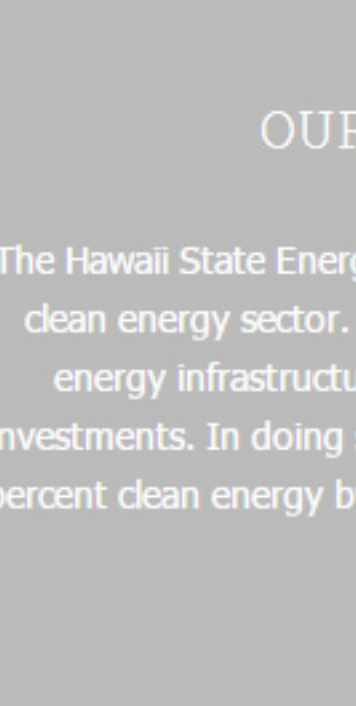




The Current serves Hawaii's businesses and policy makers in making informed decisions about clean energy investments and policy. Hawaii's clean energy sector is a significant driver for economic development to replace fossil fuel expenditures with home-grown industries that generate revenue and create high-paying jobs for local residents.

CLEAN ENERGY IS MOVING FORWARD
MARK GLICK, ENERGY ADMINISTRATOR



Advancing Hawaii's clean energy goals requires an aggressive pursuit to innovate our energy systems and policy directives. This quarterly update highlights HSEO leadership in Energy Efficiency Portfolio Standards (EEPS) goals and performance contracting as well as progress updates on renewable energy and HCEI 2.0. The featured story, "Energizing Programs & Partnerships," showcases HSEO's productive partnership with the Energy Excelsior to stimulate clean energy start-ups in our local economy.

OUR CLEAN ENERGY VISION

The Hawaii State Energy Office (HSEO) will transform Hawaii's economy by growing the clean energy sector. To this end, HSEO works to stimulate the deployment of clean energy infrastructure and serve as a catalyst for energy innovation and test bed investments. In doing so, HSEO will lead the charge in exceeding the goal to achieve 70 percent clean energy by 2030, with 30 percent from efficiency measures and 40 percent from locally generated renewable sources.

LEADING THE CHARGE

Hawaii Renewable Energy Generation by Resource

Hawaii's rich natural resources support an extremely diverse renewable energy portfolio, with increasing contributions from solar, wind, geothermal, biomass, and rooftop solar. Collectively, energy generated by renewable resources represented 18% of net electricity sales in 2013.

Solar Related Construction Expenditures

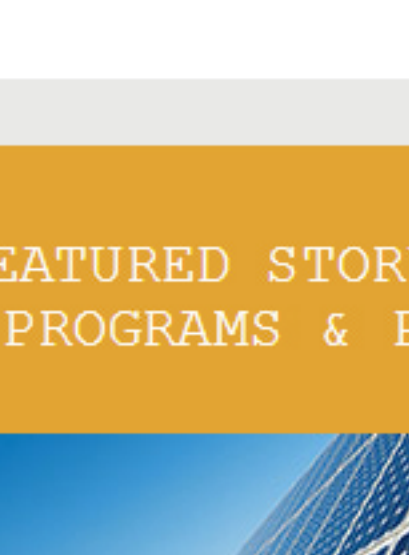
Hawaii's solar industry has a significant impact on the construction industry, peaking in 2012 at 28.5% of all construction expenditures in the state. Since then, with the decline in solar projects, solar-related construction expenditures have also decreased.

Updated Renewable Energy Project Permitting Guide & Wizard

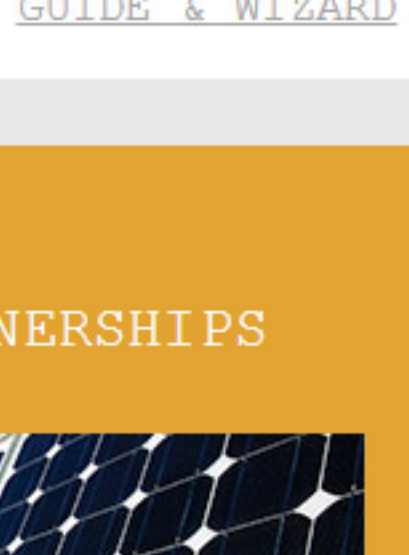
HSEO's updated Guide and Online Permitting Wizard, housed in the Developer & Investor Center, helps developers and investors through the planning and permitting process for renewable energy facilities in Hawaii; serving to accelerate a project's journey to the marketplace.



