



TECHNICAL ADVISORY GROUP

HAWAII PBF PROGRAM

October 8th, 2020
1:00 PM to 2:00 PM HST

via Zoom Webconference

FALL 2020 TAG MEETING

AGENDA

- 1:00 – Welcome
- 1:05 – Agenda and Meeting Objectives
- 1:10 – PBF Program Updates
- 1:30 – EM&V Activities
- 1:45 – TRM Measures
- 1:50 – Q&A
- 2:00 – Adjourn



TED POPE
ENERGY
EFFICIENCY
MANAGER
TEAM



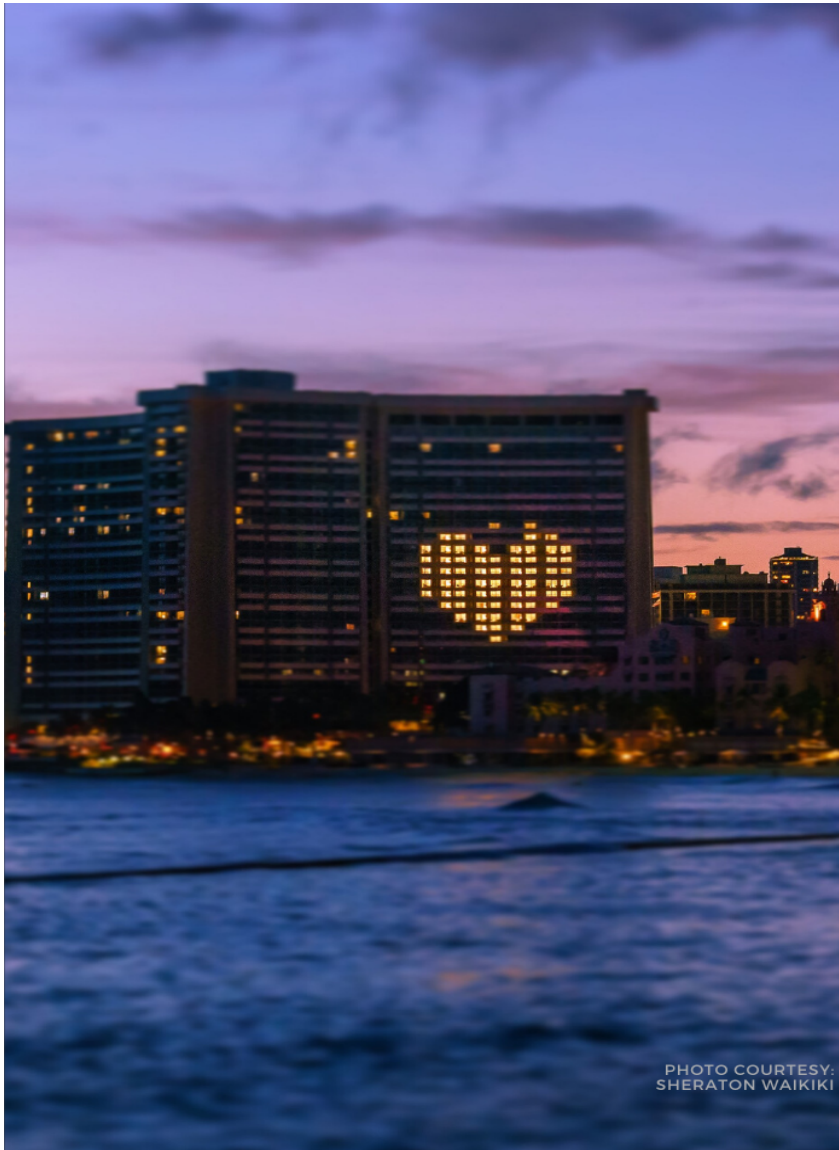
WELCOME
MEETING OBJECTIVES
EEM TEAM UPDATE



