

ENERGY RESOURCES COORDINATOR'S REPORT ON THE STATUS AND PROGRESS OF CLEAN ENERGY INITIATIVES AND THE ENERGY SECURITY SPECIAL FUND

Prepared by the
Hawaii State Energy Office
Department of Business, Economic Development & Tourism



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This report fulfills the reporting requirements for:
HRS 196-4(11)
HRS 196-10.5
HRS 196-41
HRS 201-12.5
HRS 201-12.8

This annual report required by each of these statutes have
been combined into this single, comprehensive report.

ENERGY RESOURCES COORDINATOR'S STATEMENT



Major shifts in climate policy at the federal level have left many wondering what the future is for clean energy in the U.S.

Fortunately, a growing number of states – including Hawaii – are stepping up to fill the void of leadership on clean energy. Hawaii is a member of the U.S. Climate Alliance, a bipartisan coalition of 14 states and Puerto Rico committed to the goal of reducing greenhouse gas emissions consistent with the goals of the Paris Agreement. Governor David Ige has also signed two bills into law that take concrete steps to reduce greenhouse emissions statewide in alignment with the principles adopted in the Paris Agreement. In short, we are pushing forward with Hawaii's clean energy transformation, which is gaining momentum every day.

I'm pleased to report that Hawaii's renewable portfolio standard (RPS) – the share of utility electricity sales produced by renewable resources – stood at 26.6 percent at the end of 2016. And with a host of new renewable projects in the pipeline we are firmly on track to hit our next interim RPS target of 30 percent by 2020. Reaching 100 percent by 2045 is the ultimate goal, of course, but it will require hard work.

Hawaii is pursuing innovative solutions to increase the amount of renewable energy flowing into our electrical grids as high penetration of intermittent resources, such as wind and solar, pose technical challenges. We welcome these challenges because having to address them is attracting market leaders who see Hawaii as the forerunner for clean energy research and development and deployment. Projects like the recently concluded JUMPSmart Maui initiative are helping create new technology and business models for next-generation electrical grids that will have applications in other island states and power grids around the world.

To be sure, Hawaii's clean energy transformation is advancing our efforts to become energy self-sufficient and protect our environment. But it is also driving a new engine of smart economic growth that is generating good-paying jobs and attracting outside capital to our state. A recent report from the U.S. Department of Energy estimates that the energy efficiency and renewable energy sectors employ nearly 14,000 local residents in a range of professions. We are committed to pursuing policies that will decarbonize our energy sector and continue to generate jobs and business opportunities for all Hawaii residents.

Luis P. Salaveria
Director and Energy Resources Coordinator
Department of Business, Economic Development & Tourism

State of Hawaii – Legislative Directives

The Legislature recognized and directed energy planning and policies to ensure a clean energy future. There are three major legislative directives that guide the functions of the Energy Resources Coordinator (ERC):

- **HRS 196-1** (Energy Resources; findings and declaration of necessity).
- **HRS 201-12.8** (Department of Business, Economic Development, and Tourism; Energy Security Special Fund; uses).
- **HRS 226-18** (Hawaii State Planning Act; Objectives and policies for facility systems—energy).

I. **HRS 196-1 (Energy Resources; findings and declaration of necessity).**

In the following excerpts from HRS 196-1, the Legislature articulated a clear understanding and direction to the ERC.

- a. HRS 196-1(2) There is a real need for comprehensive strategic planning in the effort towards achieving full use of Hawaii's energy resources and the most effective allocation of energy resources throughout the state. Both short-range and long-range planning will permit the articulation of:
 - i. Broad policies, goals, and objectives;
 - ii. Criteria for measuring and evaluating accomplishments of objectives;
 - iii. Identification and implementation of programs that will carry out such objectives; and
 - iv. A determination of requirements necessary for the optimum development of Hawaii's energy resources.

Such planning efforts will identify present conditions and potential issues relating to energy resources, their exploration, development, production, and distribution. It will show the nature of the present condition and the rate of change, into the foreseeable future based on a projection of current trends.

- b. HRS 196-1(3) The State requires an in-depth understanding of the causes and effects of any transitional issues and trends related to changes in the State's energy resources, systems, and markets.
- c. HRS 196-1(5) There is an ongoing need in this State to coordinate the efforts of statewide industry and government energy interests; maintain the technical capability and adequate capacity to quantitatively and qualitatively evaluate, analyze, develop, and coordinate implementation of private and public sector energy planning efforts; recommend market-based policies to develop Hawaii's energy resources, systems, and markets; establish and coordinate programs to preserve and protect the State's energy security, maintain a robust energy emergency preparedness program, and effectuate the conservation of energy resources to provide for the equitable distribution thereof; and to formulate plans for the development and use of alternative energy sources.

II. **HRS 201-12.8 (Department of Business, Economic Development, and Tourism; Energy Security Special Fund; uses)**

Through HRS 201-12.8 the Legislature further entrusted funding to support planning to ensure a clean energy future. The Legislature's full awareness of Hawaii's high dependence on, and consequent vulnerability to, imported fossil fuels engendered legislative directives to look to Hawaii's abundant natural energy resources to secure resilient, reliable, environmentally responsible, and economic beneficial solutions.

- III. **HRS 226-18 (Hawaii State Planning Act; Objectives and policies for facility systems – energy). These concerns and directives also are reflected under HRS 226-18 which calls for “due consideration” to the following:**
- a. Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;
 - b. Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation;
 - c. Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;
 - d. Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and
 - e. Utility models that make the social and financial interests of Hawaii's utility customers a priority.

Hawaii Clean Energy Initiative (HCEI) HRS 196-10.5 provides further direction on the delegated duties of the ERC to the Hawaii State Energy Office (HSEO)

(a) There is established within the Department of Business, Economic Development, and Tourism, a Hawaii Clean Energy Initiative program to manage the State's transition to a clean energy economy. The clean energy program shall design, implement, and administer activities that include:

1. Strategic partnerships for the research, development, testing, deployment, and permitting of clean and renewable technologies;
2. Engineering and economic evaluations of Hawaii's potential for near-term project opportunities for the State's renewable energy resources;
3. Electric grid reliability and security projects that will enable the integration of a substantial increase of electricity from renewable-energy resources;
4. A statewide clean energy public education and outreach plan to be developed in coordination with Hawaii's institutions of public education;
5. Promotion of Hawaii's clean and renewable resources to potential partners and investors;
6. A plan, to be implemented from 2011 to 2030, to transition the State to a clean energy economy; and
7. A plan, to be implemented from 2011 to 2030, to assist each county in transitioning to a clean energy economy.

(b) Prior to the initiation of any activities authorized under subsection (a), the Department of Business, Economic Development, and Tourism shall develop a plan of action with the intent of promoting effective prioritization and focusing of efforts consistent with the State's energy programs and objectives.

(c) The Department of Business, Economic Development, and Tourism shall submit a report to the legislature no later than twenty days prior to the convening of each regular session on the status and progress of new and existing clean energy initiatives. The report also shall include:

- i. The spending plan of the Hawaii clean energy initiative program;
- ii. All expenditures of energy security special fund moneys; and
- iii. The targeted markets of the expenditures, including reasons for selecting those markets, the persons to be served, specific objectives of the program, and program expenditures, including measurable outcomes. [L 2010, c 73, §8]

Hawaii has embarked on an ambitious journey to transform its energy system from one based on imported fossil fuels to a model driven by the use of clean, indigenous resources. By doing so Hawaii is not only taking prudent and necessary steps to strengthen its energy security and protect its natural environment, it is fueling the creation of a world-class clean energy sector that has the potential to drive long-term economic prosperity in the state.

As the Energy Resources Coordinator (ERC), the director of the Department of Business, Economic Development, and Tourism (DBEDT) is responsible for planning, managing and monitoring Hawaii's energy program as mandated by HRS 196. These responsibilities have been delegated to HSEO as it works to implement the state's clean energy vision. HSEO is supported in its efforts by a bold policy agenda made possible through the cooperation of a coalition of energy stakeholders under the umbrella of the landmark 2008 Hawaii Clean Energy Initiative.

Hawaii has set the bar high with a goal of achieving 100 percent renewable energy in the electricity sector by 2045. Hawaii is also aggressively pursuing energy efficiency, which complements its renewable energy goals. Coordination of the two programs is critical because it is generally more cost effective and environmentally beneficial to first reduce electricity consumption before adding more generating capacity. Both of these efforts, along with decarbonizing the transportation sector, are key to transforming Hawaii's energy system.

This report provides an update on the status of various HSEO-supported programs addressing these issues and facilitating Hawaii's clean energy transformation.

Energy Efficiency

HSEO is involved in a host of energy efficiency programs that are making a significant contribution towards meeting the state's energy efficiency portfolio standards (EEPS). The EEPS mandates a 4,300-gigawatt-hour reduction in electricity use by 2030 through efficiency and conservation measures. Hawaii surpassed its 2015 interim EEPS target thanks in part to the robust issuance of energy performance contracts (EPC). With technical assistance from HSEO staff and contractors, Hawaii led the nation in 2017 for the sixth consecutive year in the per capita value of energy savings performance contracts awarded by state and local governments. HSEO was also a key player in the Hawaii Building Code Council's adoption of the updated International Energy Conservation Code that significantly advance Hawaii's clean energy goals.

Renewable Energy

Hawaii's renewable portfolio standards (RPS), which represents renewable energy generation as a percentage of utility electricity sales, increased to 26.6 percent at the end of 2016 from 9.5 percent in 2009. During that time, Hawaii's utilities have added more than 800 megawatts of renewable generation to their power grids from a variety of resources, including rooftop and utility-scale solar, wind, biomass and geothermal. HSEO, through its online Developer & Investor Center and Self-Help Suite, assists renewable energy companies developing renewable energy projects that will help the state achieve its renewable energy targets. HSEO also provides policy guidance to Governor's Office and the Legislature, technical assistance to other government agencies/offices and industry and technical studies/reports, and has been involved in numerous critical regulatory proceedings in support of advancing RPS.

Energy Planning

Planning the transition to a clean energy economy in Hawaii will require the correct staging, phasing and sequencing of investments to ensure the clean energy transformation is carried out in the most cost effective way possible. Such planning includes activities that are both direct, those that are related to energy systems such as the grid and transportation fueling infrastructure, and indirect, those that are related to supporting innovation and the business community. To help inform the planning process, HSEO has undertaken a study to evaluate utility ownership and regulatory models. Among other things, the study will look at the long-term costs and benefits of a variety of utility ownership and regulatory models and the steps that would be required to transition to these models in each county.

