

THE CURRENT

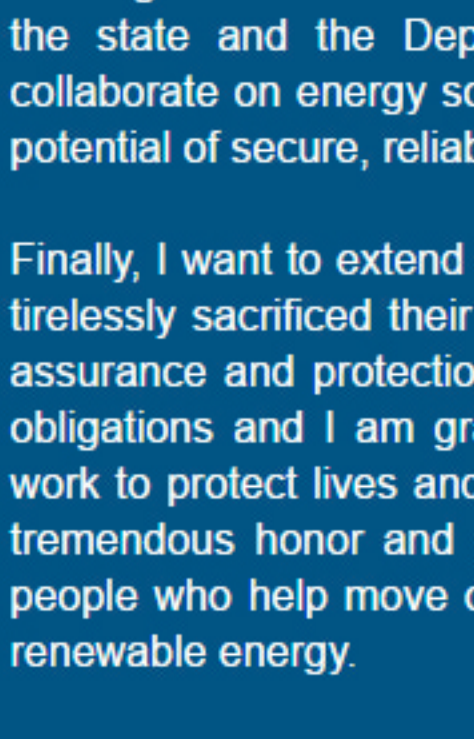
Hawaii State Energy Office
Clean Energy Update

SUMMER 2016

THE CURRENT serves Hawaii's businesses and policy makers in making informed decisions about clean energy investments and policy. Hawaii's clean energy sector is a significant driver for economic development to replace fossil fuel expenditures with home-grown industries that stimulates smart economic growth for future generations of Hawaii.

TAKING BIG STEPS TO ENERGY INDEPENDENCE

Mark Glick, Energy Administrator



The Dog Days of Summer is an appropriate time to think about clean, renewable energy. On those steamy, muggy days when the trades die down, we either jump in the ocean or find a place with A/C to cool off. Despite formidable challenges, Hawaii still leads the nation in solar PV penetration, meaning more of our summer cooling is powered by the source of all of that heat, the sun. How ironic! If only we could find a way to convert humidity to power...

As we look for the "art of the possible," the prospects for new and improved ways to take advantage of clean, renewable power sources increased greatly this summer thanks to several developments covered in this issue of **THE CURRENT**. The Hawaii State Energy Office's **VERGE Hawaii - Asia Pacific Clean Energy Summit** brought the best minds in clean energy to Hawaii, and we are grateful to the GreenBiz Group and the many sponsors and supporters for working with us to host this tremendous event here at home. At **VERGE Hawaii**, the state and the Department of the Navy also signed an agreement to collaborate on energy solutions and align our vision and ambition for the future potential of secure, reliable, clean power.

Finally, I want to extend a sincere mahalo to the HSEO staff and everyone who tirelessly sacrificed their time and efforts during Tropical Storm Darby. Energy assurance and protection of critical infrastructure is one of our most important obligations and I am grateful for the dedication and knowledge of those who work to protect lives and critical assets in the face of natural disasters. It is a tremendous honor and privilege to work with the many dedicated and skilled people who help move our state forward every day on the path to 100 percent renewable energy.

CLEAN ENERGY VISION

The Hawaii State Energy Office's (HSEO) mission is to maximize Hawaii's energy self-sufficiency and security by developing and utilizing local energy resources in a balanced way.

In doing so, HSEO will guide our state toward the HCEI MAX goals to achieve 100 percent renewable energy in the electricity sector by 2045, reduce electricity consumption by 4,300 gigawatt-hours by 2030, and reduce petroleum use in transportation. To this end, HSEO works toward the deployment of clean energy infrastructure and serves as a catalyst for energy innovation and test bed investments. By achieving these goals, HSEO will grow the clean energy sector and transform Hawaii's economy.

