of agriculture. While our operation is able to reduce land, labor, transportation, water, fertilizer and pesticide usage in relation to traditional farms, electricity usage for environmental control is higher. In order to become more economically sustainable we will need to reduce our electricity costs by the incorporation of renewable energy.

The high relative cost of electricity in Hawai'i is a deterrent to profitability for all farms, not just protected agriculture. In addition to environmental control, electricity is needed for other farm equipment, crop processing and post-harvest storage. The co-location of utility scale solar systems with agricultural

operations is a sensible, cost-effective means of reducing the energy expenses and increasing the revenue potential of local farms with only a small impact on land usage. In addition, an increase in community solar energy production will be a benefit to all electricity users in the state, not just farmers.

Today's farming industry must work toward utilizing technology and partnerships to be able to have sustainable growth and longevity. By allowing farming and solar energy generation to coexist on LSB A lands, the chances of agriculture thriving in Hawai'i will improve.

Please pass SB1008.



## **SENATE COMMITTEE ON WATER AND LAND**

Senator Kaiali'i Kahele, Chair,

Senator Gilbert S.C. Keith-Agaran, Vice Chair

## **SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM**

Senator Glenn Wakai, Chair

Senator Brian T. Taniguchi, Vice Chair

## **SENATE COMMITTEE AGRICULTURE AND ENVIRONMENT**

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### **Senate Bill No. 1008**

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TESTIMONY OF: DEAN J. OKIMOTO

Chairs Kahele, Wakai, and Gabbard, Vice-Chairs Keith-Agaran, Taniguchi, and Ruderman, and members of the Committees,

Thank you for the opportunity to testify on Senate Bill No. 1008, **I am in strong support of this bill.**

It authorizes the development of utility scale solar development projects on certain lands by co-existing with agriculture.

I am Dean Okimoto, formerly President of Nalo Farms, Inc., and I was farming for 35 years in Waimanalo, and shut down my farm in October 2018. I began my farm in 1983, and worked with chefs like Roy Yamaguchi, Alan Wong, Russell Siu and a host of others, at one time servicing about 100 restaurants and outlets. I know the value of branding and having farmers face the public. In 2003, along with Joan Namkoong and Conrad Nonaka, started the first Farmer's Market at KCC and it was sponsored by the Hawaii Farm Bureau, of which I was president of. I have always been active in the community helping non-profit causes and many schools with donations of product as well as making salads to raise money for these causes.

I shut down my operations because of being hit by 4 storms since April, 2018, which wiped out my crops on four separate occasions. Each time my crops were destroyed and I was left without income and trying to support my work force as well as cover expenses. I lost in excess of \$800,000 and am now in a bad financial situation. The issue is that with climate change, farming needs to be done differently, and we must embrace technology, whether it be greenhouse growing to protect from the weather, or other things which can control input costs. With Food safety rules coming into play by the federal Food Safety

Modernization Act, farmers have to deal with the added costs that come with it, and one of the largest is refrigeration on site. This cost was in excess of \$10,000/month for us, so PV and solar solutions for farmers is absolutely critical to keep prices down, and for them to make money. This is in addition to rising costs for labor, transportation, fighting pests, and more regulations which farmers must follow, the biggest being food safety.

The reason why I am in favor of this bill, is that we must start melding the energy issues with agriculture in order for the success of agriculture. When it is a scaled solar project like this, there is security measures that must be put in to protect the PV, but this is also a great reason to put agriculture in there also. Since there is security, farmers do not need to have that expense or have homes on the land and their equipment and products are watched over. Farms suffer from thefts of product and equipment, vagrants and vandals.

Having access to lower electricity rates because the PV is renewable and offers a long term stable rate is a huge plus for farmers and the public, as it would be reflected in the cost of the products also.

I also believe that we need to do more greenhouse growing, managing all impacts because of the need to utilize electrical sources to run pumps, lights, and temperature control methods. Greenhouses also help in pest control environmental impacts, and labor. And therefore provide greater yields on less space.

This measure can be a good example of melding energy efficient methods and cost savings with agriculture as a co-existing partner. This is a win-win for agriculture, solar development, and the public in general. We can actually protect LSB A lands with a project of this size because again the farmer does not have to live on the land.

Thank you for the opportunity to submit my testimony.

**Senate Committee On Water And Land**  
Senator Kaiali'i Kahele, Chair,  
Senator Gilbert S.C. Keith-Agaran, Vice Chair

**Senate Committee On Energy, Economic Development, And Tourism**  
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**TESTIMONY OF RICHARD HA, HAMAKUA SPRINGS**

Chairs Kahele, Wakai, and Gabbard, Vice Chairs Keith-Agaran, Taniguchi, and Ruderman and Members of the Committees:

POSITION:

Thank you for the opportunity to testify on Senate Bill No.1008

DESCRIPTION:

Authorizes the development of utility scale solar development projects on certain lands with agricultural farming

TESTIMONY

**I strongly support SB1008.**

I am Richard Ha. I am a Vietnam Veteran officer, I have a BS in Accounting, Shidler College Hall of Honor, Distinguished Alumni, University of Hawaii, First chair of Hawaii Island Native Hawaiian Chamber of Commerce. And, I serve on various other non-profit positions.

I have farmed on the Big Island for nearly 40 years, primarily bananas and hydroponic tomatoes. We produced nearly 6 million pounds of bananas and 1 million pounds of hydroponic tomatoes annually. Most recently I was the CEO of Medical Cannabis Company Lau Ola. The growing facility was a completely controlled environment. Lights, temperature and humidity were precisely controlled. Several years ago we installed a 100 KW hydro electric generator on Waia'ama River on our 500 fee simple acre farm. Along the way we built a tissue culture lab.

Around 2007 we noticed our input costs- plastic, chemicals and fertilizer starting to rise. Since they were petroleum based products I went to the first of five Association for the Study of Peak Oil conferences. There I learned that the world had been using twice as much oil as it had been finding, for the previous 20 years. By 2009, the new shale oil, horizontal Dilling and fracking started increasing production in the US. The characteristic of shale oil was that the wells are small and 90%

comes out by four years. Ten years and 70,000 wells later we are about to reach the peak of shale production and prices will start to rise.

Since the 2008 oil spiked to \$147 per barrel, farming became harder. We found it necessary to stop our profit sharing program. Today Hawaii imports 85% of what we eat, petroleum prices will soon start rising and we need to think about food and energy security in a different way. Greenhouse farming results in a smaller footprint compared to the volume produced.

This way of helping farmers does not require a tax hike.

That's why I like the idea of energy and agriculture helping each other out.

Please pass SB1008.