Transportation

HSEO has taken a leadership role in advancing the adoption of clean transportation across Hawaii, including zero emission vehicles and associated charging infrastructure that are contributing to reductions of petroleum consumption and emissions. Clean transportation initiatives supported by HSEO include the nomination of electric drive corridors on Oahu and Maui County and the development of a plan to expend \$8.125 million Hawaii is due to receive as part of the Volkswagen Settlement's Environmental Mitigation Trust. HSEO additionally is coordinating with the U.S. Navy on clean transportation solutions for Hawaii, and supports the Hawaii Department of Transportation's Sustainable Transportation Forum.

Education and Outreach

HSEO conducts public education and outreach through a variety of channels in order to build awareness of its core objectives and key platforms that play a critical role in helping the state achieve its energy goals. Among these initiatives are the Hawaii-Okinawa Memorandum of Understanding, the hosting of delegations from various foreign countries, participation in a goodwill project in Armenia, a partnership with the U.S. Navy on energy issues, the VERGE Hawaii: Asia Pacific Clean Energy Summit, and maintenance of the HSEO and HCEI websites. In addition, HSEO issues press releases and distributes publications and collateral material to raise awareness and communicate progress of its clean energy efforts.

Hawaii's state energy policy is geared toward maximizing cost-effective investments and fostering high impact programs. Hawaii has set an overall goal for energy efficiency to reduce electricity consumption by 4,300 gigawatt-hours by 2030. To achieve this goal HSEO works with state and county agencies, energy stakeholders, and the local community to encourage and facilitate energy efficiency and conservation. The program target audience also includes emerging clean energy producers, businesses, and organizations interested in energy efficiency and key energy stakeholders and policy makers.

Conserving Energy Resources

Pursuant to HRS 196-41, HRS 196-4(3), and HRS-196-4(4), the ERC shall develop programs to maximize cost-effective conservation measures by state government agencies, assist public and private agencies in implementing energy conservation and efficiency programs, and formulate and recommend specific proposals for conserving energy resources.

Energy Performance Contracting

Energy Performance Contracting (EPC) allows government agencies to pay for energy efficiency upgrades with the savings on their utility bills. HSEO provides technical assistance to state and country agencies entering into energy performance contracts and projects that include office buildings, community colleges, airports, highways, and prisons. To support these efforts HSEO developed an *Energy Performance Contracting (EPC) Guide* for state and county agencies containing model templates and best practices. Through a cooperative agreement with the U. S. Department of Energy (USDOE), HSEO completed a Showcase publication featuring the State Department of Transportation energy performance contracting project for twelve state airports which was the nation's single largest state energy performance contract at \$158 million when it was signed. A Gap Analysis, Best Practices Analysis, and Financing Mechanisms Options Report were also completed.

As a result of HSEO's efforts to support EPC:

- Hawaii surpassed the half-billion-dollar mark for investment in EPC in 2017, making it only one of seven states in the nation to achieve this milestone.
- The \$507.1 million of energy performance contracts put in place since 1996 will save the state an estimated \$1.2 billion in electricity costs over the life of the contracts.
- Since 1996 energy performance contracts signed by state and local government agencies include 295 buildings and facilities covering more than 112 million square feet.
- The savings from the energy performance contracts are equivalent to powering 388,210 homes for one year.
- Hawaii received its 6th consecutive *Race to the Top* award from the Energy Services Coalition for the highest per capita investment in EPC at \$372.81.
- Hawaii also received its second consecutive *Energy Stewardship Champion* award from the Energy Services Coalition for achieving infrastructure modernization, environmental stewardship, and economic development through Energy Performance Contracting.
- The State Department of Transportation, Airports Division, is recognized as the single largest state contract in the nation for performance contracting. With change orders and the addition of Phase II to the project, the contract has increased to over \$215 million. Over 20 years, the energy saved could power 144,998 homes. Jobs generated/supported each year was 867 for the first two years

(construction/installation period); an average of 63 jobs generated/supported each year during the next 18 years of the performance period.

STATE AND COUNTY ENERGY PERFORMANCE CONTRACTS

Agency	Year(s)	Contract Amount (\$)	Estimated Savings Over Life of Contract (\$)
UH-Hilo	1996-2012	\$6,402,695	\$14,630,066
County of Hawaii	1997-2026	\$2,215,546	\$8,157,880
County of Kauai	1998-2012	\$525,965	\$1,205,990
City and County of Honolulu	2001-2025	\$11,900,205	\$36,066,761
Hawaii Health Systems Corporation	2002-2022	\$21,936,997	\$55,766,364
Judiciary	2003-2012	\$1,474,406	\$9,785,036
Department of Accounting and General Services Phase I	2009-2029	\$36,873,266	\$72,580,767
Department of Public Safety	2010-2030	\$25,511,264	\$57,211,112
University of Hawaii Community Colleges	2012-2032	\$34,207,392	\$37,000,000
City and County of Honolulu, Kailua Wastewater Treatment Plant	2013-2033	\$6,054,178	\$13,693,910
Department of Accounting and General Services Phase II	2013-2033	\$17,400,000	\$28,000,000
Department of Transportation (Airports/Highways/Harbors)	2013-2034	\$309,506,592	\$795,560,746
City and County of Honolulu, Board of Water Supply	2016-2036	\$33,125,398	\$56,846,668
	Total	\$507,133,904	\$1,186,505,300

Building Better Buildings

On September 10, 2013, HSEO became a partner in the USDOE's Better Buildings Initiative, a national leadership initiative calling on state and local officials to make substantial commitments to improve the energy efficiency of their buildings and plants, save money, and increase competitiveness. HSEO joined the Better Buildings Performance Contracting Accelerator to significantly expand the use of performance contracting by state and local governments and to catalyze public sector energy efficiency investments of \$2 billion from January 2013 to December 2016. The partnership committed the state to executing \$300 million in performance contracting within the three-year period.

As a result of HSEO's efforts:

- HSEO, working with agencies, surpassed its goal by signing \$345.9 million in performance contracts.
- USDOE recognized Hawaii as the state that met the highest goal under the Accelerator Program.

- The EPC projects cover more than 24.4 million square feet of building space and include installation of more than 136,000 lighting retrofits, 13 megawatts of photovoltaic power, and other energy efficiency improvements.
- Energy savings from the projects are estimated at \$866.1 million over the life of the contracts.
- The energy savings are equivalent to powering 376,027 homes over the life of the contracts.

Hawaii Green Business Program

The Hawaii Green Business Program (HGBP) assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. HGBP is a partnership between Hawaii's DBEDT, Department of Health, Chamber of Commerce of Hawaii, and the Board of Water Supply. The program recognizes businesses that go beyond compliance and are dedicated to creating a sustainable Hawaii. From 2009-2017, over 100 business and government entities have benefited from the program, including sectors such as hospitality, commercial office, retail, restaurant, food services, grocery, venue, and green events.

The participating businesses overall savings amounts to:

- 18.9 million kWh of energy (equivalent to powering 2,843 homes for one year in Hawaii).
- 136.8 million gallons of water.
- \$5.7 million in energy costs.

In 2016 the HGBP team also worked with the Hawaii Lodging and Tourism Association, the International Union for Conservation of Nature's (IUCN) Green Team and the Sustainability Working Group in Hawaii, to ensure that the event's lodging partners were properties participating in the HGBP or the IUCN's Green Hotels Initiative. A total of 16 hotels achieved the IUCN's Green Hotels Initiative level one, two or three designation. HSEO used interns for the program for an estimated 1,440 hours, or approximately one full-time employee during the project period.

Hawaii Energy Building Code

Pursuant to HRS 107-22(4), HSEO shall be a voting member and an active participant on the State Building Code Council.

HSEO attended national hearings on the International Energy Conservation Code (IECC), testified to maximize increased energy efficiency, which resulted in adding the Tropical climate zone to the national IECC allowing specification of design features unique to warm-weather locales. HSEO also chairs the Council's Investigative committee for the IECC and proposes amendments to the national IECC which ensures additional energy savings. In 2017 HSEO was instrumental in advocating for the adoption of the 2015 IECC Chapter 3-181.1 State Energy Conservation Code Hawaii Administrative Rules which Gov. David Ige signed into law on March 20, 2017. HSEO is presently working with the counties to have their county councils adopt the 2015 IECC with Hawaii amendments and will testify in support of the 2015 IECC when the county councils hold public hearings on their adoption.

As a result of HSEO's efforts:

- The estimated net savings from the 2015 IECC with Hawaii amendments is 12,962 MWh in 2016, 1,083,590 MWh in 2026 (year 10), 1,991,059 MWh in 2030 and 4,702,738 MWh in 2036 (year 20).

- When fully adopted by the counties, the cumulative energy savings from the updated building codes could power 707,391 homes in 2036 and would be the equivalent of taking three of Hawaiian Electric Companies’ (HECO) largest power generating units – AES, Kalaeloa Partners, and Kahe 6 – off-line for an entire year in 2036.

Solar Water Heater Variances

Pursuant to HRS 196-6.5, the ERC shall issue and publicize hot water heater variances and collect fees to cover the costs of administering variances under this section.

HSEO posts information on solar water heater variances on its website: <http://energy.hawaii.gov/resources/solar-water-heater-variance>. Additionally Gov. Ige has approved draft Administrative Rules to charge a fee to process variance requests online. A public hearing on a new administrative rule was conducted on November 1, 2017. Prior notification of the public hearing was publicized in the *Honolulu Star-Advertiser*, *Hawaii Tribune-Herald*, *West Hawaii Today*, *The Maui News*, and *The Garden Island*, on September 29, 2017. HSEO is currently reviewing the testimony.

From January 2010 – September 2017, HSEO processed 5,303 solar water heater variance requests. The following table shows the distribution of the solar water heater variance requests by island and option:

January 2010 – September 2017

Island	Requests	#1 Impractical	#2 PV System	#3 On-demand Gas	Denied	%
HAWAII	3,500	1	115	3,377	7	66.0%
KAUAI	723	7	18	695	3	13.6%
MAUI	404	6	50	342	6	7.6%
MOLOKAI	30	0	1	29	0	0.6%
OAHU	646	7	110	526	3	12.2%
TOTALS:	5,303	21	294	4,969	19	100.0%
		2.2%	6.3%	90.9%	0.7%	100%

ENERGY STAR®

Pursuant to HRS 196-30, the ERC shall provide training to affected departments on the ENERGY STAR portfolio management or equivalent tool and establish retro-commissioning guidelines.

