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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.

COMMUNITY ENGAGEMENT AND EDUCATION ARE KEY FOR HAWAII'S CLEAN ENERGY GOALS

Carilyn O. Shon, Energy Program Administrator

It is well established that there are synergies between the role of renewable energy and energy efficiency in driving down global greenhouse gas emissions. Hawaii is a leader in both areas, having implemented ambitious policies to boost both our renewable portfolio and energy efficiency portfolio standards. The Hawaii State Energy Office (HSEO) supports these complementary objectives, and is working on a host of initiatives that will help Hawaii increase its use of indigenous renewable energy resources and reduce energy waste through improved efficiency.

In the first featured story in this issue of The Current we report on the effort by HSEO and Hawaii Energy to train private- and public-sector representatives on implementation of a new energy conservation code, which will dramatically increase the energy efficiency of homes and buildings. The 2015 International Energy Conservation Code with Hawaii-specific amendments will eventually cover the construction and renovation of most residential, commercial, and government buildings in Hawaii. It was encouraging to see that the recent training sessions across the state were well attended.

Our second featured story looks at the work HSEO is doing on a study commissioned by the Legislature to evaluate potential alternative utility ownership and regulatory models for Hawaii. As with the energy code training, community outreach is an important component of the utility model study. HSEO and its consultant are preparing for a second round of community workshops around the state to gather public input. We value that input, which will help inform the drafting of the study.

FEATURED STAFF: VISUALIZING HAWAII'S ENERGY LANDSCAPE

Michael Schwing, Energy Systems and Planning Branch

Planning to achieve a 100 percent renewable portfolio standard is a complex and iterative process. Understanding the economic, environmental, and energy security impacts of the key decision points in various planning scenarios is essential for decision makers to have a complete picture of the energy landscape proposed in each scenario.

The Energy Systems and Planning Branch (ESP) is developing tools to assist planners, decisionmakers, and other stakeholders in better understanding the relationships, trade-offs, and impacts of policies, regulations, and decisions made in the energy and related sectors. ESP's Michael Schwing is leading the development of these tools. He is the principal investigator of a U.S. Department of Energy competitive grant, the Hawaii Advanced Visualization Environment Nexus, or HAVEN, which will demonstrate visualization as an effective means of analyzing and communicating the tradeoffs and interdependencies of clean energy deployment. Michael is also working with the National Renewable Energy Laboratory, developing an analytical model that will perform scenario analysis on Hawaii's comprehensive energy eco-system. This model will feed energy ecosystem visualizations for program and policy assessment and presentations to energy stakeholders.

"Our hope is that the development of these tools will make the sea of big data more approachable and provide stakeholders and decision-makers with a new perspective on energy planning," Michael says.

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 Hawaii Clean Energy Initiative 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

Commemorative Video Celebrates HCEI Milestone

The Hawaii Clean Energy Initiative (HCEI) video, *Celebrating 10 Years of Success*, commemorates the 10th anniversary of HCEI and provides an opportunity to reflect on the successes of the initiative. Produced by the National Renewable Energy Laboratory, the video describes the unique challenges Hawaii faced a decade ago as the most oil-dependent state in the nation and celebrates its bold vision to transition to a clean energy economy.

Exploring Hawaii's Clean Energy Goals in 2030 and 2045

Energy Program Administrator, Carilyn O. Shon, will moderate a panel on Hawaii's clean energy milestone goals titled, *Hawaii in 2030 and 2045: Energy, Economy, and Environment*, at VERGE Hawaii: Asia Pacific Clean Energy Summit. The panel will discuss energy, population, fossil fuel impacts, and environmental and economic implications. Panelists include Dr. Eugene Tian of DBEDT, Shasha Fesheraki of FGE Hawaii, and Dr. Brad Romine of UH and DLNR.

Encouraging Sustainability for Restaurants and Food Services

The Hawaii Green Business Program is now offering a 10-Entry Level checklist to small business restaurants and food service establishments. The 10-Entry Level process helps these businesses move toward building a more environmentally friendly business and reach for the highest levels of sustainability. The 10-point checklist assesses a business's green attributes and practices.



<u>Commemorative</u> Video Celebrates HCEI Milestone



Exploring Hawaii's Clean Energy Goals in 2030 and 2045



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INCREASING EFFICIENCY THROUGH NEW ENERGY CODE

The Hawaii State Energy Office (HSEO) and Hawaii Energy recently organized a series of statewide training sessions on Hawaii's new building energy code, which drew strong interest from architects, engineers, contractors, government employees, and others in the local design and construction community.

The 2015 International Energy Conservation Code (IECC) with Hawaii-specific amendments, is expected to save more than \$1 billion in energy costs over the next 20 years when adopted statewide. The code was put in place for state buildings in March 2017, and all four counties are now working toward adoption of the code, which governs new construction and most renovation of residential, commercial, and government buildings.

Attendees filled meeting rooms on Hawaii Island, Maui, and Oahu for training sessions conducted by HSEO, a division of the Department of Business, Economic Development, and Tourism, in partnership with Hawaii Energy. The session scheduled for Kauai was postponed due the recent storm flooding on the island. The Kauai session will be rescheduled and conducted as a webinar.

"The new energy conservation codes will have a profound impact on the efficiency of our buildings

and homes," said Carilyn Shon, HSEO administrator. "Commercial buildings alone will see energy savings between 35 to 40 percent, which means reduced costs and better cash flow for building owners. These savings will go a long way toward helping Hawaii achieve its statutorily mandated clean energy targets," she said.

