



Hawai'i Energy

Energy Efficiency Topics & Opportunities



Lily Koo
Business Energy Advisor

Why do we do what we do?



Tropical Cyclone Threat

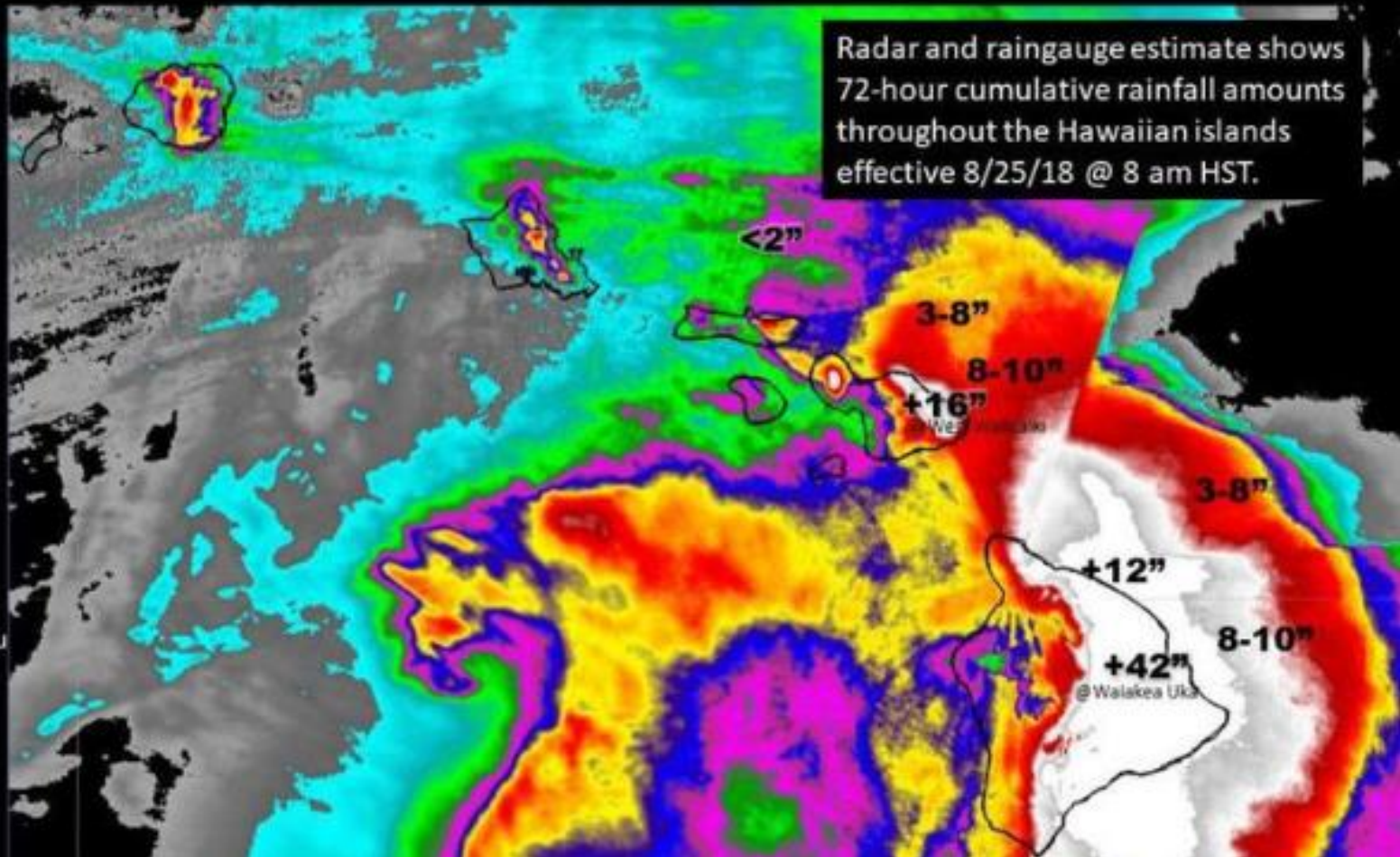
72 Hour Rainfall totals from Hurricane Lane