Through the USDOE federally funded benchmarking project, HSEO provided agencies with a better understanding of benchmarking and ENERGY STAR Portfolio Manager (ESPM) and how it can contribute to a comprehensive Building Management. HSEO established seventeen ESPM accounts for agencies and updated the information for agencies with ESPM accounts. In addition to ENERGY STAR training, HSEO has provided technical training for energy managers for Certified Energy Manager and Building Operator Certification training. HSEO received a \$350,000 award and cooperative agreement with the USDOE to implement a project to strengthen whole building retrofit energy efficiency programs, identify best practices, develop a database of over 500 state facilities and explore financing options for energy savings. The project found potential for all state agencies to save more than 56 million kWh hours annually, the equivalent of saving more than \$25 million using current electricity rates.

As a result of HSEO efforts:

- In two years Hawaii benchmarked 416 state facilities, which included over 2,600 buildings covering more than 29 million square feet.
- Completed certification of 83 Schools for ENERGY STAR label.
- Conducted 26 training sessions for 332 public and private sector employees on the benefits of benchmarking and ENERGY STAR Portfolio Manager.

Building Energy Efficiency Revolving Loan Fund

Pursuant to HRS 201-20, DBEDT shall administer the Building Energy Efficiency Revolving Loan Fund.

The GreenSun Hawaii Loan Loss Reserve program was established with American Recovery and Reinvestment Act of 2009 funds to extend loan availability to property owners for energy efficiency and renewable energy retrofits. It provided local financial institutions with access to a USDOE-funded loan loss reserve that could cover up to 100 percent of actual losses. The public-private partnership had the ability to leverage \$4.25 million in federal funds into \$85 million in energy efficiency and renewable energy equipment loans statewide.

GreenSun Hawaii operated for three successful years, issuing 203 loans totaling over \$4.8 million. The program is expected to:

- Save 29.9 million kWh of electricity over the life of the installations.
- Program participants will save in excess of \$13.2 million over the life of the installations.
- Reduce CO₂ by 2,247,000 lbs. annually (44.9 million lbs. over the life of the installations).
- Energy savings over the life of the equipment is equivalent to powering 4,498 households in one year.

Lead by Example

Pursuant to Act 160 (SLH 2006), Section 168.5, establishes mandates to incorporate energy efficiency and conservation in government facilities, fleets and personnel practices.

Hawaii state agencies' electricity consumption through 2017 has declined 9 percent from 2005 (the baseline year), but due to the rising cost for electricity, costs increased 42.8 percent during that same time period. However, electricity costs would have been much higher if electricity consumption did not decrease.

Additionally, HSEO, in partnership with the Research and Economic Analysis Division, published an annual Lead by Example report until 2015. Due to staffing limitations, HSEO no longer provides this special report, but electricity use by state agencies will continue to be tracked and reported.

Hawaii Clean Energy Initiative Program - Energy Efficiency Charrettes

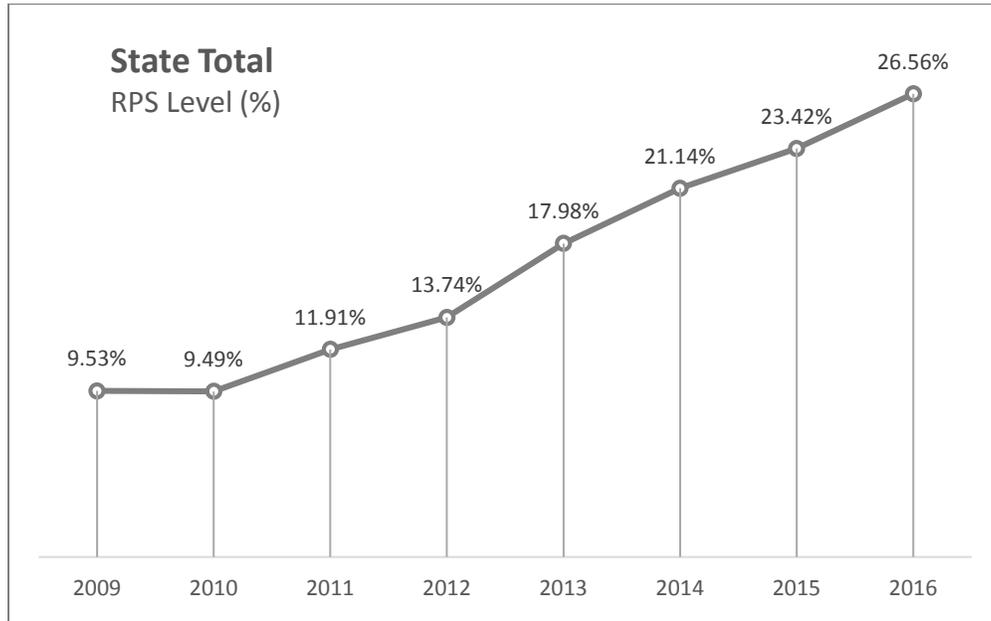
Pursuant to HRS 196-10.5, there is established within DBEDT a Hawaii Clean Energy Initiative program to manage the state's transition to a clean energy economy.

HCEI and HSEO hosted a series of Energy Efficiency Charrettes to engage stakeholders to baseline status reports on state efforts in energy efficiency and to communicate interests, priorities, new practices, new perspectives, and new needs to meet the state's energy efficiency goals.

The first charrette was held on May 8 and 9, 2017. The sessions focused on clarifying current practices and support of energy efficiency in Hawaii, and discussed ways in which Hawaii can benefit from the collective efforts of interested stakeholders. In attendance were 66 people representing 40 organizations.

The second charrette was held on September 26 and 27, 2017. This charrette gave the community an opportunity to make specific commitments and plans, building on the discussions from the previous charrette, to more fully realize the potential of energy efficiency. Over 40 people representing 26 organizations attended the charrette.

When Gov. Ige signed Act 97 into law in 2015, Hawaii became the first state in the nation to enact a mandatory Renewable Portfolio Standards (RPS) requirement to generate 100 percent of electricity sales from renewable sources by 2045. Act 97 also set interim RPS targets for 2020 (30 percent RPS), 2030 (40 percent RPS), and 2040 (70 percent RPS). Hawaii is exceeding its RPS targets. As of May 2017 the RPS stood at 26.6 percent, more than 11 percent ahead of the interim statutory 2015 target of 15 percent.



HSEO plans and supports the deployment of investments to meet Hawaii’s RPS targets in the most cost effective way possible. HSEO is tasked by the Legislature under HRS 196-41 to “develop a program to maximize the use of renewable energy and cost-effective conservation measures by state government agencies.” To achieve this goal HSEO works with state and county agencies, energy stakeholders and the local community to encourage and facilitate appropriate renewable energy development and conservation. The program target audience also includes emerging renewable energy producers, businesses and organizations interested in renewable energy, and key energy stakeholders and policy makers.

Renewable Energy Permitting and Siting Resources

Pursuant to HRS 196-4(4), HRS 196-4(5), HRS 196-4(6), HRS 196-4(7), HRS 196-4(12), HRS 196-4(13), HRS 196-41, and HRS 201-12.5, the ERC shall encourage the exploration and development of indigenous energy resources, educate the public of Hawaii’s energy situation, facilitate the permitting of renewable energy projects, create a permit repository center, identify geographic areas with renewable energy resource potential, assist public agencies in the development of indigenous energy resources, and coordinate with federal energy programs and political subdivisions of the state (the counties).

Renewable Energy Projects Directory

<http://energy.ehawaii.gov/epd/public/energy-projects-map.html>

The Directory is the only interactive electronic map managed by the state that identifies all large-scale renewable energy projects in Hawaii and distinguishes them by development status: either existing/operational or

proposed/under development. The Directory provides value by demonstrating Hawaii's progress towards 100 percent renewable energy; showcasing successes and innovations in renewable energy to attract more Hawaii investments; informing regulatory agency, permitting, and policy decisions; and informing impacted communities and stakeholders of proposed and existing projects. The Directory has been live since its initial launch in 2012 and is updated periodically by HSEO as new project information becomes available. As of October 2017, the Directory featured 99 projects with 67 existing projects and 32 projects proposed or under development. Directory website users viewed 19,342 pages from June 2016 to June 2017.

Developer & Investor Center and Self-Help Suite

(<http://energy.hawaii.gov/developer-investor>)

The interactive Developer & Investor Center and Self-Help Suite provide comprehensive information on the siting, permitting, and development of renewable energy facilities in Hawaii, which can be used by project proponents, regulatory agencies, interested communities, and other stakeholders. The website offers technical assistance, permitting tools, and permitting assistance through its Project Permitting Assistance and Resources website, which also provides a Guidebook on permitting renewable energy projects in Hawaii and individual briefs on approximately 200 county, state, and federal permit processes. The Center and Suite support informed project siting and design, which can lessen project impacts to the environment and surrounding communities. Smartly planned and sited projects can also reduce project permitting and development soft costs and translate into lower electricity costs to the ratepayer. Initially launched in 2012, HSEO regularly updates these resources as requirements, policies, and procedures change.

Renewable EnerGIS

(<http://energy.hawaii.gov/resources/renewable-energis-map>)

EnerGIS provides geographic information system (GIS) data related to the renewable energy resource potential and siting of renewable energy projects at specific sites selected by the user. Developed in partnership with the Hawaii Office of Planning, EnerGIS pulls data from the Hawaii Statewide GIS Program and supports efficient and low-cost initial project due diligence, which enables more appropriate renewable energy project siting and informed project planning and permitting; thereby decreasing project development timelines, costs, and impacts. By identifying site-specific attributes, EnerGIS informs regulatory agencies and other stakeholders of potential project impacts and permits. In fiscal year 2017, HSEO launched a new beta EnerGIS website and anticipates launching a new upgraded EnerGIS website in December 2017. EnerGIS website users viewed 5,165 pages from June 2016 to June 2017.