LEADING THE CHARGE

Glick Leads Another Charge

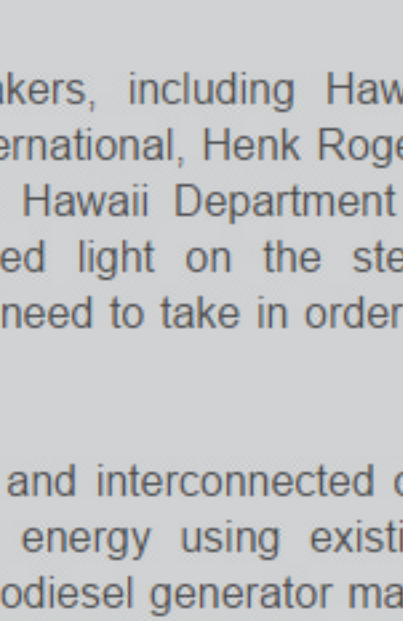
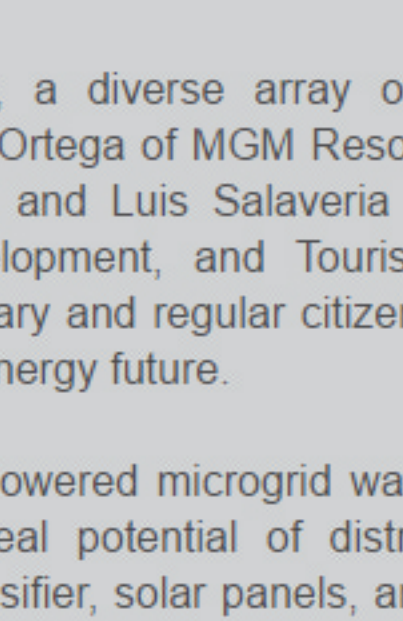
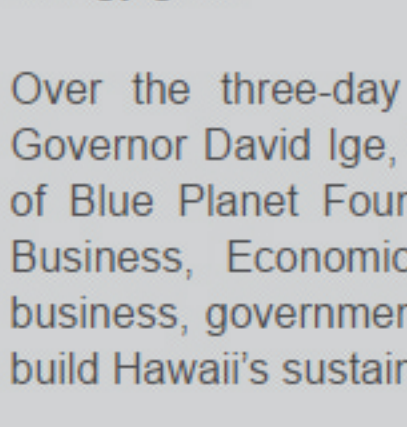
Mark Glick, energy administrator, who was elevated in March to vice-chair for the Board of Directors of the National Association of State Energy Officials (NASEO), is expected to be reaffirmed as vice-chair for another year at the annual meeting in September. NASEO is the only national non-profit association for energy officials from each of the 56 states and territories and serves as a resource for and about state energy offices, and advocates the interests of the state energy offices to Congress and federal agencies. In this leadership position, Mr. Glick will be able to share experiences and bring back to Hawaii the best practices from across the nation.

Solar Superstar: Honolulu

According to a report by Environment America, Honolulu ranks No. 1 for solar installations per capita. Cities with the most solar PV installed per capita are the "Solar Stars" and have experienced dramatic growth in solar energy and are setting the pace nationally for solar energy development. Honolulu, Indianapolis, San Jose, San Diego and Albuquerque are the top five cities in the nation for installed solar PV capacity per person.