BRIAN
KEALOHA
HAWAI'I ENERGY



PBF PROGRAM UPDATES AND ANNUAL REVIEW



Hawai'i Energy

**Program Update
Technical Advisory Group
October 8, 2020**

Program Year 19 Recap



HAWAI'I ENERGY

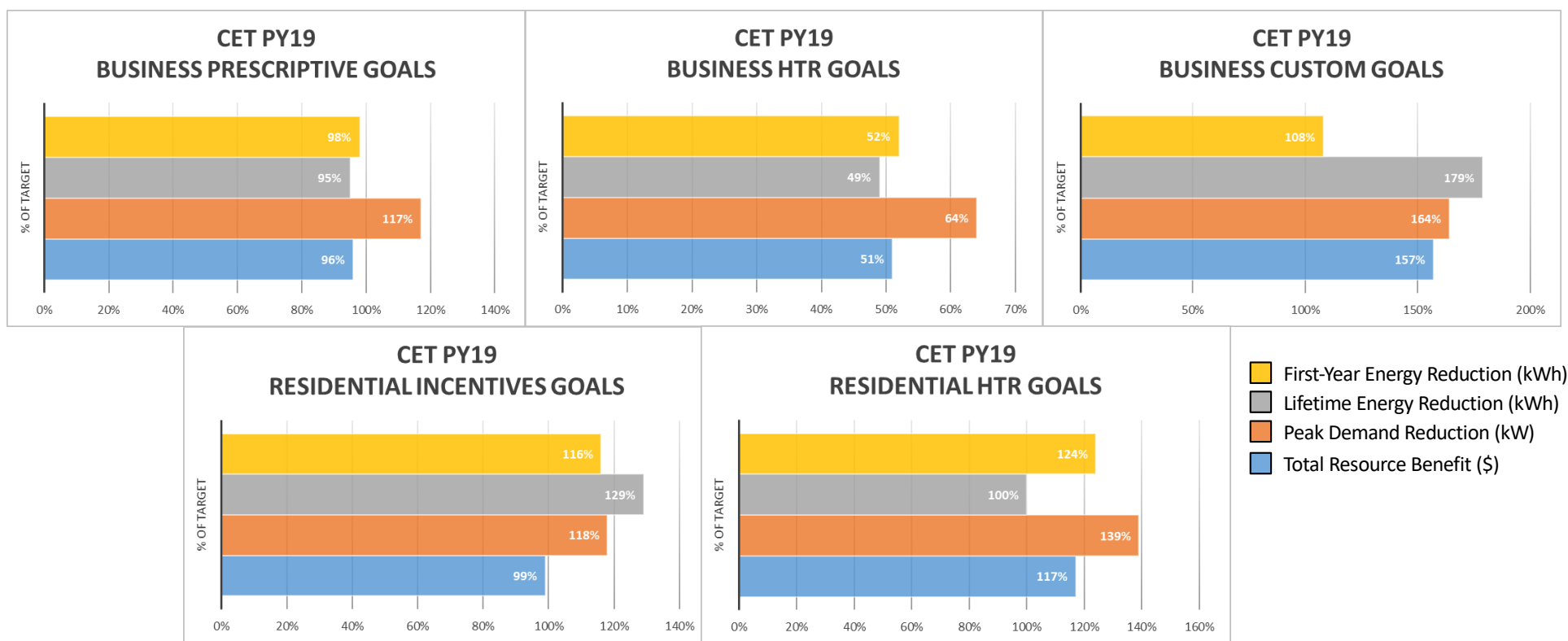
TRIENNIAL PROGRAM GOALS

1. **Clean Energy Technologies**
Accelerate Hawai'i's path to 100% through the installation of clean energy technologies
2. **Accessibility & Affordability**
Include everyone in the clean energy transition – ensuring access to programs and reducing the energy burden
3. **Economic Development & Market Transformation**
Fast-track workforce development and boost Hawai'i's economy



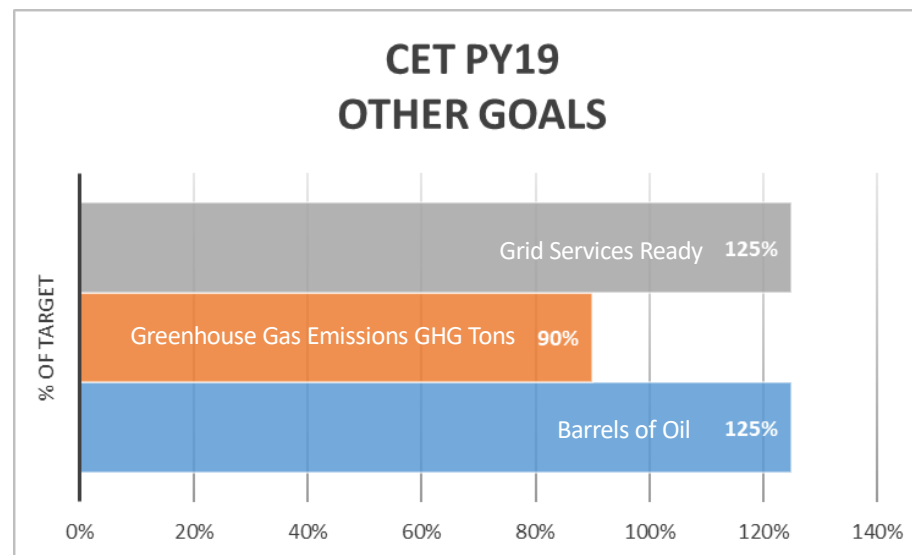
CLEAN ENERGY TECHNOLOGIES

At the end of PY19, we were successful in meeting or coming close to most of our goals, but struggled with Business HTR goals.