[HAWAII
RENEWABLE
ENERGY
GENERATION BY
RESOURCE](#)



[SOLAR RELATED
CONSTRUCTION
EXPENDITURES](#)



[UPDATED
RENEWABLE
ENERGY PROJECT
PERMITTING
GUIDE & WIZARD](#)

FEATURED STORY: ENERGIZING PROGRAMS & PARTNERSHIPS



HSEO is actively working to grow our clean energy industry into a more robust sector of the state's economy. This evolution is due to HSEO programs and resources, as well as key partnerships with like-minded organizations.

The [***Hawaii Clean Energy Leaders List***](#) showcases the significant progress being made by commercial enterprises that have potential in assisting the State of Hawaii achieve its collective goals under the Hawaii Clean Energy Initiative, many of which have collaborated with HSEO and utilized helpful tools in our [***Developer and Investor Center***](#).

HSEO has forged a valuable partnership with the [***Energy Excelsior***](#), an organization that helps startups implement solutions for energy challenges in Hawaii and the Asia Pacific. Energy Excelsior programs advance critical, high impact solutions and shape new technologies required to meet and exceed the state's clean energy goals and overall economic growth targets. Last fall, the State of Hawaii executed a \$500,000 contract with the Energy Excelsior for initiatives that aim to create jobs and develop Hawaii's workforce in the clean energy industry. Another goal of the contract is to commercialize new energy technologies in Hawaii, and position Hawaii as the world's leading location for investment in clean energy innovation and economic growth opportunities. To address these goals, the Energy Excelsior has three programs specifically designed to support the state's goals and objectives:

- **The Silicon Valley Bridge Program** supports direct strategic partnering by taking Hawaii clean energy companies to the Bay Area in California. The purpose of this program is to conduct meetings, meet potential partners and visit technology companies. Participants will also attend workshops and pitch investors.
- **The Training Program** will support early-state entrepreneurs through several events such as university-based workshops, energy-focused hackathons, start-up weekends and business pitch events. Expert advice will also be provided to students, faculty and staff at educational institutions that have innovative technologies, and are interested in starting new entrepreneurial ventures to commercialize their innovations.
- **The Technology Testing & Demonstration Program** will assess and install metering and instrumentation equipment at the Energy Excelsior headquarters. This will operate as an efficiency measure to demonstrate an integrated advanced energy system within a commercial building environment. The space will also act as a knowledge sharing and community building workplace, and be partnered with technology testing experts from the University of Hawaii and other organizations.

HSEO has collaborated with several of [***Energy Excelsior's portfolio companies***](#), many of which are already engaged in clean energy innovations. [***FreeWire Technologies***](#) combines robotics and energy storage to create a network of mobile electric vehicle chargers. [***Gen-X Energy Development***](#) worked with a Big Island agricultural operation to build an off-grid water pumping system powered by a 100-kW wind turbine, battery and systems controls. This project not only benefits the Big Island community's agriculture industry, but also showcases a new technology approach to microgrid development and provides promise for other similar opportunities in Hawaii and beyond. HSEO assisted Gen-X with the permitting of its community wind turbine and facilitated meetings with the U.S. Fish and Wildlife Service, to address impacts to protected species. [***TerViva***](#) develops and commercializes new crops that grow sustainably on previously underproductive agricultural land. An initial planting from 2012 is now demonstrating early yields.

HSEO met with TerViva to provide guidance on possible partnership and land opportunities as well as regulatory and permitting requirements.

HSEO also has a number of resources for developers and investors. The [***Developer & Investor Center***](#) is designed to provide prospective developers and investors the resources for starting a clean energy venture in Hawaii. The [***Renewable Energy Permitting Wizard***](#) tool was developed to help those proposing renewable energy projects understand the county, state, and federal permits that may be required for their individual project. This tool works for projects ranging in size from residential solar installations to large utility-scale facilities. The [***Renewable EnergyGIS Map***](#) is a tool that provides renewable energy resource and site information for specific Hawaii locations. It is intended to help landowners, developers, and policy makers understand the renewable energy potential of sites statewide.

FEATURED STORY: CURRENT ACHIEVEMENTS



Energy Efficiency Portfolio Standards (EEPS) Progress

While renewable energy is a major part of the clean energy equation, [***energy efficiency***](#) also plays a significant role. HSEO is pleased to report recent strides made in our state's energy efficiency initiatives. Hawaii is ahead of its EEPS interim goals, at 17.3 percent in 2014 versus 15.7 percent in 2013 (KIUC not included in 2014 figures). This puts our state well ahead on the course to reaching the goal of reducing electricity use by 4,300 GWh through energy efficiency measures by 2030.