Energy Security Agreement: Full Steam Ahead

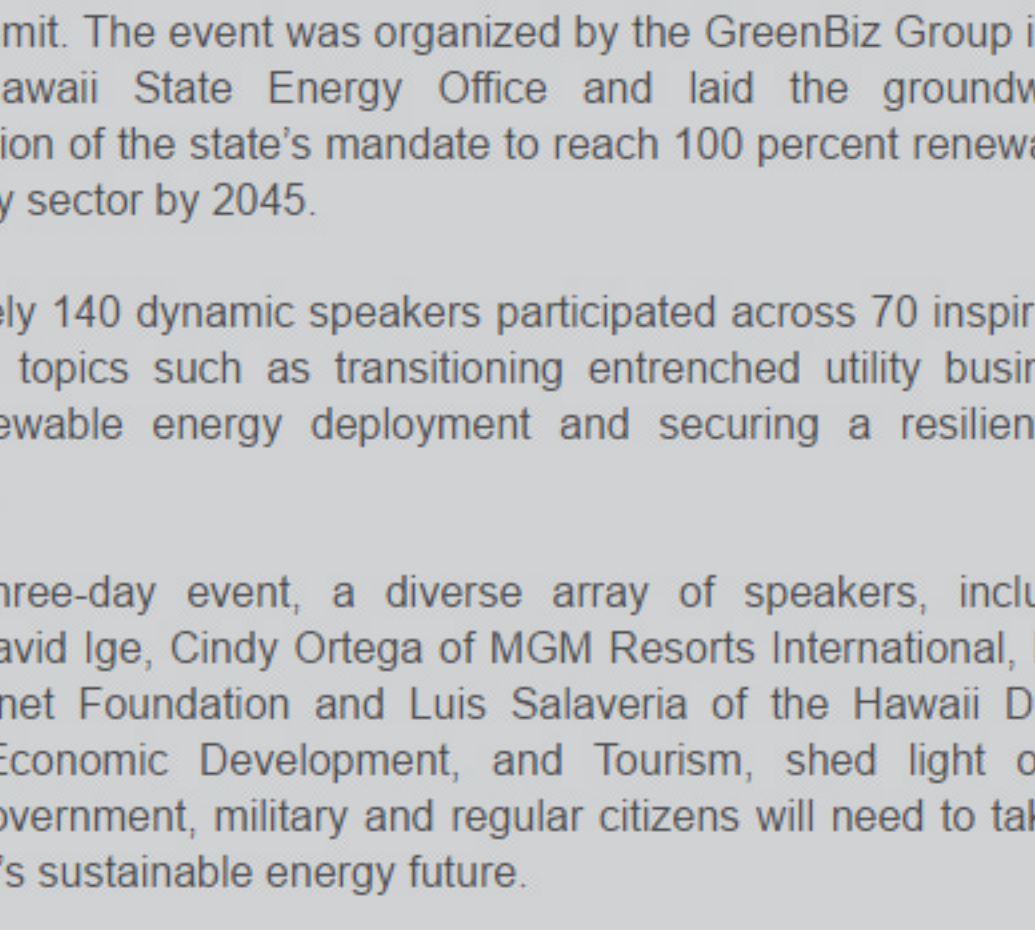
On June 21, Gov. David Ige and Assistant Secretary of the Navy, the Honorable Dennis McGinn, signed a Memorandum of Understanding (MOU) to work on energy-related issues of mutual benefit, to coordinate goals and to build partnerships whenever possible. The MOU aims to leverage the human and financial resources of the state and the Department of the Navy towards a shared vision on energy security and self-sufficiency.



[Glick Leads Another Charge](#)

[Solar Superstar: Honolulu](#)

[Energy Security Agreement: Full Steam](#)



ON THE VERGE: HIGHLIGHTS FROM HAWAII

In June, more than 750 business, military, government and nonprofit leaders convened in Honolulu for the first annual **VERGE Hawaii: Asia Pacific Clean Energy Summit**. The event was organized by the GreenBiz Group in partnership with the Hawaii State Energy Office and laid the groundwork for the implementation of the state's mandate to reach 100 percent renewable power in the electricity sector by 2045.

