HAWAII STATE
Energy Office

THE CURRENT

Hawaii State Energy Office
Clean Energy Update

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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 stimulate smart economic growth for future generations of Hawaii.

INNOVATIVE APPROACHES SUPPORT CLEAN ENERGY GOALS

Carilyn O. Shon, Energy Program Administrator

Achieving Hawaii's goal of becoming carbon neutral by 2045 will be a multipronged effort using traditional strategies as well as new and innovative approaches to problem solving. We will need to expand our efforts in areas with untapped potential, such as the ground transportation sector, which accounts for more than a quarter of Hawaii's petroleum use. In addition, there is room for further gains in energy efficiency through the use of an innovative financing technique known as energy performance contracting (EPC).

In this edition of *The Current* we look at two initiatives underway at the Hawaii State Energy Office (HSEO) to support these objectives. The first featured story is about a plan drafted by HSEO to invest $8.125 million in clean transportation using Hawaii's share of a national settlement with Volkswagen. The planned investments in electric transit and school buses and electric charging infrastructure will help reduce petroleum use in ground transportation. The VW plan is one of several projects HSEO is pursuing on the clean transportation front.

The second featured story highlights Hawaii's success in using EPC to pay the upfront costs for deep energy efficiency retrofits to existing buildings. Because such projects can be expensive, creative financing tools such as EPC are key to unlocking energy savings. Hawaii's efforts in this area have been recognized by several national industry groups as well as the U.S. Department of Energy.

I also would like to recognize HSEO Energy Analyst Mark Want for his dedication and hard work that recently earned him the title of "State Employee of the Year." Mark is a vital contributor to HSEO's Energy Assurance Program, working to ensure that Hawaii's energy infrastructure is well-prepared to respond to and recover any infrequent but potentially catastrophic events, such as a hurricane. Mark was selected from among 19 nominees representing various state agencies, and honored in a ceremony at the Capitol presided over by Gov. David Ige.

FEATURED STAFF: PROMOTING RENEWABLE ENERGY DEPLOYMENT

Cheryl G. Scarton, Renewable Energy Branch

Dependency on fossil fuels for power generation and transportation is expensive, contributes to greenhouse gas emissions, and leaves Hawaii vulnerable in times of natural disasters. For these reasons Hawaii's Legislature has mandated that utilities generate electricity completely from renewable sources by 2045. The Renewable Energy Branch (REB) is working to spotlight opportunities to develop projects that equitably and affordably meet the population's energy requirements.

Cheryl analyzes qualitative, quantitative, and spatial data to characterize and visualize the state's energy demand, supply chain, and infrastructure. REB focuses on promoting renewable energy deployment in government operations. The tools we build, such as EnerGIS, Permitting Wizard, and the Renewable Energy Projects Directory as well as the research we distill are useful for public and private landowners interested in deploying renewable energy technologies. REB aims to provide information that guides stakeholders through early stage project baselining to push through permitting and siting requirements. This entails identifying community needs, land use, and context within each island's critical infrastructure. "I am honored to be a part of this office's mission and responsibility to this place and its protection during immediate times of disaster and for its perpetuity," Cheryl 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

2019 Green Hotel Forum

The 2019 Green Hotel Forum was held at The Kahala Hotel & Resort. The event, co-sponsored by the Hawaii Lodging & Tourism Association's Engineers Advisory Council and the Hawaii Green Business Program, brought together hotels, resorts, and other stakeholders to share their green initiatives including energy and water conservation, recycling, composting, pollution prevention, and community and cultural engagement, as well as programs to support energy retrofits and conservation.

Hawaii Joins New Task Force on Electricity Planning

Hawaii has been named one of 16 states to represent the National Association of Regulatory Utility Commissioners and the National Association of State Energy Officials on the joint task force. The two-year collaborative initiative is a forum for participating states to develop new approaches to better align distribution system and resource planning processes. The selected states will pioneer new tools and roadmaps to meet states' needs while applying insights from the task force to initiate action in their own states. HSEO's Administrator Carilyn Shon and Energy Systems and Planning Program Manager Chris Yunker have been appointed to this task force.