Renewable Energy Permitting Wizard

(<http://wizard.hawaii-clean-energy-initiative.org/>)

The Wizard helps all stakeholders (developers, regulatory agencies, landowners, communities, etc.) understand the county, state, and federal permits that may be required for individual renewable energy projects in Hawaii, including procedures and prerequisites that dictate the sequence of approvals. By identifying approximately 200 permits, the Wizard supports informed project planning, which reduces project development timelines, costs, and

impacts. The Wizard supports community engagement by identifying opportunities for public participation as required by individual permit processes. Initially launched in 2011 and periodically updated by HSEO, the Wizard is now available in an open source software environment so it can be replicated by other jurisdictions. Wizard website users viewed 845 pages from June 2016 to June 2017.

e-Permitting Portal (Hawaii Department of Health)

(<https://eha-cloud.doh.hawaii.gov/epermit/>)

The e-Permitting Portal provides online access to environmental permits administered by the Hawaii Department of Health's (DOH) Environmental Health Administration, including land, air, and water permits required for renewable energy and other projects. e-Permitting provides access to environmental permit applications, related instructions and information, and allows for online application compilation and submission, online application fee payment and online submission tracking. HSEO provided funding support for e-Permitting, which was initially launched in 2012/2013 and is currently managed by DOH. A total of 2,016 permit applications and revisions were submitted and processed through e-Permitting from June 2016 to June 2017, totaling \$233,700 in permit fees to DOH.

Electronic Permitting and Asset Management (Hawaii Department of Land and Natural Resources)

(<https://inforps-dp.hawaii.gov/DLNRInvPermitting/#/login>)

In partnership with the Department of Land and Natural Resources (DLNR), HSEO provided funding support for the development of new, off-the-shelf electronic permitting and asset management systems for three DLNR programs involved in the permitting of renewable energy projects and the management of Hawaii's renewable energy resources: Dams Safety, Geothermal, and Native Invertebrates. These tools are designed to enable DLNR to electronically receive, process, and catalogue permits for these programs, as well as electronically inventory and manage assets under their supervision. Initially launched in 2016, DLNR currently manages these resources. Since its launch 32 permits have been processed, 132 assets (dams) have been entered into the system, and \$576,936 in permit fees has been processed from June 2016 to June 2017.

Hawaii Clean Energy Programmatic Environmental Impact Statement (PEIS)

(<http://energy.hawaii.gov/testbeds-initiatives/hawaii-clean-energy-peis>)

Published in 2015, the PEIS assesses common environmental impacts and best management practices associated with 31 clean energy technologies that may be pursued in Hawaii. The PEIS was developed by the USDOE in partnership with the State of Hawaii through HSEO as the lead coordinating agency. Identifying potential project impacts early in the scoping and development stage saves time and cost by identifying the applicable permitting processes and available mitigation measures, and indicating when a project may be inappropriate to due inordinate environmental impacts. Any renewable energy project that requires federal or state environmental review can benefit from the PEIS. In support of the PEIS, HSEO participated in 16 community meetings on six islands held to draft and scope the PEIS. The PEIS website users viewed 970 pages from June 2016 to June 2017. There are 24 public libraries throughout Hawaii with a hardcopy of the PEIS.

Geothermal and Groundwater Resource Assessment

(https://energy.hawaii.gov/wp-content/uploads/2011/10/DHHLGeophysicalSurveysRpt_3.29.17.pdf)

Under this Assessment, the University of Hawaii / Hawaii Institute of Geophysics and Planetology, Center for the Study of Active Volcanoes, conducted non-invasive field data collection and desktop analysis of geothermal and groundwater indicators on lands owned by the Department of Hawaiian Home Lands (DHHL) in the Humuula Saddle area of Hawaii Island (Mauna Kea East Flank). Funded by HSEO, this Assessment found inferences of current or prior thermal activity at shallow depths suggestive of up to three geothermal prospects in the studied area. The Assessment also suggests potential for high elevation groundwater resources in the region that could, if carefully developed, provide a viable water supply for DHHL lessees. Such findings can help inform land management decisions and energy systems planning for Hawaii Island. Completed and published in 2016 (Final Report: Magnetotelluric and AudioMagnetotelluric Surveys on DHHL Lands Mauna Kea East Flank, 2016). This Assessment also discusses additional exploration work that could be pursued to better characterize the prospective geothermal resource.

Kalaeloa Energy System Redevelopment

Pursuant to HRS 196-4(5), HRS 196-4(14), HRS 196-4(16), and HRS 196-41, the ERC shall coordinate the state's energy programs with those of the federal government, assist public and private agencies in identifying utility transmission projects to facilitate renewable energy, identify transmission projects that are critical to the development of renewable energy resources, and work with federal agencies to develop research and demonstration funding, and technical assistance to support renewable portfolio standards.

HSEO received support from USDOE's Office of Energy Efficiency and Renewable Energy which funded Sandia National Laboratories (Sandia) to embark in a collaboration with the Hawaii Community Development Authority (HCDA) and the U.S. Navy on a project to 1) assess the current functionality of the energy infrastructure at the Kalaeloa District, and 2) evaluate options to use both existing and new distributed and renewable energy generation and storage resources within an advanced microgrid framework to efficiently and cost effectively enhance energy security, energy reliability, and assure critical system functions and performance at all times, including during short and extended electric power disruptions. This initiative resulted in a final report titled Kalaeloa Energy System Redevelopment Options Including Advanced Microgrids which provides technical solutions and related costs for redeveloping the Kalaeloa energy infrastructure.

HSEO assisted with stakeholder engagement, review and input on technical analysis and report development. HSEO conducted thirteen stakeholder meetings with over two hundred participants including Industry Day on April 11, 2017, to brief industry representatives on Kalaeloa's energy infrastructure current state, Sandia's report, and potential next steps. The Kalaeloa project was featured at Sandia/Electric Power Research Institute's Secure and Resilient Microgrid Design Summit co-located at the Joint 2017 Asia Pacific Resilience Innovation Summit & Expo on July 20, 2017.

Renewable Fuels Production Tax Credit

Pursuant to Act 202 (SLH 2016) to establish a \$3 million/year renewable fuels production tax credit (RFPTC), HSEO has the following duties and responsibilities associated with the RFPTC: (1) Verify and certification duties

associated with the RFPTC in 2017; (2) creation of forms to administer the RFPTC (i.e., Notice of Intent/Notice to Start Production and Credit Certificate forms); (3) administer the RFPTC \$3 million/year aggregate cap limit; (4) collect annual data related to the RFPTC (i.e., number of BTUs produced and sold, types of fuels produced, number of facility employees and state of residency and projections for next year's BTU production); and, (5) create and submit written reports to the governor and legislature. DBEDT expects to initiate implementation of its verification and certification duties and responsibilities in the first quarter of 2018.

Regulatory Intervention

Pursuant to HRS 196-4(2) and HRS 196-4(17), the ERC shall conduct analysis of existing and proposed energy resource programs, evaluate the analysis conducted by government agencies and other organizations and recommend programs that represent the most effective allocation of resources for the development of energy resources and develop proposals for, and assess the effectiveness of policy and regulatory decisions.

Community-Based Renewable Energy (CBRE)

HRS 269-27.4 established a CBRE program to make the benefits of renewable energy generation more accessible to a greater number of Hawaii residents. HSEO participated in the Public Utilities Commission (PUC) regulatory proceedings for CBRE and provided relevant analysis and comments, helping to ensure that the state's energy directives and interest are appropriately considered in the PUC's decision making process towards CBRE program implementation. HSEO participation included five filings to the PUC, seven CBRE hearings and technical conferences and nineteen meetings to facilitate collaboration with key stakeholders and other related meetings associated with HSEO.

Distributed Energy Resources (DER) Proceeding – Technical

DBEDT submitted ten filings to the PUC on the DER proceeding Technical Track including its Final Statement of Position, as had been previously ordered by the PUC of all Parties to this proceeding, in which it provided the PUC with several key recommendations, including:

- Support for revisions to Tariff Rule 14H Advanced Inverter functions.
- Recommendations on potential improvements to HECO Companies circuit and system level hosting capacity to allow for the greater deployment of distributed energy resources, such as rooftop PV.
- Specific recommendations and considerations pertaining to HECO Companies and Kauai Island Utility Cooperative's (KIUC) Smart Export Program related to program size, export compensation rate, time of use peak adjustment, KIUC specific curtailment adjustment, treatment of centralized control for DER systems, and data collection.
- Support for several specific modifications to the Customer Self Supply tariff and interconnection requirements.

Energy planning for HSEO takes a holistic perspective to achieve the statutory direction of the Hawaii Clean Energy Initiative (HRS 196-10.5) of managing the state’s transition to a clean energy economy. To achieve this objective planning activities include developing and maintaining “...a comprehensive and systematic quantitative and qualitative capacity to analyze the status of energy resources, systems, and markets,... and to recommend, develop proposals for, and assess the effectiveness of policy and regulatory decisions, and conduct energy emergency planning;” (HRS 196-4(17)). HSEO utilizes this capacity to “Conduct systematic analysis of existing and proposed energy resource programs, evaluate the analysis conducted by government agencies and other organizations and recommend programs that represent the most effective allocation of resources for the development of energy resources;” (HRS 196-4(2)). Energy planning requires addressing the interdependencies across energy sectors such as electricity¹ and transportation² integrated with issues such as affordability, environmental sustainability, energy assurance and resiliency. Planning the transition to a clean energy economy includes activities that are both direct, related to the energy systems such as the grid and transportation fuels infrastructure, and indirect, relating to supporting innovation and the business community. To achieve the transition to a clean energy economy HSEO works with state and county agencies, energy stakeholders and the local community to encourage and facilitate clean energy economy. The program target audience also includes emerging clean energy producers, businesses and organizations interested in energy efficiency and key energy stakeholders and policy makers.

Utility Business Model Analysis

Pursuant to HRS 196-4(11) the ERC shall prepare and submit reports as may be requested to the governor and to the legislature and Act 124 (SLH 2016) which directs HSEO to study and evaluate utility ownership and regulatory models and prepare a report to be submitted to the legislature.

The goal of the utility business model study is to evaluate utility ownership and regulatory models in Hawaii by county and the ability of each model to: (1) achieve state energy goals; (2) maximize consumer cost savings; (3) enable a competitive distribution system in which independent agents can trade and combine evolving services to meet customer needs; and, (4) eliminate or reduce conflicts of interest in energy resource planning delivery, and regulation. The study will aid in understanding: (1) the long term operational and financial costs and benefits of electric utility ownership and regulatory models to serve each county of the state; (2) the process to be followed to form such ownership and regulatory models and; (3) if establishing such models would create synergies that are not currently available, particularly in the areas of: (a) increasing local control over energy sources serving each county; (b) the ability to diversify energy resources; (c) economic development; (d) reducing greenhouse gas emissions; (e) increasing system reliability and power quality; (f) lowering costs to all consumers. Through a competitive sealed proposals procurement, the HSEO contracted London Economics International, LLC to perform the study to evaluate utility and regulatory models for Hawaii. The study will engage a wide range of stakeholders and perspectives across all islands, providing multiple opportunities for input and participation. The final report will be used to provide an unbiased assessment that will inform positions and future decisions on utility business models by the governor, legislature, and public utilities commission and stakeholders. The estimated contract completion date is January 2019.

