

Hawaii

Locally produced biofuels can increase energy security, stimulate economic growth, and improve environmental quality in Hawaii. The Bioenergy Technologies Office (BETO) enables the development of novel technologies that can be used to establish Hawaii as a leader in the advanced bioeconomy.

Hawaii relies on liquid fuels more than any other state. Petroleum is used for electricity production; military activities; and ground, air, and marine transportation.



Economy

About **96% of the \$4 billion** Hawaii spends on petroleum-based transportation fuels each year goes to foreign interests. A local biofuels industry could potentially meet **10% of liquid fuel demand** by 2023—generating **2,000 jobs** and **\$0.5 to \$1 billion in annual revenue**.



Energy

The U.S. military seeks **increased flexibility** offered by **drop-in biofuels**. By 2025, the U.S. Pacific Command plans to use **biofuels to displace 25% of the 140–150 million gallons** of petroleum (aviation and marine) fuel it consumes annually in Hawaii.



Environment

Petroleum provides nearly **90% of Hawaii's energy needs** today. Locally produced **biofuels reduce vulnerability** to energy price volatility and mitigate the costs and environmental risks of transporting **1.8 billion gallons** of petroleum each year.



Feedstocks

Multi-crop strategies and greater utilization of idle land offer **sustainable biomass** solutions for Hawaii. **Algae** and **wastes** from the processing of sugarcane, pineapple, and macadamia nuts together with local grasses could provide **sustainable local biomass**.

Strategic policies and investments help *bridge the gap* between promising research and large-scale production of advanced biofuels.

In June 2015, Hawaii enacted state legislation requiring 100% of its electricity be generated from renewable resources by 2045. Advanced biofuels produced from local resources create sustainable transportation options and support this initiative.

The U.S. Department of Energy (DOE) awarded more than **\$57 million** to university and industrial partners in Hawaii to research, develop, and deploy sustainable bio-based fuels and products since 2005.

In 2014, BETO awarded **\$3.5 million** to Cellana, LLC in Kailua-Kona to develop a fully integrated, high-yield algae feedstock production system at its Kona demonstration facility.

Cutting-edge research and partnerships in Hawaii help to establish the state as a leader in the bioeconomy.

Cellana, LLC, — Kona Pilot Facility This six-acre facility examines large-scale production of fuels and feed from marine microalgae as part of the DOE-funded Cornell Marine Algae Biofuels Consortium.

Hawaii Natural Energy Institute (HNEI) — A research unit of the University of Hawaii at Manoa, HNEI works with partners inside and outside the university to develop cost-effective advanced biofuels and bioplastics.

High prices and reliance on petroleum fuels – imports 93% of its energy, 84% of consumption is from petroleum sources, and electricity costs 3 times the national average as most is generated from petroleum.



Strategically located to supply biofuels for military and commercial use.



Favorable growth conditions enable multiple crops per year for diverse biomass resources.



Commitment to clean energy, which supports sustainability and energy security.



Why Hawaii?



HNEI



KPF

For more information on the economic benefits of biofuels for Hawaii, visit: hawaiicleanenergyinitiative.org/storage/media/HCEI_RoadmapSummary_FINAL_ID-11909.pdf
energy.hawaii.gov/wp-content/uploads/2011/10/BiofuelsStudy_Act203_Dec2012.pdf
energy.hawaii.gov/wp-content/uploads/2014/11/HSEO_FF_Nov2014.pdf
For more information on the national security benefits of biofuels, visit: navy.mil/submit/display.asp?story_id=82044
acore.org/files/pdfs/Renewable-Energy-for-Military-Installations.pdf

For more information on Hawaiian biomass resources, visit: energy.hawaii.gov/wp-content/uploads/2011/10/Hawaii-Biofuels-Assessment-Report.pdf
For more information on Hawaiian clean energy initiatives and DOE partnerships, visit: hawaiicleanenergyinitiative.org/land/#section2
capitol.hawaii.gov/measure_indiv.aspx?billtype=HB&billnumber=623
energy.gov/eere/bioenergy/financial-opportunities
energy.gov/eere/articles/energy-department-awards-35-million-develop-cost-competitive-algal-biofuels