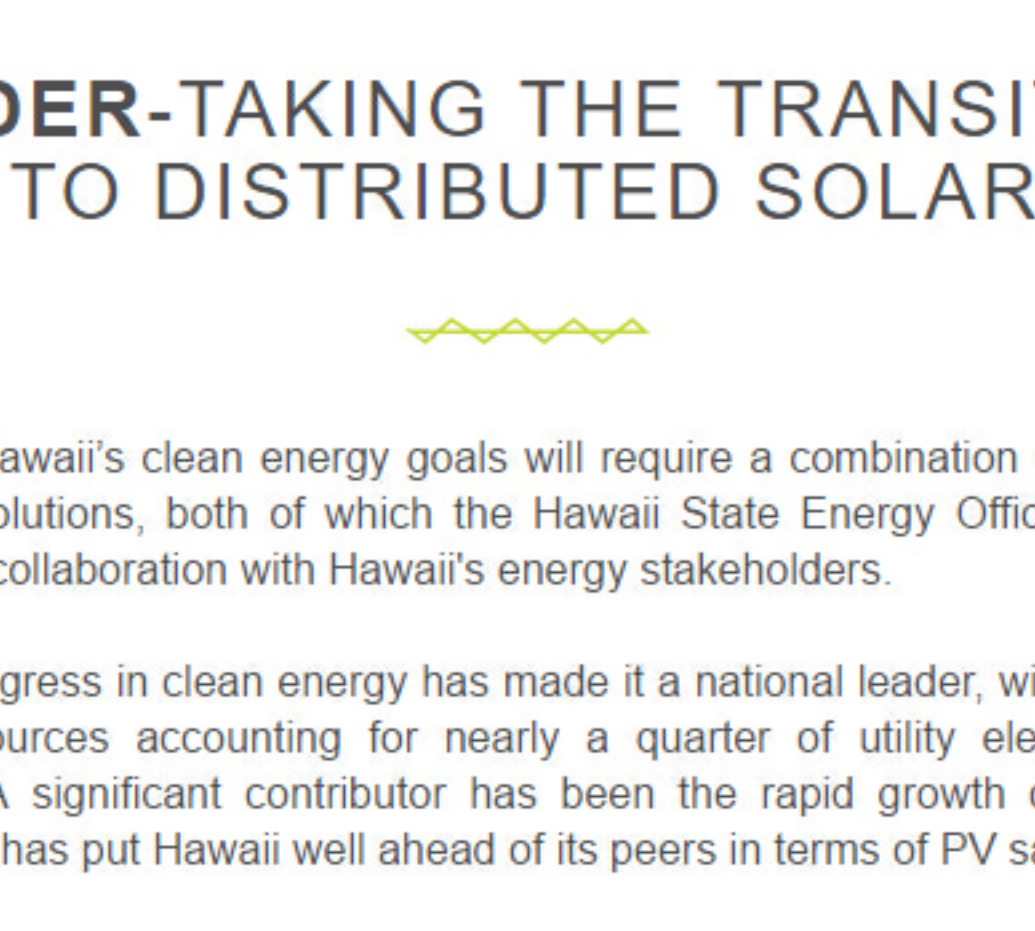
Approximately 140 dynamic speakers participated across 70 inspiring sessions, focusing on topics such as transitioning entrenched utility business models, scaling renewable energy deployment and securing a resilient, distributed energy grid.

Over the three-day event, a diverse array of speakers, including Hawaii Governor David Ige, Cindy Ortega of MGM Resorts International, Henk Rogers of Blue Planet Foundation and Luis Salaveria of the Hawaii Department of Business, Economic Development, and Tourism, shed light on the steps business, government, military and regular citizens will need to take in order to build Hawaii's sustainable energy future.

A 100 percent renewably powered microgrid was built and interconnected on-site to demonstrate the real potential of distributed energy using existing technologies. A biomass gasifier, solar panels, and a biodiesel generator made up the microgrid, which helped power the event and charged several electric vehicles—including Hawaii's first Tesla and a BMW i8.

This September 19-22, Mark Glick, energy administrator, will take part in the [VERGE 16 conference and expo](#) in Santa Clara, Calif., to share Hawaii's story with fellow innovators on the mainland.

An archive of the mainstage presentations and interviews that took place at **VERGE Hawaii** is available [online](#). **VERGE Hawaii** will return to Honolulu next year, June 20-22, 2017, so save the date!