¹ 100 percent RPS Statute

² Act 38 HRS ... “planning for the ultimate elimination of imported fuels for electric generation and ground transportation”.

Energy Planning Quantitative and Qualitative Capacity

Pursuant to HRS 196-4(17), the ERC shall develop and maintain a comprehensive and systematic quantitative and qualitative capacity to analyze the status of energy resources, systems, and markets, both in-state and those to which Hawaii is directly tied, particularly in relation to the state's economy, and to recommend, develop proposals for, and assess the effectiveness of policy and regulatory decisions, and conduct energy emergency planning.

In support of this directive, HSEO is developing analytical tools to provide a holistic assessment of Hawaii's energy eco-system and the interrelationships of sectors and policies such as electric production and delivery; electrification of ground transportation; energy efficiency; customer adoption of distributed energy resources; land use; and energy resiliency.

Hawaii Advanced Visualization Environment Nexus (HAVEN)

HAVEN is focused on the visualization and analysis of energy system data. HAVEN is supported by a \$225,076 grant from the USDOE, in partnership with the University of Hawaii Laboratory for Advanced Visualization and Applications and the HECO Companies. HAVEN will develop advanced visualization capabilities which will allow for HSEO to analyze and communicate information contained within complex energy data sets highlighting energy and related sector interdependencies and scenarios. HAVEN will allow HSEO to improve our assessment of utility power supply plans and related issues such as the electrification of ground transportation and land use. HAVEN is scheduled to have the first visualization completed by the end of 2017 and the second visualization completed by the end of 2018.

Hawaii Energy Visualization Initiative (HEVI)

HSEO's ongoing interaction with the USDOE has led to the creation of HEVI, an analytical model that will perform scenario analysis on Hawaii's comprehensive energy eco-system as well as feed data visualizations for program and policy assessment. Through the USDOE's National Renewable Energy Laboratory an estimated 2,000 NREL staff hours (equivalent of one full time employee) have supported this initiative to date. HEVI will allow for the development of HSEO's quantitative and qualitative capacity and assist to recommend, develop proposals for, and assess the effectiveness of policy and regulatory decisions, and conduct energy emergency planning. HEVI is targeted to have a beta version of the model completed in the 4th quarter of 2017.

Petroleum Supply Monitoring

HSEO is utilizing tools that better organize and characterize existing petroleum reporting datasets in a format that provides historical context of normal petroleum operations during emergencies and helps identify potential fuel shortage situations. HSEO will work to increase the effectiveness of these energy supply situational awareness tools to ensure consistency in information and databases.

HSEO Emergency Operations Plan

Pursuant to Gov. Ige's Administrative Directive No. 15-01 and HRS 196-4(17), which directs the ERC to conduct energy emergency planning, HSEO developed recommendations for the DBEDT Departmental Emergency Operations Plan (EOP).

The DBEDT EOP identifies key energy functions that must be maintained throughout a disaster, identifies energy emergency roles and responsibilities, and explains how HSEO will fulfill requirements listed in the State of Hawaii Emergency Support Function Annex for Energy (ESF #12).

As a result of this program activity, an essential HSEO energy assurance and energy emergency management plan was developed, substantially improved, and supported with in-house resources.

HSEO Training and Exercise Plan

Pursuant to HRS 127A, the State Catastrophic Hurricane Plan, and the State of Hawaii Emergency Support Function Annex, HSEO is implementing staff training and exercises focused on energy shortage emergencies.

Building and maintaining staff's energy emergency response expertise is a critical and ongoing process. As such, key staff participated in coordinated emergency management trainings that better prepare them for real world disaster response.

The value of reliable energy and the need to develop staff capabilities to prepare and respond to emergencies is of increasing importance as seen from the devastation caused by hurricanes Maria in Puerto Rico, Irma in Florida and Harvey in Texas. These disasters are cautionary tales of what can happen if a hurricane were to once again hit Hawaii as Iniki did in 1992. As a result of the training and exercise planning HSEO is in a better position to fulfill statutory responsibilities in the event of a natural or man-made disaster.

Update Hawaii Energy Assurance Statutory Guidance

Pursuant to HRS 125C-1, the ERC, as the Governor's authorized representative for energy shortages, has the authority to control the distribution and sale of petroleum products in times of shortage.

Given the current statutes are inadequate to meet the needs of government, industry, and the public, HSEO developed a legislative measure, which became part of Gov. Ige's legislative package, to improve the department's ability to establish situational awareness on the status of energy supplies under a state of emergency.

HSEO coordinated with industry, utility, and state agency stakeholders to address deficiencies in Hawaii's fuel shortage response and energy emergency (energy assurance) statutes. The measure provides policy guidance on preserving the state's energy security and to ensure that fuel products and energy resources are made available to emergency services and the public in an orderly, efficient, and safe manner.

Regulatory Activities

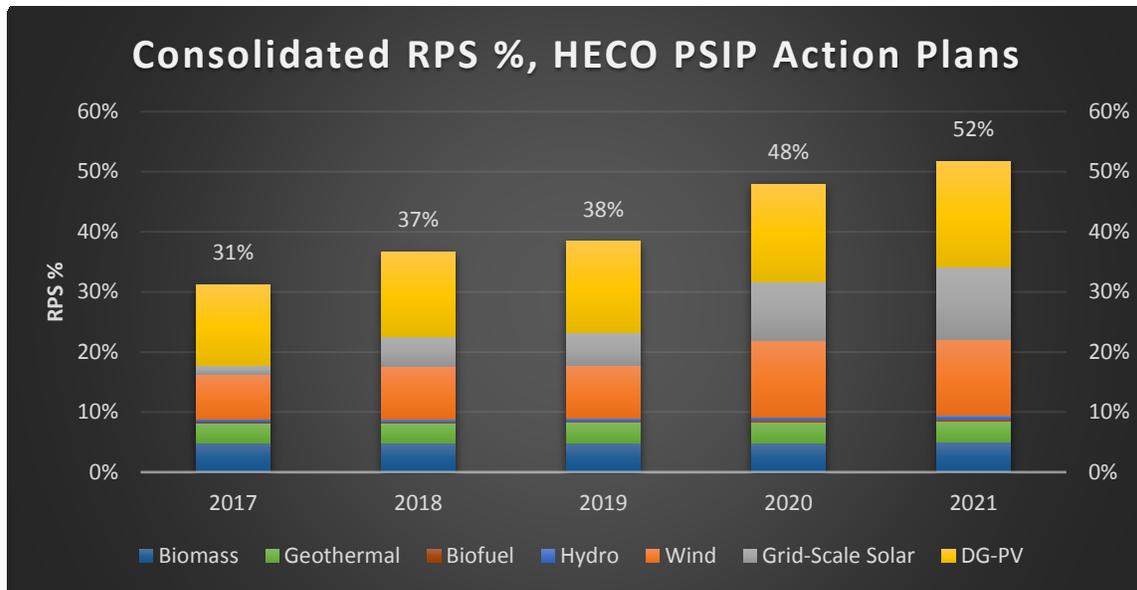
Pursuant to HRS 196-4(2) and HRS 196-4(17), the ERC shall recommend, develop proposals for, and assess the effectiveness of policy and regulatory decisions, conduct systematic analysis of existing and proposed energy resource programs, evaluate the analysis conducted by government agencies and other organizations, and recommend programs that represent the most effective allocation of resources for the development of energy resources.

The following are proceedings in which HSEO has actively provided support in relation to its responsibilities pertaining to planning for Hawaii’s transition to a clean energy economy.

HECO Companies 2016 Power Improvement Plan (2014-0183)

The HECO Companies’ 2016 Power Supply Improvement Plan (PSIP) outlines an overarching plan charting the specific actions for the years 2017 through 2021 to accelerate the achievement of Hawaii’s 100 percent RPS by 2045. On August 7, 2014, the PUC instituted proceedings to review the HECO Companies’ Power Supply Plans. HSEO attended technical conferences, filed comments on the Plans, and submitted and replied to Information Requests (IRs). HSEO attended and provided feedback in approximately 50 of the HECO Companies’ internal working meetings in development of the PSIP application under a non-disclosure agreement with the other intervenors which were the City and County of Honolulu, the County of Hawaii, the County of Maui and the Consumer Advocate. HSEO submitted a Final Statement of Position which: (1) addressed the Commission’s stated PSIP concerns; (2) proposed a methodology to be incorporated in future planning cycles; and, (3) assessed the ability of HEO’s proposed five-year action plan to achieve the state’s 100 percent renewable energy target, stabilize and reduce customer rates, and ensure the provision of safe and reliable service.

On July 14, 2017, the PUC adopted the HECO Companies’ PSIP, without prejudging any individual project, which identified 390 MW of grid scale PV and 157 MW of grid scale wind to be procured by the utility before the end of 2021 while maintaining the room from a long run planning perspective for 325.9 MW of customer sited DGPV. With the addition of these resources, the HECO Companies consolidated RPS percentage in 2021 will exceed 50 percent.



Hawaii Electric Companies Demand Response Program Portfolio Tariff Structure (2015-0412)³

³ The December 30, 2015 request for approval was filed in accordance with Docket No. 2007-0341 Order No. 32054 DR Policy Statement (April 28, 2014) and in accordance with HECO’s IDRPP filed July 28, 2014 and updated March 31, 2015 and a Revised Supplemental Report filed November 20, 2015.

On December 30, 2015, the HECO Companies filed their application for approval of a Demand Response Program Portfolio Tariff structure, reporting schedule and recovery of program costs through the Demand-Side Management (DSM) surcharge. In October 28, 2016, in response to Order 34051, the HECO Companies filed a revised Demand Response Portfolio which allows the Companies to control customer equipment to help manage the supply-demand balance of the electric grid. HSEO concerns included potential arbitrage risk if consumers can now also be suppliers and participate in both retail and wholesale markets; the need to incorporate energy assurance and energy response; and the tracking of non-electric system cost considerations and values. HSEO's Statement of Position, filed April 21, 2017, focused on: (1) whether the proposed DR tariff structure framework is sufficiently comprehensive and flexible to enable the successful deployment of a robust, cost-effective DR program portfolio; (2) whether the proposed Demand-Side Management (DSM) Surcharge is an appropriate mechanism through which to recover costs associated with the Companies' DR programs; and, (3) whether the Companies proposed reporting structure provides sufficient transparency and timely updates to inform the relative success of the DR program and/or whether there is a need for revision.