Additionally, Hawaii is being honored with the Energy Services Coalition's Race to the Top award for leading the nation in per capita energy performance contracting for state and county buildings for the third consecutive year. Our state leads the nation with \$235.74 invested per capita – well above the national average of \$48.93.

HSEO has provided technical assistance for [***Energy Performance Contracting \(EPC\)***](#) to state agencies and counties since 1996. EPC projects vary widely and include courthouses, community colleges, hospitals, prisons and airports. Since the program's inception, \$315 million in EPC contracts have been awarded in Hawaii; resulting in the creation of 2,670 jobs and an energy savings of nearly \$793 million over the life of the contracts. Energy savings for these projects over 20 years (over 1.9 billion kWh) is equivalent to powering an estimated total of 254,194 households for one year.

As of December 2013, the Hawaii Department of Transportation Airports Division executed a \$150 million agreement for EPC for 12 airports statewide. It financed the project by selling \$167.7 million of certificates in the municipal bond market. With an overwhelming response from market investors, more than \$1.1 billion in orders from local Hawaii and national investors was received.

Using EPC, the state's airports will be upgraded with the latest energy efficient and green technology. The project will cut energy use by 49 percent and save at least \$496.2 million in energy costs over the next 20 years. Improvements will include:

- Replacing 74,500 light fixtures and 372 transformers
- Installing 9,100 solar photovoltaic panels
- Upgrading and replacing chilled water and air conditioning systems
- Installing smart controls
- Addressing deferred maintenance such as roof repairs to accommodate the upgrades

HCEI 2.0 - Transportation Charrette Update

Under the [***Hawaii Clean Energy Initiative transportation charrette***](#), HSEO coordinates valuable input from clean energy industry stakeholders on transportation issues that are critical to making progress in clean energy.

Hawaii's efforts thus far in reducing Hawaii's dependence on fossil fuel have focused largely on power generation. However, with transportation accounting for two-thirds of Hawaii's oil consumption, transportation issues have become a top priority. In this effort, HSEO has enlisted input from key stakeholders and a world-class partner, the International Council on Clean Transportation (ICCT). ICCT has provided the technical expertise and policy knowledge needed to establish goals and a timeline for reducing petroleum-based fuels in the transportation sector.

ICCT will wrap up a series of stakeholder consultations in June and issue a final report that outlines actionable steps for reducing consumption of petroleum-based fuels in the transportation sector. The report will cover not only ground transportation, but aviation and marine fuels. One area of focus is the feasibility of implementing electric-drive infrastructure across the state that could also support grid balancing and energy assurance objectives. In a preliminary report, ICCT noted that hydrogen fuel cell and plug-in electric vehicles are complementary technologies that can help reduce petroleum use in ground transportation.

DID YOU KNOW?



Hawaii ranks #6 in the US Green Building Council's listing of states with LEED certified spaces. LEED is the world's most widely used and recognized green building rating system, ranking states in terms of square feet of LEED space per state resident. LEED certified spaces use less energy and water resources, save money for families, businesses and taxpayers, reduce carbon emissions and create a healthier environment for residents, workers and the larger community.

ENLIGHTENING NEWS AND ARTICLES



[***Hawaiian Electric Co. Says It Generates 21% of Its Power From Renewable Energy***](#)

(Pacific Business News, 2/26/15)

[***Hawaii Foreign Trade Zone looks at going off the grid with microgrid project***](#)

(Pacific Business News, 2/26/15)

[***Oahu's Solar PV Market Continues to Tumble***](#)

(Pacific Business News, 3/9/15)

[***Diversity is the Key***](#)

(Honolulu Star-Advertiser, 3/11/15)

[***Hawaii's Major Transportation Energy Report to Be Unveiled in June***](#)

(Pacific Business News, 4/6/15)

[***Hawaii Begins Work on Major Policy Initiative to Reach 100% Clean Energy***](#)

(Pacific Business News, 4/7/15)

[***Four Questions for Mark Glick on Energy***](#)

(Pacific Business News, 4/24/15)

UPCOMING EVENTS



7th Annual [***Asia Pacific Resilience Innovation Summit & Expo***](#), August 24-26, 2015, Hawaii Convention Center

HSEO is proud to be a Partner and Supporting Organization of the 2015 Asia Pacific Resilience Innovation Summit and Expo. The 7th annual summit will convene business, technology and policy leadership across the global resilience pillars of energy, agriculture, water and security. These joint events collaboratively seek out new solutions for the vanguard communities facing the impact of climate change.

As a member of HSEO's network, register with the promotional code **15HSEO10** to receive a 10% discount on the conference fee.