Electrify America Selects Honolulu for EV Charging Stations

Electrify America has selected Honolulu as one of 18 metropolitan areas to receive investment in electric vehicle DC fast chargers as part of the second phase of the organization's National Zero Emissions Vehicle (ZEV) Investment Plan. Electrify America's Cycle 2 infrastructure investments were selected for areas "where the need for electric vehicle charging stations and technology are greatest or are most likely to be used regularly." Cycle 2 is a 30-month investment period that begins July 2019 with an estimated budget of $300 million. HSEO submitted comments and data and facilitated stakeholder introductions with Electrify America to encourage their investment in Hawaii.

2019 Green Hotel Forum

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PLAN FOCUSES VW SETTLEMENT FUNDS ON ELECTRIC BUSES, EV CHARGING INFRASTRUCTURE

Replacing diesel transit and school buses with electric vehicle (EV) alternatives and expanding EV charging infrastructure are top priorities as the state moves ahead with plans to invest $8.125 million allocated to Hawaii as part of a national settlement with German automaker Volkswagen.

The funds will be invested in Hawaii over the next 10 years to promote the reduction of vehicle emissions under a Beneficiary Mitigation Plan drafted by HSEO. The funds represent Hawaii's share of an Environmental Mitigation Trust established by Volkswagen to settle allegations it cheated emissions tests and deceived customers.

HSEO, a division of the Department of Economic Development and Tourism (DBEDT), is the lead agency for purposes of the state's participation in the Trust. The plan focuses on locations in Hawaii that bear a disproportionate share of the air pollution burden while fully mitigating the excess nitrogen oxide (NOx) emissions through the replacement of older, high-emitting vehicles and equipment with low and zero emission advanced technology vehicles and equipment.

"Moving toward a cleaner transportation sector is important since it accounts for about half of the energy consumed in the state," said HSEO Administrator Carilyn Shon. "Efforts to reduce our petroleum use in transportation, combined with our push to decarbonize Hawaii's electricity sector will have a positive impact on both our environment and our economy," Shon said.

The plan details how the State of Hawaii will utilize the Volkswagen settlement funds, including investing in electric battery replacements for diesel transit and school buses and electric vehicle charging infrastructure for light-duty vehicles. In addition to mitigating the lifetime excess NOx emissions of the VW vehicles subject to the settlement, the plan will help accelerate the electrification of Hawaii's transportation sector, which is necessary to meet the state's clean energy goals.

"This mitigation plan targets market ready technologies with viable projects that can help transition Hawaii to a carbon neutral economy," said Chris Yunker, HSEO Energy Systems and Planning Branch manager. "The development of the plan included public outreach effort that took input from the community, private sector, and state and county partners."

HSEO's estimated allocation amounts are based on the availability of zero-emission technology, the impact on the transition toward the eventual elimination of imported fuel in ground transportation, and the feasibility and market interest in Hawaii.

The plan calls for the following allocation of funds in three categories to achieve the goals of the Trust:

- $4.15 million, or 51 percent of Trust funds, to projects that electrify Class 4-8 school buses, shuttle buses, or transit buses;
- $2.75 million, or 34 percent of Trust funds, to projects eligible under the federal Diesel Emission Reduction Act grant program; and
- $1.22 million, or 15 percent of Trust funds, to support projects that facilitate the deployment of light duty zero emission vehicle supply equipment.

The proposed project categories are in line with input from stakeholders, state and county agencies, and members of the public.

HSEO gathered public comments in February 2018 on a range of eligible mitigation actions outlined in the settlement between Volkswagen and the federal government. Commenters offered their perspectives on the eligible actions through a questionnaire posted on the HSEO website. The eligible actions, as outlined in Appendix D-2 of the settlement, focus on activities that support NOx emission reductions. A total of 149 questionnaire responses were received from Oahu, Maui, Hawaii Island, Kauai, and the mainland. Respondents were asked to list the top three categories of eligible mitigation actions Hawaii should consider for the VW trust funding. The highest-ranking category was buses (school, shuttle or transit), which was supported by 89 percent of respondents. The category of local freight trucks and port drayage trucks was supported by 66 percent of respondents, and the category of light duty zero emissions vehicle charging equipment was supported by 57 percent of respondents.