Energy Industry Information Reporting Program (EIIRP)

Pursuant to HRS 486J, the Energy Industry Information Reporting Act defines the industry entities that are affected by this reporting statute, the establishment of an energy data collection program and system, and details on the handling of any confidential data.

DBEDT collects and manages data from the petroleum industry including volumes of imported, refined, manufactured, exported, and distributed fuel by liquid fuel type to meet the requirements of government and industry, while promoting sound policy making, energy planning, energy assurance planning, and energy security under HRS 196-1(17).

Participation in the National Association of State Energy Officials (NASEO)

Pursuant to HRS 196-4(5), the ERC shall coordinate the state's energy programs with those of the federal government and other state governments.

HSEO attended a joint NASEO and National Conference of State Legislators (NCSL) Solar Policy and Utility Business Model conference in 2017, attended 10 NASEO webinars that provided insight on relevant energy policy issues including lessons learned from state governments across the nation and participated in USDOE's Clear Path V energy sector infrastructure systems table top exercise. Through the Clear Path V exercise, HSEO improved its energy emergency processes and procedures, ensuring the energy sector, including government, is better positioned to meet the needs of the state in a disaster. Additionally HSEO participated in NASEO's Energy Policy Outlook Conference and the NASEO 2017 Annual Meeting to connect and learn from state energy officials working on innovative energy policies and programs, and to engage with federal officials on priority energy issues. The conference convened the 56 State and Territory Energy Offices, and thought leaders from the public and private sectors to learn about what new federal leadership may mean for energy policy, markets, states, and the future of energy infrastructure across the electricity, fuels, natural gas, manufacturing, efficiency, renewables, transportation, and building sectors.

HSEO staff are active members of the NASEO Energy Security Committee which provides a forum for discussing energy data collection and analysis issues in relation to energy assurance, Transportation Committee which

examines electric and hybrid-electric, hydrogen, natural gas, propane, biodiesel, and ethanol vehicles and infrastructure, as well as the energy implications of automated and shared vehicles and serve as co-chair of the Fuels and Grid Integration Committee which focuses on issues related to the production, distribution, and consumption of electricity and liquid and gas fuels.

Innovation Strategic Plan and Innovation Center

Pursuant to HRS 196-4(1), 196-4(4), and 196-4(7), the ERC shall formulate plans and analysis to recommend programs that represent the most effective allocation of resources for the development of indigenous energy resources and inform the public of the energy resources situation.

HSEO has contracted with Cascadia Consulting Group, Inc., to develop a strategic plan for clean energy innovation. The strategic plan will assess the clean energy ecosystem in Hawaii through research and stakeholder engagement and develop recommendations for how HSEO can catalyze innovation towards a clean energy ecosystem. To date HSEO and Cascadia have had discussions with representatives from 34 organizations in the clean energy innovation community, including entrepreneurs, government officials at both state and county levels, non-governmental organizations, and other major energy-sector groups. The energy innovation strategic plan is anticipated to be completed by May 2018 and will outline various steps and specific actions that will support innovation within the energy ecosystem.

Additionally, HSEO has explored the possibility of an energy innovation center to bring together energy sector stakeholders, provide a space for them to convene group meetings, conduct industry trainings, and share information. HSEO contracted with the architecture firm Perkins + Will, Inc., to deliver conceptual ideas and plans and has engaged the energy community to get stakeholder feedback on the potential design and use for an innovation center. The assessment of space needs for an energy innovation center should be completed by the end of 2017 and shall be used to inform future decisions around the development of an innovation center.

Support of Energy Entrepreneurship – Elemental Excelerator (formerly Energy Excelerator) Contract

Pursuant to HRS 196-4(4) and 196-4(6), the ERC shall assist and encourage public and private agencies to implement projects to support our clean energy goals.

HSEO has partnered with Elemental Excelerator to support a training program, mentorship, outreach, and connection of Elemental Excelerator companies with Silicon Valley. The contract provided exposure for HSEO among entrepreneurs and helped to focus the Elemental Excelerator's events around local needs and issues. Specifically, the contract supported:

- A connection between clean energy companies working in Hawaii with investors in Silicon Valley to increase their exposure, create partnerships, and promote Hawaii's role as a test bed for clean energy.
- Training and mentorship for energy innovators in Hawaii, including students, interns, and energy entrepreneurs.
- Marketing and outreach for HSEO.

Energy-Related Economic Indicators

Pursuant to 196-4(1), the ERC shall develop criteria to measure the accomplishment of objectives for the optimum development of Hawaii's energy resources.

HSEO has begun to identify, track and convey progress on metrics related to energy as a part of the clean energy economy and the environment. HSEO has contracted with the University of Hawaii Economic Research Organization using funds from the USDOE to identify energy-related economic indicators, select indicators relevant to the state's energy goals and visually convey these metrics. The project will result in a list of indicators, their sources, and ways to visually convey these indicators so that they can be best understood. In addition to economic indicators, HSEO hopes to continue its efforts towards identifying, tracking, and conveying metrics related to energy, the environment, innovation, and policy.

Pursuant to HRS 226-18(a)(2), planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation.

HSEO has taken a leadership role in advancing the adoption of clean transportation across Hawaii, including facilitation of the deployment of zero emission vehicles and associated charging infrastructure which directly contribute to reduced petroleum consumption and emissions in the transportation sector. To achieve the transition to a decarbonized transportation sector, HSEO works with federal, state and county agencies, energy stakeholders, clean transportation stakeholders, and the local community to encourage and facilitate adoption of clean transportation.

U.S. Department of Transportation Federal Highway Administration designation of Electric Drive Corridors across Oahu and Maui

Pursuant to HRS 196-4(1) and HRS 196-10.5, the ERC shall formulate plans for the optimal development of Hawaii's energy resources and develop plans to assist the state and counties in the transition to a clean energy economy through the HCEI program respectively.

HSEO submitted proposals to nominate electric drive corridors on Oahu and Maui to the Federal Highway Administration (FHWA), U.S. Department of Transportation (DOT), pursuant to the Fixing America's Surface Transportation (FAST) Act. The nominated corridor solicitations were coordinated in cooperation with Hawaii Department of Transportation, County of Maui, City and County of Honolulu, and local partners including HECO Companies which have jurisdiction over the nominated corridor segments and existing DC fast charging stations.

As a result of the submission, the FHWA formally designated segments of both the Oahu and Maui proposed corridors as "Signage Ready," meaning that there are a sufficient number of facilities on the corridor to warrant signage alerting drivers of the availability of alternative fueling stations. EV charging corridors across the state sends a strong signal that Hawaii intends to support long-term growth in EV infrastructure, and looks to build on progress to date, including the current HECO Companies Commercial Public Electric Vehicle Charging Service Pilot. HSEO is currently developing an electric drive and EV charging corridor nomination for Hawaii Island in response to a 2017 FHWA request and solicitation for additional alternative fuel corridor nominations.

Volkswagen Settlement

Environmental Mitigation Trust

Pursuant to HRS 196-4(2), the ERC shall conduct systematic analysis of existing and proposed energy resource programs, evaluate the analysis conducted by government agencies and other organizations, and recommend programs that represent the most effective allocation of resources for the development of energy resources.

Gov. Ige has designated DBEDT as the lead agency for purposes of administering the State of Hawaii's \$8.125 million allocation per the Volkswagen Settlement's Environmental Mitigation Trust. HSEO is the primary state agency charged with expending and executing the Eligible Mitigation Actions funded by the Trust. Through data collection, analysis, stakeholder engagement, and public outreach HSEO is developing Hawaii's Beneficiary

Mitigation Plan which will summarize how the State of Hawaii plans to utilize the settlement funds. To further support its decision-making process, HSEO is evaluating the state's fleet data to evaluate opportunities for Volkswagen Settlement Environmental Mitigation Trust funding and state fleet electrification.

Zero Emission Vehicle Investment

Pursuant to HRS 196-4(5) and 196-4(8), the ERC shall coordinate the state's energy programs with the political subdivisions of the state and serve as consultant to public agencies and private industry on energy-related matters.

In addition to the Environmental Mitigation Trust, Volkswagen must invest \$2 billion over the next 10 years in zero emission vehicle (ZEV) infrastructure across the United States through its Electrify America initiative. HSEO submitted comments to Electrify America to support the investment of electric vehicle charging infrastructure across Hawaii. HSEO is currently serving as a technical advisor on a proposal to Electrify America with Pacific Historic Parks, the HECO Companies and the City and County of Honolulu for electric vehicle charging station installations at Oahu's iconic destinations on Oahu. HSEO conducted an analysis of possible private and public sites to host charging stations and recommended sites that would yield high utilization by electric vehicle drivers.

ZEV Investment funding is a valuable catalyst to advance Hawaii's leadership in decarbonizing both its electric and transportation sector and can boost consumer confidence for a market sector eager to make sustainable investments in Hawaii's communities. Charging infrastructure at iconic sites included in the proposal on which HSEO advises would support electric vehicle adoption, and provide a combination of benefits including, but not limited to, central locations and local population site attendance. The proposal includes roughly four DC fast chargers and six level 2 chargers (which are envisioned to include multiple ports to accommodate more EVs).

State of Hawaii/Department of Navy Alternate Fuels Ground Transportation Working Group, and Hawaii Department of Transportation Sustainable Transportation Forum

Pursuant to HRS 196-4(5) and 196-4(8), the ERC shall coordinate the state's energy programs with those of the federal government, other state governments, and governments of nations with interest in common energy resources, and serve as consultant to public agencies and private industry on energy-related matters.

HSEO has engaged in a variety of activities that support state energy policy through coordination at the state, federal, and international level. HSEO provides technical support to the Hawaii/U.S. Department of Defense Alternate Fuels Ground Transportation Working Group per the Department of Navy and State of Hawaii Memorandum of Understanding. The working group focuses on integrating alternative fuel vehicles and fuel saving technologies which will cultivate an environment encouraging employees and organizations to adopt clean energy transportation solutions. The working group discusses strategies and opportunities to transition government-owned vehicles to an electric drive fleet and personally-owned electric vehicle fueling station management options on government property.

HSEO also supports the Hawaii Department of Transportation in the Sustainable Transportation Forum which provides stakeholders of various transportation sectors discussion opportunities to ensure that environment, social, and economic considerations are factored into decisions affecting transportation activities. Fuel and

emission reducing tactics are addressed in the forum including, but not limited to, multi-modal solutions and reducing vehicle miles traveled. HSEO attends four quarterly Sustainable Transportation Forum meetings annually. HSEO engages with an estimated 50 clean transportation stakeholders annually via its participation the Sustainable Transportation Forum.