National
Weather Service
Honolulu

August 25th, 2018
issued at 11am HST

@NWSHonolulu

facebook.com/NWSHonolulu

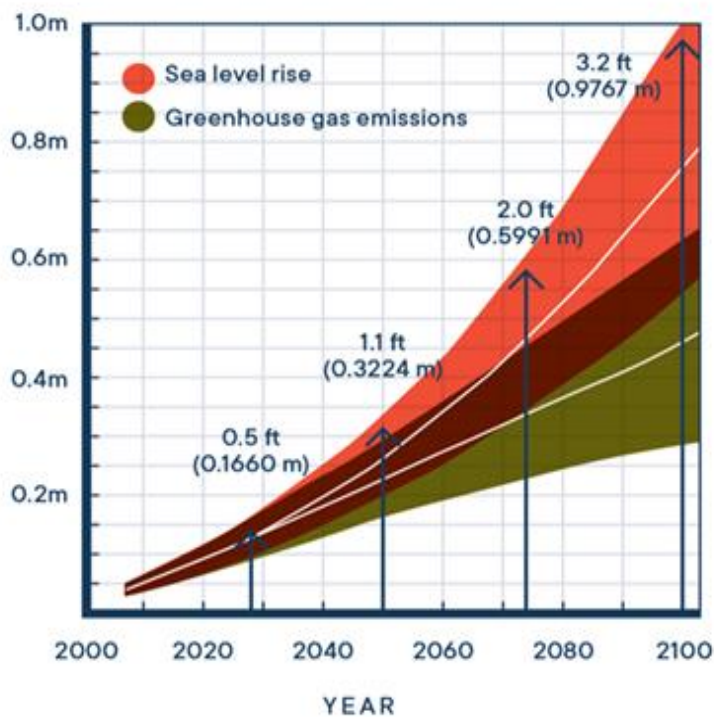




April 15, 2018 Hanalei Kauai

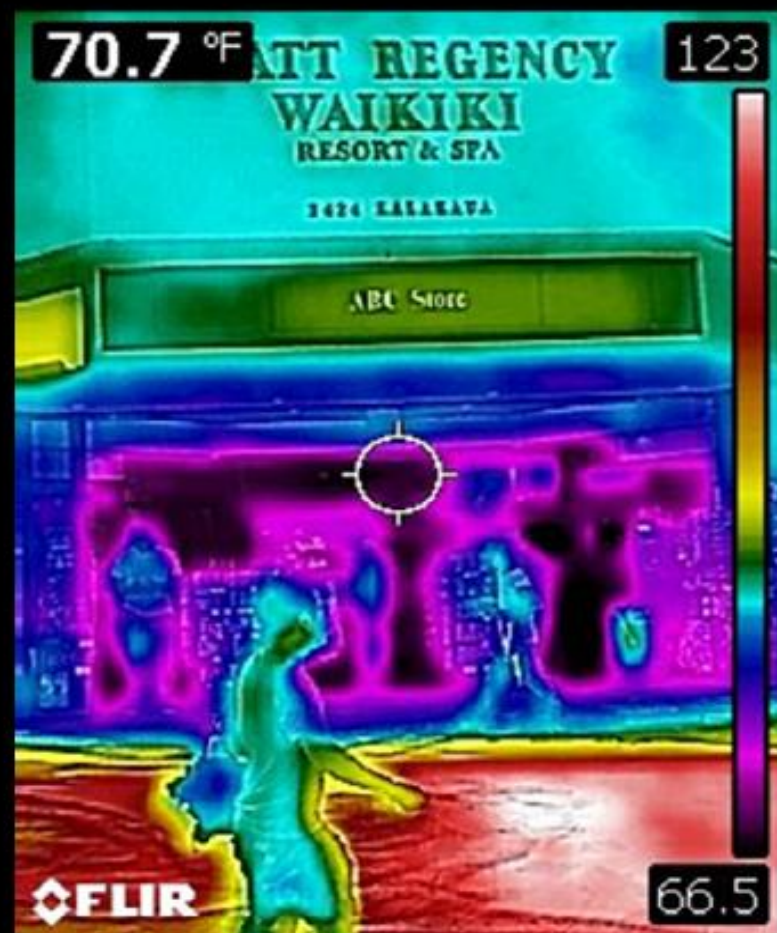


Hawaii Geothermal Power Plant
Shut down due to lava from
Kilauea volcano flows



Projected rate of global mean sea level rise under different greenhouse gas emissions scenarios from the Fifth assessment report of the Intergovernmental Panel on Climate Change.