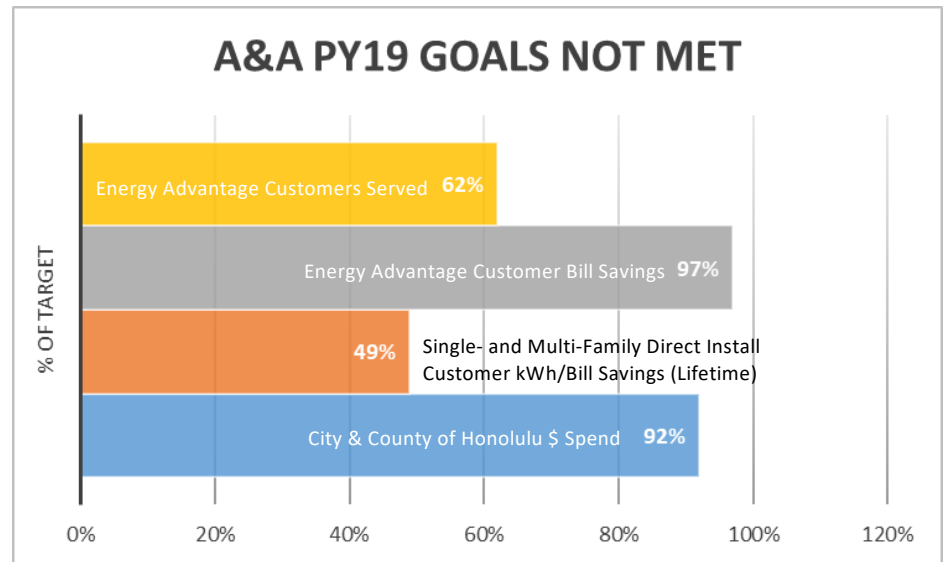
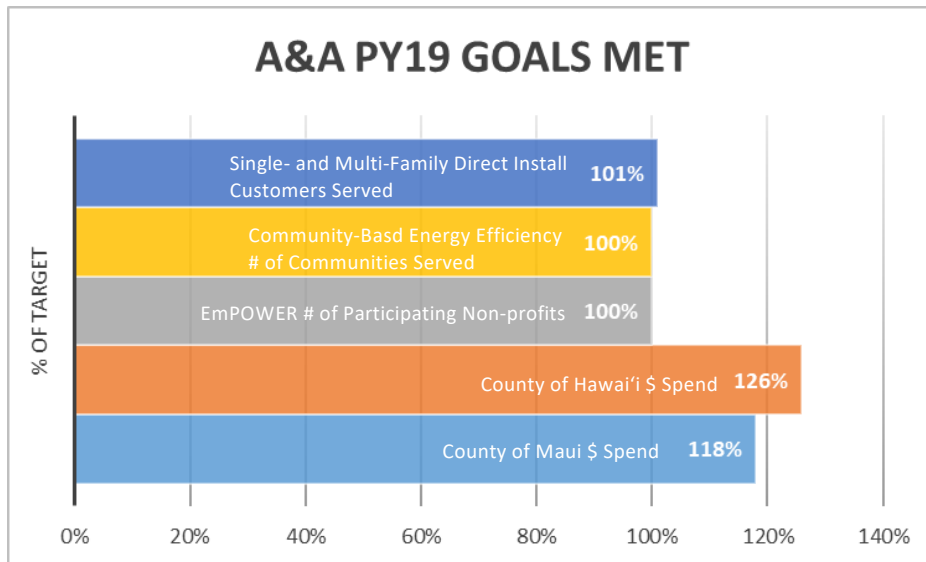
CLEAN ENERGY TECHNOLOGIES

At the end of PY19, we were successful in meeting or coming close to most of our goals, but struggled with Business HTR goals.



ACCESSIBILITY & AFFORDABILITY

At the end of PY19, our A&A program met its goals in some areas, but still fell short in others.



APPLIANCE TRADE-UP



Goal

Provide residents in hard-to-reach communities the opportunity to become more energy efficient via an ENERGY STAR certified appliance trade-in program



Updates

- Molokai: The Sustainable Molokai bulk appliance effort was extremely successful with almost 900 appliances ordered by the end of April (pictured, right)

"I cannot express enough the gratitude we have with the Hawai'i Energy Hui Up Program instituted on Molokai this year. Overall the program has been successful and it has been an excellent venture. Just as important, the program helped us sustain employment for our hard working crew, particularly through the Covid-19 Pandemic."