Public Education Programs: Drive Electric Hawaii, HSEO Web Tools

Public awareness and education are key to the adoption of emerging technologies such as electric vehicles is public awareness and education. Pursuant to HRS 196-4(7), the ERC shall conduct public education programs to keep the public informed of available resources and charging infrastructure to support the adoption of EVs. HSEO supports clean transportation stakeholder and industry groups that utilize public education to advance clean transportation adoption across Hawaii.

Drive Electric Hawaii

DBEDT is a signatory of the Drive Electric Hawaii memorandum of understanding along with local partners and other state agencies including, the Division of Consumer Advocacy, Department of Transportation, the Hawaii Electric Companies, Kauai Island Utility Cooperation, Ulupono Initiative, and Blue Planet Foundation. Drive Electric Hawaii pursues the ultimate elimination of fossil fuel in ground transportation by focusing on supporting the electrification of ground transportation. The Drive Electric Hawaii partners meet monthly in addition to subcommittee meetings to coordinate activities.

HSEO webpage and EV Stations App

HSEO responds to public inquires relating to clean transportation, while managing public-facing web resources, including the EV Stations Hawaii app and HSEO's EV webpage (electricvehicle.hawaii.gov). These tools provide charging station and network location and details, electric vehicle industry updates, and laws and regulations, respectively. EV Stations Hawaii App has 1,800 users and has recorded 7,800 user sessions in the past twelve months.

HSEO has built quantitative and qualitative capacity in clean transportation and consistent with HRS 196-4(8) serves as consultant to the governor, public agencies, and private industry on related issues. HSEO responds to inquiries from the governor, public agencies, and private industry regarding clean transportation projects including electric vehicle adoption, charging station installation deployment and compliance with HRS 291-71 – Designation of parking spaces for electric vehicles; charging systems; free electric vehicle parking; and exemptions from HOV lanes, HRS 196-2.5 – Placement of electric vehicle charging system- multi-family residential dwelling or townhouse unit, and HRS 103D-412 – Light-duty motor vehicle requirements for County and State Agencies. HSEO responds to an estimated 24 inquiries from government agencies and industry annually. HSEO's assistance helps to advance clean transportation across Hawaii.

HSEO hosted four (unpaid) student interns from Seoul National University (SNU) School of Law. Internship project work supported HSEO's clean transportation projects such as the development of the State of Hawaii's electric drive corridor nomination to the FHWA, management of data to update HSEO's EV Stations Hawaii app, and conducting research and analysis to inform HSEO's positions during the Legislative session. With support from

SNU, the internship program has been immensely successful and is very popular among SNU students. It has provided HSEO with more than 500 hours of support, or the equivalent of one-fourth of a full time employee.

Support of Regulatory Proceedings

Pursuant to HRS 196-4(2) and HRS 196-4(17), the ERC shall recommend, develop proposals for, and assess the effectiveness of policy and regulatory decisions, and conduct systematic analysis of existing and proposed energy resource programs, evaluate the analysis conducted by government agencies and other organizations, and recommend programs that represent the most effective allocation of resources for the development of energy resources. To advance clean energy goals and pursuant to HRS 196-4, HSEO assessed and analyzed the regulatory proceedings for the Commercial Public Electric Vehicle Charging Facility Service Project.

The HECO companies requested approval to extend Schedule EV-F, Commercial Public Electric Vehicle Charging Facility Service Pilot, and Schedule EV-U, Commercial Public Electric Vehicle Charging Service Pilot. The HECO Companies' request was for a 10-year extension from June 30, 2018, to June 30, 2028, of their five-year pilot program for public EV charging facilities operating in each of the HECO Companies' service territories. DBEDT submitted Information Requests on the application focused on EV market information, customer demographic information, individual charging related data by location, billing information collected, and asked how the charging program will complement and support wide-spread EV adoption. On June 2, 2017, the PUC issued Decision and Order No. 34592, which approved the HECO Companies alternate request for a 5-year pilot program with a 5-year extension and directed the Companies to update their EV Time-of-use rates. Additional collaboration with the HECO Companies and the Consumer Advocate lead to the HECO Companies sharing valuable information on EV consumer charging behavior and fast charger utilization. DBEDT's comments filed on September 22, 2017, supported the PUC's decision.

Pursuant to HRS 196-4(5) and HRS 196-4(7), the ERC shall conduct public education programs and coordinate with federal government, other state governments, and governments of nations. HSEO conducts a myriad of collaborative public education and outreach activities to promote and promulgate the state's clean energy goals. HSEO's education and outreach initiatives reach a global audience and promote Hawaii's aggressive clean energy goals. HSEO's education and outreach target audience includes local and international energy stakeholders, policy makers, regulators, non-profits, and the community to help educate on the importance and progress of Hawaii's clean energy goals and initiatives.

Hawaii Clean Energy Initiative (HCEI)

Pursuant to HRS 196-10.5, there is established within DBEDT a Hawaii Clean Energy Initiative program to manage the state's transition to a clean energy economy.

HCEI Overview

In 2014 the USDOE and DBEDT revamped the structure for the HCEI and put in place a new framework with an emphasis on engaging with external stakeholders. An Executive Management Team was formed consisting of the Energy Resources Coordinator (DBEDT), State Energy Office Energy Program Administrator, Public Utilities Commission Chair, the Consumer Advocate and the USDOE. The Executive Management team formed an Advisory Board (Board) and appointed a Chair and Co-Chair who also serve on the Executive Management team. The Board has representation from County Energy Coordinators, Economic Development Boards, presidents of each utility, U.S. Pacific Command, the private sector through the Hawaii Business Roundtable and the Chamber of Commerce Hawaii, non-profit and community groups and State Legislators (on an ex-officio status).

HCEI Advisory Board and Stakeholder Charrettes

The Advisory Board provides input on priority issues and challenges facing the energy community. The Chair, in coordination with the Executive Management team, is responsible for setting meeting agenda's and coordinating and facilitating meetings. In fiscal year 2017, the Advisory Board met three times with an average attendance of twenty two members. The meetings resulted in the decision to begin developing action-oriented position statements to be presented to policy leaders, decision makers, and other influencers in the energy industry. The Board developed two policy statements that encouraged the State of Hawaii and the four counties to advance a policy framework to enable Hawaii to participate in the autonomous vehicle future and recommendations on developing incentives for renewable energy technologies and particularly energy storage.

Additionally, HCEI stakeholder charrettes were designed to engage the broader stakeholder community to report on progress towards meeting the HCEI renewable energy, energy efficiency and transportation targets and to maintain momentum in the community for key clean energy initiatives.

In May and September 2017, HSEO through HCEI coordinated a series of meetings for energy efficiency stakeholders to discuss the status of the EEPS and the path ahead. Participants included past and present Public Benefit Fee Administrators and contractors, policy makers, regulators, the consumer advocate and other representatives from his office, representatives of industry, economic development specialists, representatives of the electric utility, and innovation.

January 2018 will mark the ten year anniversary of HCEI and provides an opportunity to promote the success of the HCEI initiative over the past ten years and inform stakeholders of the goals and benefits of the partnership as it moves into the next ten-year phase. To achieve this, HSEO is proposing a series of events during the 2018 calendar year to highlight the HCEI achievements over the past ten years and to lay the foundation of what HCEI can accomplish in the next ten years working towards meeting Hawaii's clean energy goals.

Hawaii-Okinawa Memorandum of Understanding (MOU)

The Hawaii-Okinawa MOU for Clean and Efficient Energy Development and Deployment was signed by the USDOE; Ministry of Economy, Trade and Industry of Japan; State of Hawaii; and Prefecture of Okinawa in June 2010. The partnership fosters the development of clean and energy efficient technologies needed to solve global energy security and climate change challenges. In June 2015, the original signatories extended the MOU through 2020 for further collaboration on mutual shared interests in developing and deploying renewable energy, clean transportation, grid modernization and energy efficiency measures.

The collaboration has resulted in the development of four committees: Okinawa Hawaii Clean Energy Promotion Project Committee, Ocean Thermal Energy Conversion (OTEC) Workshop Committee, Power System Technical Exchange Promotion Committee, and the Island Energy Technical Study Committee. HSEO has convened other energy stakeholder's participation including the HECO Companies, HNEI, and the Pacific International Center for High Technology Research (PICHTR) as well as academia and utility representatives in Japan to support and promote clean energy activities in the established committees.

For fiscal year 2017, HSEO attended the 7th task force meeting in Okinawa, hosted the 8th annual task force meeting in Hawaii, participated in the 8th Annual OTEC Workshop at the Natural Energy Laboratory of Hawaii Authority, attended three Island Energy Technical Committee meetings in Naha Okinawa, attended two Technical Exchange committee meetings and participated in two business-to-business exchanges to promote clean energy innovation and economic development. In October 2017 the HSEO supported a DEBDT delegation from Hawaii to Okinawa that participated in the Worldwide International Uchinanchu Energy Symposium in Naha Okinawa and visited the OTEC plant in Kumejima Island.

International Delegations

HSEO continues to coordinate the state's energy programs with those of governments of nations with interest in common energy resources. HSEO continually meets with foreign delegations that are interested in Hawaii's Clean Energy Initiative to share ideas on renewable energy, energy efficiency, clean transportation, and smart grid initiatives among others.

In 2017 HSEO hosted members from the Kanehide Group of Okinawa, students of Akita Chuo High School Japan, the Fukuoka Prefectural Assembly, professors from Kyushu University, the Kumejima Prefecture Government, the Okinawa Prefecture Government, the Okinawa Enotech Company, the Taiwan Public Services Communication, a Korean delegation comprised of sixteen different provinces to share clean energy goals and best practices, the Ambassador from the Royal Danish Embassy and a group of energy experts from New Zealand.

U.S. Department of State Professional Fellows Program – Outbound Project to Armenia

HSEO participated in a goodwill Professional Fellows Outbound project in Armenia through the U.S. Department of State and U.S. Embassy in Yerevan, Armenia, to work with all levels of local government, academia, non-profits and industry on the advancement of local knowledge, policies, regulations and experience toward the greater adoption of clean energy in Armenia. The goals of the project were: (1) discussions with decision makers of public and private sector about regulatory/policy, technical, financial, physical and cultural barriers and existing solutions for renewable energy promotion on the example of Hawaii; (2) raising awareness among students and young leaders about advantages of transforming the Armenian economy by growing the energy sector; and, (3) empowering women in energy of Armenia toward sustainable development.