How Big is the Energy Efficiency Resources?

“The world has to use energy at least 3% more productively each year in order to stay below 2 degrees.”

Amory Lovins
American energy expert



“We are investing to protect resources. Hawaii is showing you can have economic growth while combating climate change.” Governor Ige said.



Hawaii Energy

An aerial photograph of a stunning coastal landscape. In the foreground, a large, triangular rock formation covered in dense green vegetation juts out into the deep blue ocean. White waves are crashing against its base. To the right, another smaller rock formation is visible. In the background, steep, green cliffs rise from the shoreline, meeting a sky filled with white clouds. The overall scene is one of natural beauty and tranquility.

Heading towards our 100% clean energy future

HOW ARE WE DOING?

Business & Residential Program Accomplishments

Business	Budget / Target	Achieved	% of Target
Incentives	\$10,609,811	\$11,228,879	105.8%
First Year kWh	71,147,239	81,980,829	115.2%
Peak Demand Reduction	9,678	9,762	100.9%

Residential	Budget / Target	Achieved	% of Target
Incentives	\$8,465,057	\$7,872,384	93.0%
First Year kWh	58,997,632	56,900,070	96.4%
Peak Demand Reduction	11,762	11,213	93.7%

Key changes to Hawai'i's commercial energy code



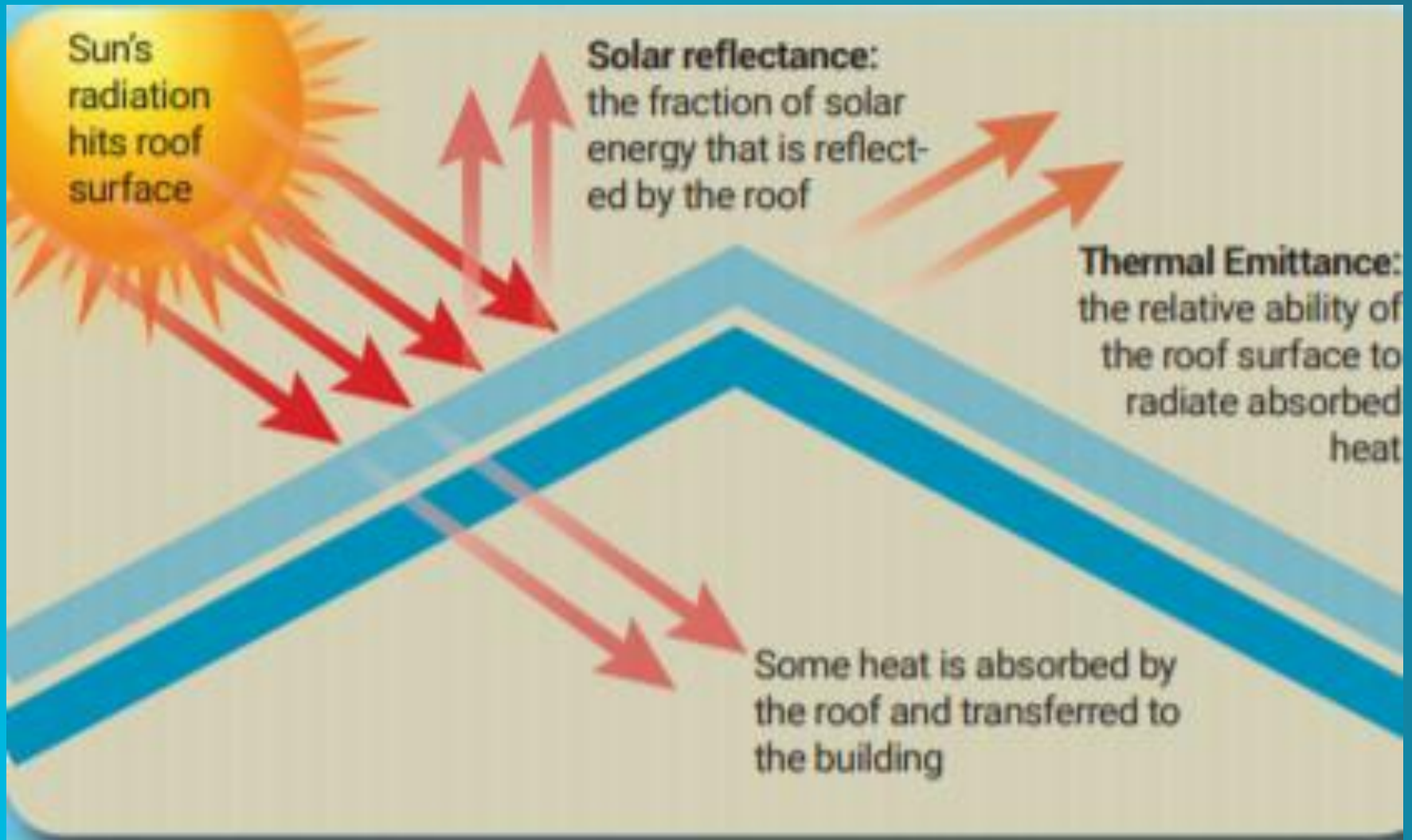
blue planet
FOUNDATION



Hawai'i Energy

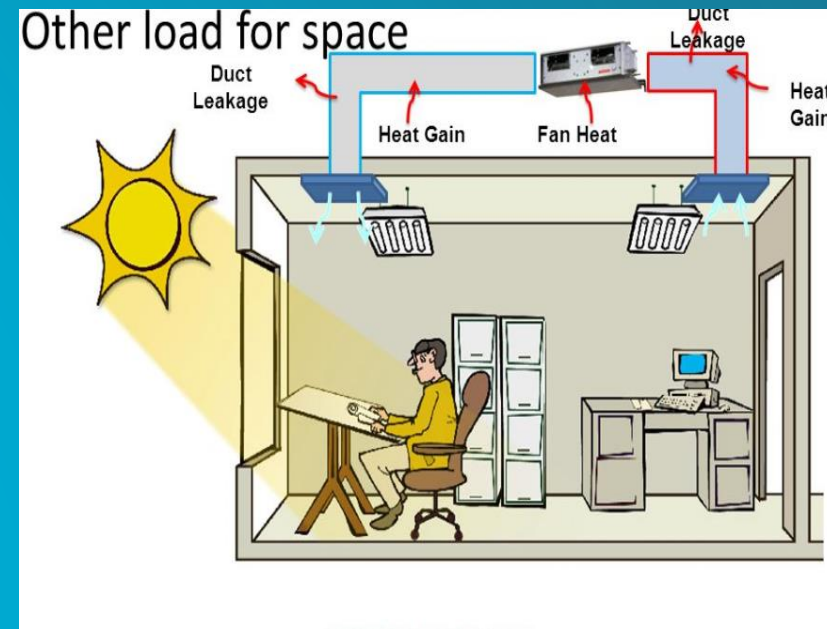
November 2017

IECC MANDATED REQUIREMENT



IECC MANDATED REQUIREMENT

- Cooling load be calculated;
- Equipment sizing;
- Thermostats
- Off Hour controls
- Demand control ventilation
- Ducts and plenums be sealed

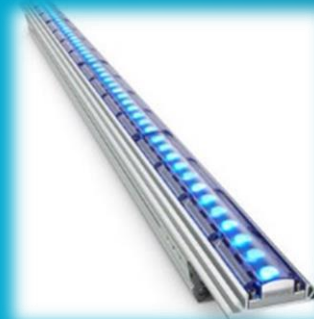


IECC MANDATED REQUIREMENT

- Timer
- Daylighting
- Occupancy Sensors
- Exterior
- Lighting Reduction
- Lighting Power Density (LPD) allowance

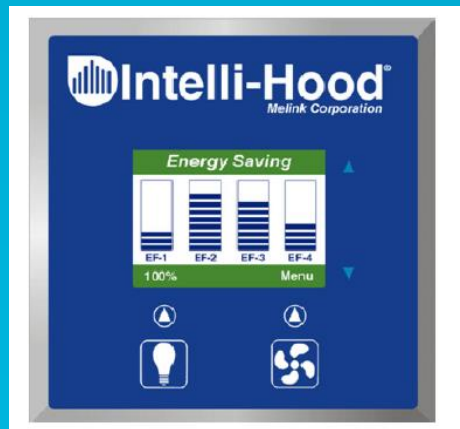


What are the hotels doing?