The in-person training sessions were conducted from April 16-23 by HSEO energy analyst Howard Wiig and consultant Erik Kolderup, P.E. The program on each island consisted of a morning session for the public sector and an afternoon session for the private sector.

"The response was overwhelming," said Wiig, who also sits on the Hawaii Building Code Council. "We had standing room only at some of the sessions. Both industry representatives and government officials understand the importance of training to prepare for the new requirements they will have to comply with when the new energy code is fully implemented," he said.

Homes and buildings account for a significant share of Hawaii's electrical use, and robust energy conservation codes are an extremely effective means for shrinking that usage. The new energy code is the result of work done by the Hawaii Building Code Council to adopt the 2015 IECC with Hawaii-specific amendments.

"The greatest energy savings in the residential sector will be due to decreasing cooling loads, increasing comfort with natural ventilation, and eliminating the need for electric water heating," according to an analysis of the updated codes conducted by The Cadmus Group, a consultancy that works in the energy field.

The 2015 IECC updates the previous energy conservation code that had been in effect since 2006. Due in part to the increased stringency of the 2015 IECC and the inclusion of the Hawaii-specific amendments, the Hawaii Building Code Council made fewer modifications to the IECC than in previous years, according to The Cadmus Group.

The new building energy code training presentation is available at <u>energy.hawaii.gov/hawaii-energy-building-code</u>.



STUDYING UTILITY OWNERSHIP AND REGULATORY MODELS

The Department of Business, Economic Development, and Tourism (DBEDT), through its energy office, is gearing up for the second round of statewide community workshops to solicit public input for a study to evaluate potential alternative utility ownership and regulatory models for Hawaii.

The state Legislature requested the study in 2016 to provide guidance on which models could best serve Hawaii as it makes the transition to an electricity system that takes full advantage of the state's plentiful clean, indigenous energy resources. The study will evaluate the ability of various ownership and regulatory structures to help Hawaii achieve its long-term energy goals and maximize consumer cost savings. It will also assess its ability to enable a competitive distribution system that meets customer need and eliminates or reduces conflicts of interest in energy resource planning, delivery, and regulation.

"Community outreach is an important part of the discussion as we look at utility ownership and regulatory models that will help us transition to a clean energy economy," said DBEDT Director Luis P. Salaveria. "This study will provide the thorough and thoughtful analysis needed to explore all the possible ways in which the utility sector could be organized to facilitate this transformation."

The Hawaii State Energy Office (HSEO) has contracted with Boston-based London Economics International (LEI) to carry out the study, which is expected to be completed by January 2019. In the first round of public outreach conducted last fall, LEI and its subcontractor Meister Consultants Group held meetings on Kauai, Maui, Lanai, Molokai, Hawaii Island, and Oahu to share information and gather community input on utility ownership models that could be implemented in Hawaii.

The next round of community meetings in June will focus on the long-term operational and financial costs and benefits of electric utility regulatory models for each county in Hawaii. For a schedule of locations, dates, and times, go to: <u>energy.hawaii.gov/utility-model/community-outreach</u>.

This phase of the study will determine the long-term operational and financial costs and benefits of a variety of system operation and oversight regulatory models to serve each county of the state. Examples of the models to be studied include: the status quo, the status quo with increased regulatory oversight, an independent system operator, a distribution-focused model, and a performance based model. The analyses will provide information on how each model operates and how the oversight of the different components of the electric power value chain are managed.

HSEO is planning a final round of statewide community meetings this fall to gather public comment on a preliminary draft of the study.



DID YOU KNOW?

Hawaii made the 2017 U.S. Green Building Council's annual list of Top 10 States for LEED (Leadership in Energy and Environmental Design), a green building ranking system. Hawaii returned to the list for the first time since 2014 proving energy efficiency boosts Hawaii's clean energy efforts by lessening the amount of energy used.



ENLIGHTENING NEWS & UPDATES

Hawaii Gov. Ige signs law mandating performance-based utility regulation (Utility Dive, 4/25/18)

Electric bus tests getting a wider Hawaii rollout (Honolulu Star-Advertiser, 4/12/18)

Honolulu leads the nation in installed solar capacity per capita (Pacific Business News, 4/04/18)

Hawaii designates alternative fuel corridors with EV charging (Electric Light & Power, 3/28/18)

Hawaii university campus aims to become first to use 100 percent renewable energy (CBS News, 3/21/18)

Energy storage and green waste to energy project underway at UH Hilo (UH Hilo Stories, 3/13/18)

Ige leads effort urging Congress to protect funding for clean energy programs (Pacific Business News, 2/21/18)

Hawaiian Electric Companies reached 27 percent renewable portfolio in 2017 (Daily Energy Insider, 2/15/18)

Honolulu energy storage permits jumps more than 1,700% (PV Magazine, 2/5/18)



UPCOMING EVENTS

HSEO is proud to be partnering with GreenBiz Group for the third annual VERGE Hawaii: Asia Pacific Clean Energy Summit, June 12-14, 2018, at the Hilton Hawaiian Village in Honolulu.

VERGE Hawaii is the platform for the systems-level thinking necessary to build the clean economy. This year's program is framed by seven tracks identified as the key drivers of a clean economy in Hawaii: Building Efficiency, Distributed Energy Systems, Decarbonizing Transportation, Grid-Scale Power, Models for Market Transformation, Resilience and Security, and Sustainable Tourism.

Join more than 800 stakeholders — from corporations, government, military, utilities, NGOs and solution providers — to create new partnerships and explore emerging technologies that will increase economic and community resilience — in Hawaii and beyond.

Register today and use code VH18HSEO10 for a 10% discount. **Register today for VERGE Hawaii!**

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