Aside from the positive impact this project had in Armenia, it also benefitted Hawaii in that it provided greater international visibility of our aggressive 100 percent RPS goal and opportunity to learn from like-minded people and organizations from around the world on best practices and creative solutions.

Key highlights of this project included participation in fourteen meetings including the U.S. Embassy in Armenia, the head of the Energy Department of the Ministry of Energy and Natural Resources and the Public Services Regulatory Commission of the Republic of Armenia. Additionally a final report for this project was produced that states, “it was concluded that Hawaii’s experience can be useful in [the] transformation process of Armenian’s energy ecosystem and learning from Hawaii’s success and challenges will help on the way of putting higher clean energy goals by making some case studies for universities, piloting some policy shaping projects by international organization, discussing already applied high-impact solutions, increasing engagement of customers and ‘prosumers’ in changing energy industry.”

Military Collaboration

HSEO staffs the activities under the Department of the Navy (DON)–State of Hawaii Memorandum of Understanding (MOU) covers the period from June 21, 2016, through December 31, 2020.

The MOU established the partnership to collaborate on energy related issues of mutual benefit to coordinate goals and to build partnerships. The Parties have similar energy goals relating to the reduction of greenhouse gases, fossil fuel use reduction, energy efficiency, water consumption, use of renewable energy, and alternative fueled vehicles usage. As the DON is one of the largest employers in Hawaii and one of the top energy users, the partnership is a natural step for the two parties to take. The partnership established the following three working groups that meet monthly: Alternative Fuels in Ground Transportation, Renewable Energy, and Resiliency/Reliability.

The Renewable Energy working group, with funding from the USDOE, produced a report titled *Kalaeloa Energy System Redevelopment Options Including Advanced Microgrids*. The report provided technical solutions and related costs for redeveloping the Kalaeloa energy infrastructure to HCDA. HSEO also assisted with stakeholder engagement, review and input on technical analysis and report development

The Alternative Fuels in Ground Transportation working group has been productive in identifying and vetting locations for public electric vehicle charging stations on Navy land. HSEO also provided assistance with understanding the Volkswagen Settlement process for competitive grants.

EDUCATION AND OUTREACH

The Resiliency/Reliability working group continues to discuss strategic planning for resiliency and generation alternatives on the windward side of Oahu.

An Executive Committee convenes for briefings by the working groups and to provide additional information of similar projects in other jurisdictions.

2017 VERGE Hawaii: Asia Pacific Clean Energy Summit (VERGE Hawaii)

HSEO, with contractor GreenBiz Group, produced the 2017 VERGE Hawaii in Honolulu, Hawaii. The Summit was a successful public event that educated participants about Hawaii's clean energy goals, challenges, and solutions. VERGE Hawaii attracted energy stakeholders from the world's largest corporations, as well as entrepreneurs, utility executives, public officials, and representatives of nonprofits and academia.

VERGE Hawaii drew 744 energy stakeholders from the world's largest corporations, as well as entrepreneurs, utility executives, public officials, and representatives of nonprofits and academia – plus 10,000 more who tuned in to the livestream from around the world. VERGE Hawaii attracted 164 high-caliber speakers to share their innovative ideas and philosophies on clean energy policy, models, technologies, and infrastructure. The program included 29 mainstage presentations and 33 tutorials, workshops, and breakout discussions. Top ranked sessions included HSEO sponsored Future Models for Utility Ownership and Regulation in Hawaii, Living Building – A Real-World Report on the world's greenest office building, and Integrated Demand Side Management.

HSEO Website (energy.hawaii.gov)

HSEO maintains its own dedicated website that educates visitors on Hawaii's growing clean energy economy and HSEO's vision, role, and programs. The HSEO website provides information on the initiatives, activities, and programs of the energy office. Visitors can find information on energy planning, renewable energy, energy efficiency, and EVs. In May 2017 a new website was launched for an HSEO efficiency program – Hawaii Green Business Program, which assists and recognizes businesses that are environmentally responsible in their business practices. In June 2017 information on the utility model study was added to the energy office site. The study will evaluate the costs and benefits of various electric utility ownership models, as well as the viability of various utility regulatory approaches, to aid Hawaii in achieving its state energy goals. This page serves as the single source for public awareness and participation of this extensive study.

In fiscal year 2017 there were 175,931 page views to energy.hawaii.gov. The top five countries that visited the HSEO site were United States, Russia, Japan, Canada, and the United Kingdom. The top five pages visited were the homepage, Developer & Investor Center, EVs Charging Networks, EVs Laws & Incentives, and the EV Stations Hawaii app and HTML5.

Hawaii Clean Energy Initiative Website (hawaiicleanenergyinitiative.org)

HSEO maintains the dedicated website for HCEI that educates visitors on the history of HCEI, goals and objectives, organizational structure, project teams, and legislative updates. The Hawaii Clean Energy Initiative website informs visitors about the program that launched in 2008 as a partnership between the State of Hawaii and the USDOE. A major overhaul was done this fiscal year to streamline the content with a focus on policy and outreach.

EDUCATION AND OUTREACH

Enhancements included graphics and infographics, simplifying pages and content, and creating a mail list sign up widget.

In January 2017 the Progress Through Policy page was added that highlights key energy policy milestones from the adoption of HCEI. In March 2017 the Help Create A Clean Energy Future page was launched to provide residents with resources from energy efficiency to energy innovation.

In fiscal year 2017 there were 40,244 page views to hawaii-clean-energy-initiative.org. The top five countries that visited the HCEI site were United States, Canada, Japan, Germany, and India. The top five pages visited were the homepage, about page, Goals and Objectives, Reports and Publications, and the Charrettes page.

HSEO Press Releases, Publications, and Collateral

HSEO issues press releases to publicize newsworthy projects, announcements, and initiatives that help further raise awareness of continued activity and growth of clean energy in Hawaii.

HSEO issued 11 press releases on newsworthy information and events that were sent to over 60 local and mainland media organizations as well as Hawaii policymakers. HSEO receives earned media from its press releases and this is an important channel to educate and generate awareness. Of the 11 issued press releases, media coverage was garnered 33 times by local and national media channels. There are also the numerous social media hits when the press releases go viral.

HSEO develops and distributes publications and collateral material to raise awareness and communicate progress of clean energy efforts of HSEO and HCEI. To educate and update stakeholders on Hawaii's constantly changing energy landscape, HSEO distributes *The Current*, a quarterly e-newsletter; *Hawaii Energy Facts & Figures*, an annual report on Hawaii's energy data; and collateral pieces such as HSEO and HCEI fact sheets. In fiscal year 2017, four quarterly e-newsletters were sent to approximately 7,000 subscribers. In fiscal year 2017, *Hawaii Energy Facts & Figures* was sent to over 300 policymakers and local and international energy stakeholders. The promotional material were utilized to communicate initiatives and program messages and distributed at over 50 events in which HSEO and HCEI participated.

PROGRAM FUNDING

Funding for the HCEI program is derived primarily from the Energy Security Special Fund (ESSF), established under HRS 201-12.8. The ESSF consists of:

- (1) The portion of the Environmental Response, Energy, and Food Security Tax specified under HRS 243-3.5;
- (2) Moneys appropriated to the fund by the legislature;
- (3) All interest attributable to investment of money deposited in the fund; and
- (4) Moneys allotted to the fund from other sources, including under HRS 196-6.5.

In the fiscal year ending June 30, 2017, ESSF revenues were \$3,826,350, down 1.76 percent from the preceding fiscal year. HSEO's allocation of the Environmental Response, Energy, and Food Security Tax ("Barrel Tax") to the ESSF is critical for supporting HCEI, given Hawaii's aggressive goal to reach 100 percent renewable energy by 2045 and 30 percent energy efficiency by 2030. With HSEO operating costs rising because of collective bargaining increases and other administrative expenses, including replacement of information systems technology hardware, the current allocation from the Barrel Tax is projected to be insufficient to fund the HCEI program beginning in fiscal year 2020.

Federal funding from USDOE and other federal agencies supplements HSEO's ESSF funding. USDOE's State Energy Program (SEP) provides an annual formula allocation of approximately \$280,000 to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste. SEP emphasizes the state's role as the decision maker and administrator for program activities within the state that are tailored to its unique resources, delivery capacity, and energy goals. HSEO also actively pursues federal funding opportunities that align with its objectives.

The Hawaii Clean Energy Initiative Program Fiscal Year 2018 Spending Plan and Expenditures from the Energy Security Special Fund tables are on the following pages.

**Hawaii Clean Energy Initiative Program
Fiscal Year 2018 Spending Plan**

ANNUAL SPENDING PLAN

	State Funds	Other	Total
	<hr/>	<hr/>	<hr/>
Hawaii State Energy Office Operations	4,625,722	200,000	4,825,722
Programs and Projects	298,717	1,115,129	1,413,846
	<hr/>	<hr/>	<hr/>
	4,924,439	1,315,129	6,239,568

Spending plan is based on anticipated spending levels for FY18

FUNDING SOURCES:

State Funds

Energy Security Special Fund	6,247,790		6,247,790
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Federal Funds

USDOE - State Energy Program (SEP)		328,285	328,285
USDOE - SEP Competitive 2016 - HAVEN		206,844	206,844
USDOE - Energy Efficiency & Conservation Block Grant *		500,000	500,000
USDOE - SEP American Recovery & Reinvestment Act *		280,000	280,000
	<hr/>	<hr/>	<hr/>
	6,247,790	1,315,129	7,562,919

* Repurposed ARRA Funds

Expenditures from the Energy Security Special Fund		
ENERGY SECURITY SPECIAL FUND	Actual FY2017	Projected FY 2018
BEGINNING FUND BALANCE	3,327,352	2,432,790
REVENUES		
Environmental Response, Energy and Food Security Tax	3,800,693	3,800,000
Investment Pool Interest	16,996	15,000
Other ⁴	8,661	
TOTAL REVENUES	3,826,350	3,815,000
EXPENDITURES		
Hawaii State Energy Office Operations	4,098,218	4,625,722
Programs:		
Renewable Portfolio Standards Program Support	218,263	212,617
Energy Efficiency Portfolio Standards Program Support	7,500	7,500
Education and Outreach	396,932	78,600
TOTAL EXPENDITURES	4,720,912	4,924,439
BALANCE	2,432,790	1,323,351

⁴ Employee vacation earned with other agency