Chris Mebille
Vice President, COO
Makoa Trucking & Services



APPLIANCE TRADE-UP

- Hawai'i Island: Over 100 refrigerators were delivered to North Kohala residents
 - Included 47 refrigerators between two senior multi-family properties under the State's affordable housing inventory, Ainakea Elderly and Ainakea Seniors (pictured right)
 - Local nonprofit Partners in Development foundation coordinated the outreach, enrollment and delivery of the appliances
- O'ahu: Two programs at affordable housing projects
 - Kukui Tower – replaced 17 refrigerators as part of renovation work
 - Kalihi Valley Homes – replaced 90 refrigerators (this project also opened up potential new opportunities to provide maintenance service for solar thermal water heaters and/or provide direct installations of new water heating systems)



COMMUNITY PILOTS



Appliance Trade-up

APPLICATIONS OPEN UNTIL SEPTEMBER 15, 2020
Or until supplies last. *Don't Delay!*

We want to remove old, energy-wasting appliances. You'll save on monthly energy costs over the lifetime of the appliance AND save upfront with a deep discount on the new appliance too. Since ENERGY STAR® products use at least 20% less energy than regular models, replacing a ten-year-old refrigerator with an ENERGY STAR® model could save you over \$200 every year. Together, let's pave the way for lighter consumption of clean energy.

AVAILABLE REFRIGERATORS AND FREEZERS

		
17.5 cubic foot Refrigerator	21 cubic foot Refrigerator	17.5 cubic foot Freezer
\$250	\$750	\$250

These prices include tax, shipping and delivery right to your front door! Upon trade in, we dispose of your old appliance and make sure it's recycled properly. Not only are you saving energy and money, you're helping the environment too!

FOR MORE INFORMATION, VISIT: HawaiiEnergy.com/North-Kohala

TO APPLY: Call Partners in Development Foundation,
Cicely Isabal at (808)319-8596

Energy Smart 4 Homes

SIGN UP TO SECURE YOUR SPOT BY SEPTEMBER 30, 2020
FREE installation of energy-saving products

Lighten your household's monthly energy usage even more and feel good knowing it reduces your community's footprint too. Sign up to receive FREE energy-saving LED light bulbs, high efficiency showerheads and aerators, and power strips that reduce your energy costs. You can save up to \$150 every year through our Energy Smart 4 Homes direct install program. One of our trained professionals will install your items to make it extra easy for you!



With COVID-19, we proceed with utmost care and caution regarding equipment installation and delivery.

FOR MORE INFORMATION, VISIT: HawaiiEnergy.com/North-Kohala

TO SIGN UP: Complete the online application at HawaiiEnergy.com/North-Kohala
Or Call Partners in Development Foundation,
Cicely Isabal at (808)319-8596



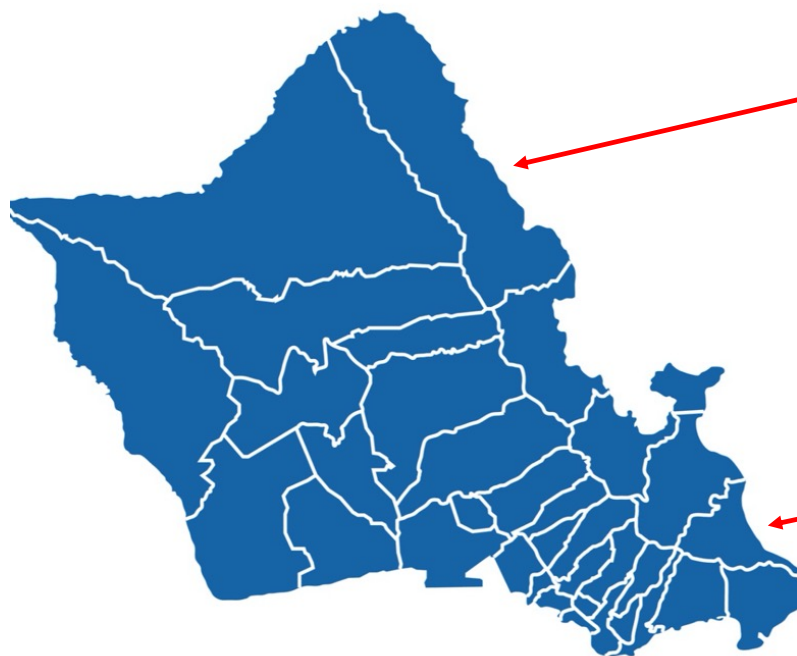
Toni Withington, resident of Hawai'i and recent participant in Hawai'i Energy's Appliance Trade-Up