UN-DER-TAKING THE TRANSITION TO DISTRIBUTED SOLAR

Achieving Hawaii's clean energy goals will require a combination of short- and long-term solutions, both of which the Hawaii State Energy Office (HSEO) is pursuing in collaboration with Hawaii's energy stakeholders.

Hawaii's progress in clean energy has made it a national leader, with renewable energy resources accounting for nearly a quarter of utility electricity sales statewide. A significant contributor has been the rapid growth of distributed solar, which has put Hawaii well ahead of its peers in terms of PV saturation.

Environment America recently ranked Honolulu as the nation's top city for installed PV capacity per capita for the third consecutive year. Honolulu's 417 watts per person of installed PV on a cumulative basis was nearly three times higher than second place Indianapolis, which had 146 watts per person. Although Environment America has not yet released statewide PV rankings for 2015, Hawaii topped the organization's 2014 list with 312 watts of installed PV capacity per capita.

Of course, with such a rapid expansion of distributed energy resources, there have been growing pains. In addition to upending the traditional business model for utilities, the high penetration of distributed energy is also putting stress on the electrical grids due to its volatility and intermittency.

HSEO is actively involved in a host of regulatory dockets and working groups to help smooth this transition. The involvement ranges from steps being taken now to facilitate the interconnection of more distributed energy resources (DER) to the longer-term strategic planning to optimize utility investments that will be needed to achieve a 100 percent renewable portfolio standard.

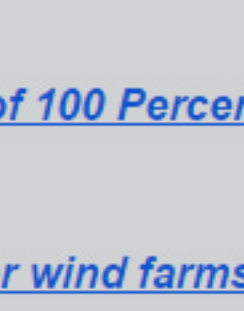
One of HSEO's top priorities is participation in an open Public Utilities Commission Docket that will address the next phase of DER regulatory reforms. "DER Phase 2," as it is being called, will focus on further developing competitive markets for distributed energy resources, including energy storage. The focus is to enhance the value of DER by enabling systems to provide grid-supportive benefits.

On the planning side, HSEO is a participant in a docket designed to review the power supply improvement plans for the Hawaiian Electric Companies. HSEO staff are meeting with HECO and other stakeholders to analyze the system requirements necessary to integrate 100 percent renewable energy into the electricity system. HSEO is particularly interested in the benefits of dispatchable energy, and the tradeoffs between firm and intermittent renewables paired with storage. These are complex issues that need to be clearly understood to optimize Hawaii's energy ecosystem.



DID YOU KNOW?

According to the U.S. Energy Information Administration, Hawaii produces no natural gas and has no proved natural gas reserves. Hawaii is one of only two states in the nation that produces synthetic natural gas called syngas.



ENLIGHTENING NEWS & ARTICLES

[HECO and Navy sign lease for huge West Loch solar farm](#)

(Honolulu Star-Advertiser, 7/22/16)

[PUC rejects NextEra's purchase of Hawaiian Electric](#)

(Honolulu Star-Advertiser, 7/15/16)

[From Worst to First: Can Hawaii Eliminate Fossil Fuels?](#)

(Governing, July 2016)

[Hawaii's Clean Energy Future](#)

(Capitol Connection, July 2016)

[Lessons from Hawaii: Pursuit of 100 Percent Clean Energy Goal](#)

(Brink News, 6/03/16)

[Companies propose deep-water wind farms off Hawaii shores](#)

(Honolulu Star-Advertiser, 5/16/16)

[State to explore utility options](#)

(Hawaii Tribune Herald, 5/08/16)



UPCOMING EVENTS

NELHA and the County of Hawaii will hold the first NELHA Energy Storage Conference, **September 12-13, 2016**, in Kailua-Kona. This event will focus on energy storage and microgrid initiatives and projects in NELHA, specifically on Hawaii Island. To register or for more information, visit [NELHA Energy Storage Conference](#).

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