The Environmental Mitigation Trust is part of a larger Volkswagen settlement intended to mitigate the environmental damage caused by emissions from the non-compliant Volkswagen vehicles. In addition to the Trust, Volkswagen will pay billions of dollars in civil penalties and customer buyback and modification programs. Volkswagen also will invest $2 billion over the next 10 years in zero emission vehicle infrastructure and education projects across the United State through its Electrify America subsidiary. Electrify America selected Honolulu as one of 18 metropolitan areas to receive funding for EV fast chargers as part of the second phase of the organization's National Zero Emissions Vehicle Investment plan. HSEO submitted comments and data and facilitated stakeholder introductions with Electrify America to encourage their investment in Hawaii.

More information on Hawaii's involvement in the Volkswagen Settlement and Hawaii's mitigation plan can be found at: energy.hawaii.gov/vw .

Photo courtesy of State of Hawaii Department of Transportation

HAWAII'S PERFORMANCE CONTRACTING SUCCESS

Hawaii's award-winning energy performance contracting (EPC) program continues to garner national recognition.

On its website this month the American Council for an Energy-Efficient Economy (ACEEE) highlighted two Hawaii EPC projects for their use of "innovative financing models" that will achieve significant energy savings for the Hawaii Department of Transportation (HDOT) and the University of Hawaii Maui. EPC is a financing tool that allows government agencies to pay for their energy efficiency upgrades with the savings on their utility bills.

The deep retrofits to buildings financed through EPC will be critical for reducing energy use and greenhouse gas emissions in Hawaii and elsewhere over the next 30 years, according to the ACEEE, a nonprofit organization formed in 1980 to advance energy efficiency programs, technologies, investments and behaviors.

EPC uses the savings from upgrades such as digital controls for energy systems, and lighting, plumbing and air conditioning improvements to repay the cost of the equipment and its installation. HSEO has been providing technical assistance to state and country agencies entering into energy performance contracts since 1996.

ACEEE Executive Director Steven Nadel wrote that the Hawaii EPC projects, along with two others in Alabama and Indiana, "all involved integrated packages of measures that together reduced energy use by 32% to 45%."

The total contract amount for the HDOT project exceeded $309 million with the energy improvements designed to deliver more than $795 million in guaranteed savings, according to Johnson Controls the energy services company contracted by HDOT. It is the largest single-state EPC contract in the nation, encompassing energy-saving improvements made to airports, harbors and highways.

The UH Maui project will make the campus among the first in the nation to generate 100 percent of its energy from on-site solar PV systems coupled with battery storage. The project is part of a partnership with Johnson Controls and Pacific Current that will allow four UH community colleges to significantly reduce their fossil fuel consumption.

The ACEEE is the latest organization to recognize Hawaii's achievements in energy performance contracting.

The nonprofit Energy Services Coalition (ESC) last year presented Hawaii its "2018 Race to the Top" award for per capita investment in EPC. It was the seventh consecutive year that Hawaii led the nation in EPC per capita. Hawaii, with cumulative investment of $372.81 per capita in EPC, outpaced second place Washington State at $201.72 per capita. Hawaii also received a second "Race to the Top" award from the ESC in 2018 for having the most EPC investment per capita in 2017.

Additionally, Hawaii's accomplishments in energy efficiency were featured in a 2017 article on the U.S. Energy Department's Office of Energy Efficiency & Renewable Energy website. The article cited HSEO's efforts to:

- Promote energy performance contracting;
- Benchmark public buildings for energy usage; and
- Encourage energy savings through its Hawaii Green Business Program

DID YOU KNOW?

Honolulu ranks first in the nation for solar installation. In the report, Shining Cities 2019, by Environment America Research & Policy Center and Frontier Group, Honolulu is the leading solar city on a per-capita basis. The report highlights progress on solar and looks at principal cities in the largest metropolitan areas in the United State. View the **Shining Cities 2019** report.

ENLIGHTENING NEWS & UPDATES

Hawaii's Biki ranks as No. 6 most used bikeshare system in U.S.
(Honolulu Star-Advertiser, 5/17/19)

Hawaii advances energy efficiency measure
(Daily Energy Insider, 5/03/19)

Natural Environment: Saving an Essential Part of Hawaii
(Hawaii Business Magazine, 5/01/19)

Hawaii Moves Closer to Its Goal of Carbon Neutrality
(Forbes, 4/30/19)

Hawaii launches on-bill financing program to expand clean energy access
(Utility Dive, 4/16/19)

In the Fast Lane
(Hawaii Home + Remodeling, April 2019)

Hawaii, Calif. utilities team up to reach energy goals
(The Maui News, 3/28/19)

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