Kitchen Equipment Trend

- Kitchen Ventilation Exhaust Hood Controls
- Refrigeration goes greener
- Energy Star Ice Machine saves energy and water



CUSTOMIZED PROJECTS

- ✦ Incentive amount is based on projected first-year energy savings and are evaluated on a case-by-case basis

≤5 yrs. Measure of life \$0.08/kWh saved

>5 yrs. Measure of life = \$0.12/kWh saved

Peak Demand reduction, 5-9 pm \$125/kW

Pre-approval is required



HILTON GRAND ISLANDER

- Hotel Size: 143862 sq. feet
- Interior lighting
- Project submittal: lighting schedule, floor plan, submittals, watt per square foot calculation
- Lighting Rebate: \$136,130.26
- Energy savings: 999,273 kWh
- Annual Energy savings \$153,010

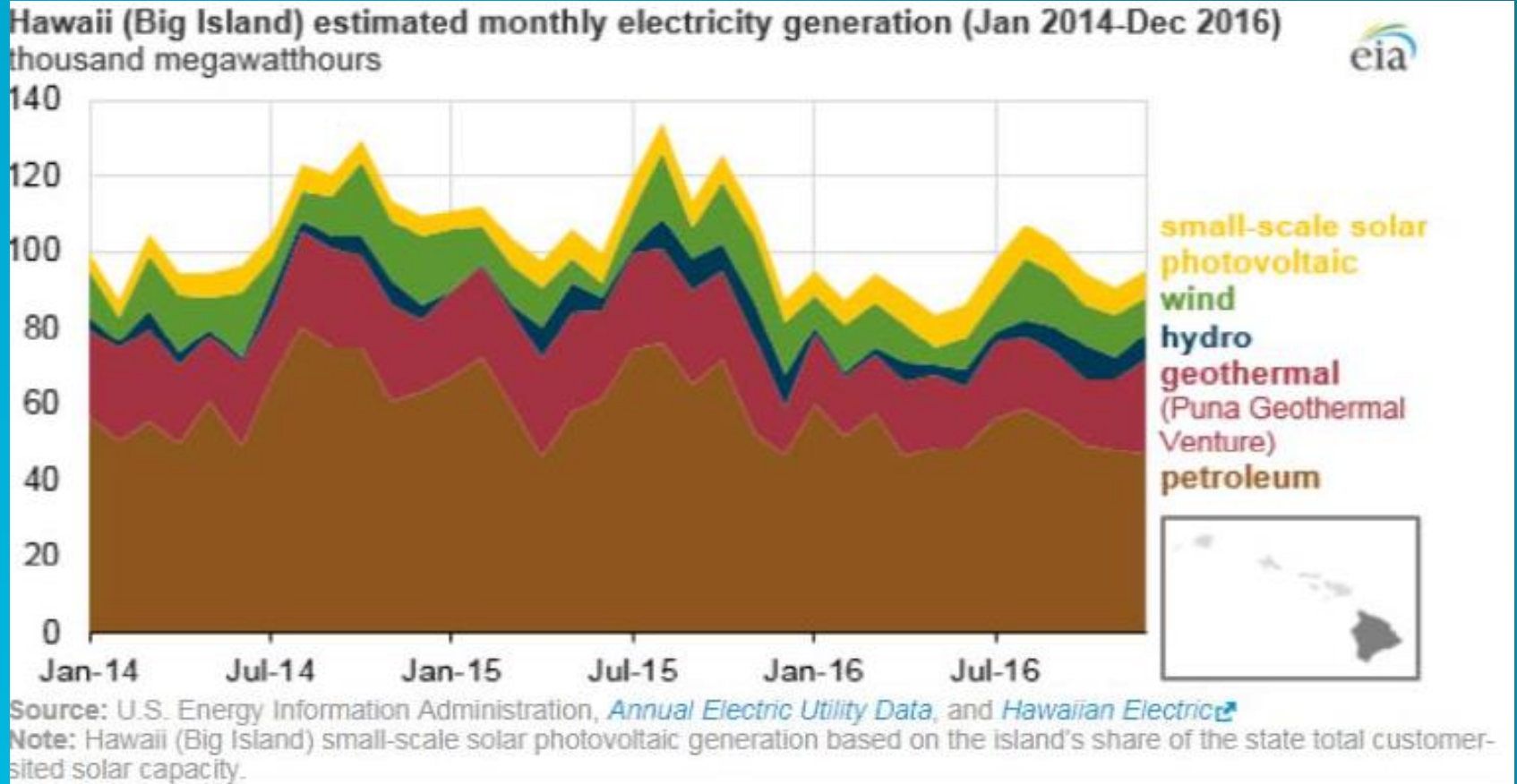


SMALL BUSINESS DIRECT INSTALL



Lighting upgrades for restaurants, small business on Electric rate schedule G or less than 5000 sq. ft. or common area in low income housing.

Rapid Response Plan for big island

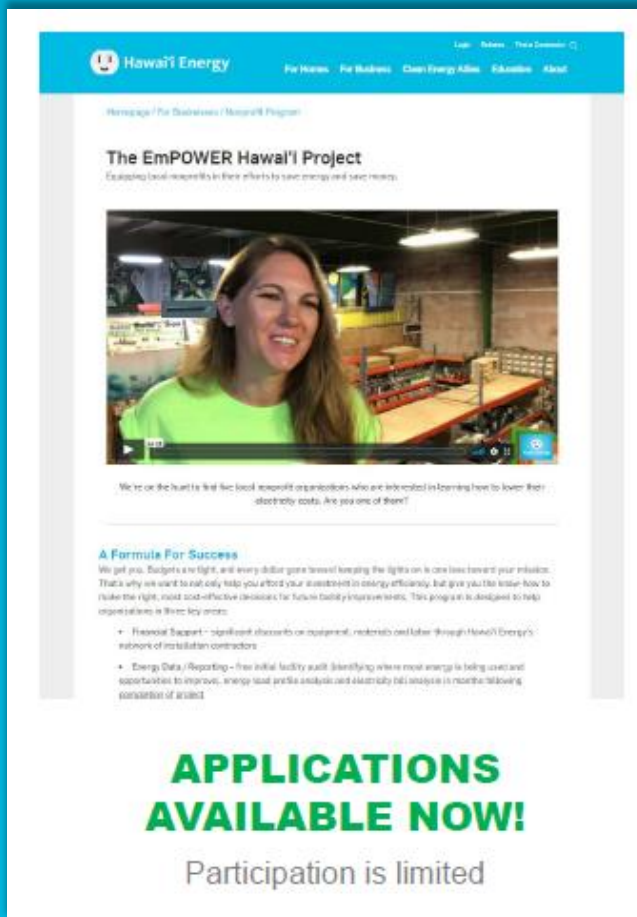


New Program

EmPOWER Hawai'i Project

A customized offering for **nonprofits**

- ***Initial consult*** to identify best opportunities for energy savings
- ***Assistance with developing an RFP***
- ***Educational sessions***
- ***HIGHER INCENTIVES***




Hawai'i Energy | For Home | For Business | Clean Energy Allow | Education | About

Homepage / For Businesses / EmPOWER Program

The EmPOWER Hawai'i Project

Empowering local nonprofits in their efforts to save energy and save money.



We're on the hunt to find local nonprofit organizations who are interested in learning how to lower their electricity costs. Are you one of them?

A Formula For Success

We get paid. Budget is a no-brainer, and every dollar goes toward keeping the lights on. It's one less toward your mission. That's why we want to not only help you afford your investments in energy efficiency, but give you the know-how to make the right, most cost-effective decisions for future facility improvements. This program is designed to help organizations in three key areas:

- **Financial Support** – significant discounts on equipment, materials and labor through Hawai'i Energy's network of installation contractors
- **Energy Data / Reporting** – free initial facility audit (identifying where more energy is being used) and opportunities to improve, energy load profile analysis and electricity rate analysis is made the following completion of audit

APPLICATIONS AVAILABLE NOW!

Participation is limited

Continuous Energy Improvement



Join our Clean Energy Allies

Support your business with technical workshops

Contractor-customer meetup

Chat about latest technology or services with customers



Smart Energy Trends

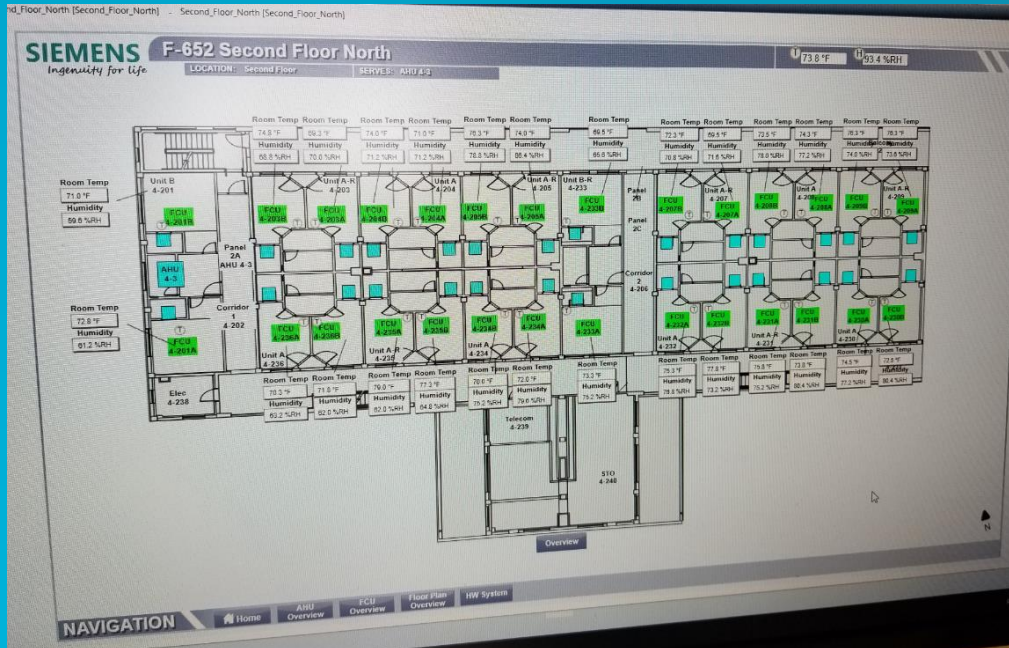


Smart Lighting



Hawaii Energy

Remote Monitoring & Controls of HVAC Systems



Smart Refrigeration

Smart defrost controller kits and evaporator fan motor controls are two major adaptive controls

- **diagnose unknown refrigeration problems - - warn operator before certain components fail**



Transformer

EE transformers
reduce heat and
energy load up to
60%;
Free up UPS
capacity.



Electric Vehicle (EV) Charging Network

- We are 2nd Highest Rate of EV adoption in the US
- Workplaces, commercial buildings and government agencies are taking steps to promote the use of EV drivers during day time to ease the load of peak load after 5:00 p.m.



Professional Trainings

Practical Energy Management for Buildings and Facilities (A15052)

This one-day course offers essential methods, systemic processes, and customizable tools and strategies for optimal energy usage in buildings and facilities, including mitigation of environmental consequences and reduction of operating costs. Learn how to troubleshoot existing systems, operate equipment effectively to save energy, and conduct building energy assessments and benchmarking. Course materials include checklists, sample audits, and graphical representations utilizing Microsoft Excel programs.

When and Where:

Saturday, January 26, 2019

8:00am – 4:00pm

Location: UH Mānoa Campus, Room TBA

Cost:

\$230 full tuition

\$75 for individuals who qualify for a subsidy from Hawai'i Energy. Call (808) 956-9249 to inquire.

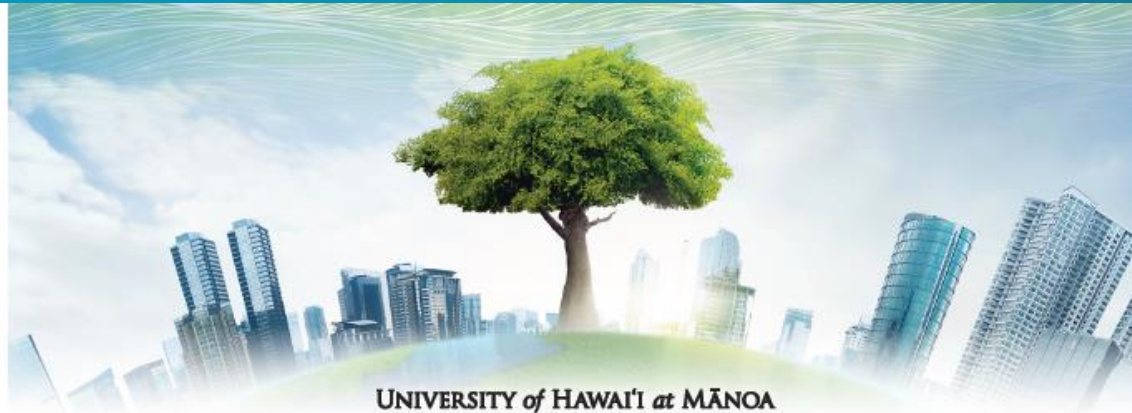
Register Now:

outreach.hawaii.edu/professional
or call (808) 956-9249.



Illuminating
ENGINEERING SOCIETY

**Solid-State Lighting Design and
Lighting Controls Workshop for
Architects and Design
Professionals**



UNIVERSITY of HAWAII at MĀNOA
Outreach College Professional Programs,
UH Maui College-Sustainable Living Institute of Maui, and Hawai'i Energy

Building Operator Certification (BOC®) Level I

Building Operator Certification (BOC®) is an ENERGY STAR® award-winning professional development and certification program focusing on energy efficiency, prolonging equipment life, and delivering cost savings through preventive maintenance. The BOC® program was created by the Northwest Energy Efficiency Council (NEEC).

Who Should Attend:

- Building operators (minimum 2 years experience) and maintenance workers
- Facility managers and support staff
- Facility engineers and support staff
- Mechanical and electrical contractors who support chiller plants
- HVAC technicians, electricians, operations supervisors, and operations technicians

When and Where:

Saturdays, 8:00am-4:00pm
Krauss Hall 012, UH Mānoa (in person and online)

March 2 & 9 (1001) Energy-Efficient Operation of Building HVAC Systems

March 30 (1002) Measuring and Benchmarking Energy Performance

April 6 (1003) Efficient Lighting Fundamentals

April 13 (1004) HVAC Controls Fundamentals

April 20 (1005) Indoor Environmental Quality

April 27 (1006) Low-cost Operational Improvements

May 4 (1009) Building Scoping for Operational Improvement

Cost:

Standard registration for all sessions is \$1,895.

Registration for all sessions with a Hawai'i Energy subsidy is \$249.

Register:

Details, deadlines, and application forms at
explore.outreach.hawaii.edu
or call (808) 956-9249 for registration assistance.

Questions:

Contact Alice Li Hagan at (808) 956-2037.



Hawai'i Energy helps educate island families and businesses about the many, lasting benefits of energy efficiency and conservation. Hawai'i Energy encourages and rewards smart energy choices which will allow our state to reach 100% clean energy faster and cheaper. To date, we have collectively saved the people of Hawai'i more than a billion dollars off their energy bills. Let Hawai'i Energy be your trusted energy advisor to help save you money and protect what makes Hawai'i so special.



The University of Hawai'i is an Equal Opportunity/Affirmative Action Institution

Partnering up with our energy programs



Water
Heating



Lighting



Appliances

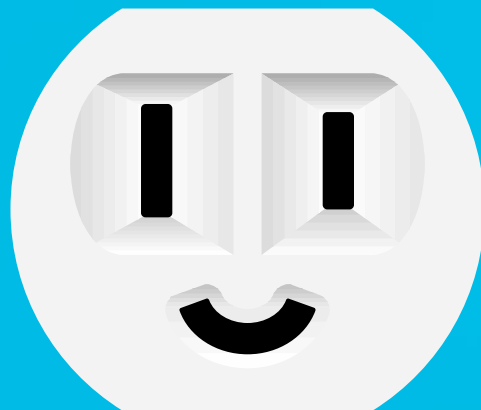


HVAC



Additional





Mahalo!

Lily Koo

(808) 848-8563 | kool@leidos.com

www.hawaiienergy.com



facebook.com/hawaiienergy



[@myhawaiienergy](https://www.instagram.com/myhawaiienergy)