Hawai'i Energy

hawaiienergy.com

CURRENT O'AHU COMMUNITY PILOTS



Ko'olauloa:

- 4 zip codes
- 3,300 households

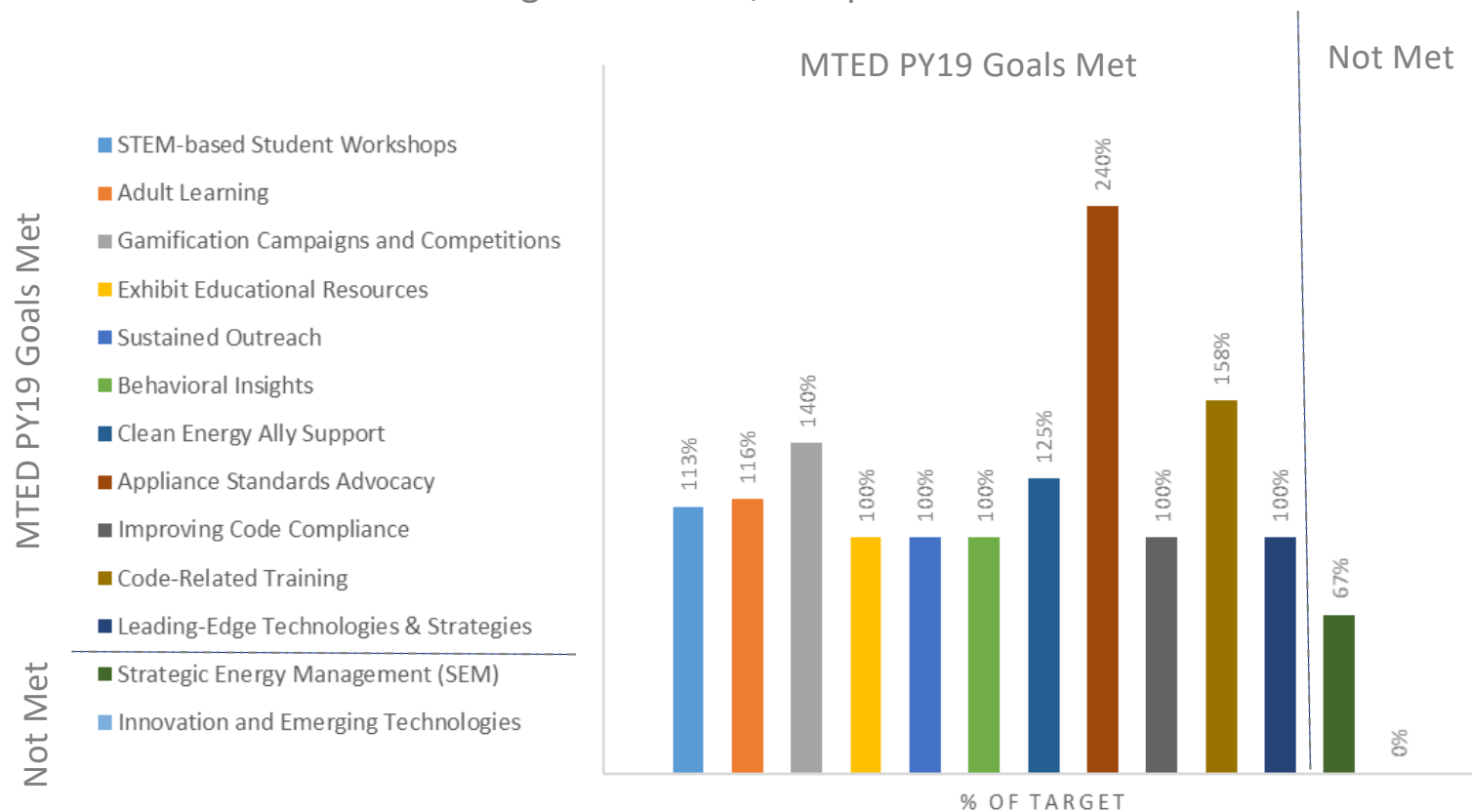
Waimanalo:

- 737 Department of Hawaiian Home Lands households

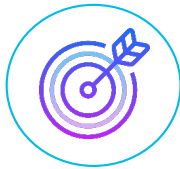


MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

At the end of PY19, our Market Transformation program successfully met the majority of targeted metrics, except in two areas.



REALTORS



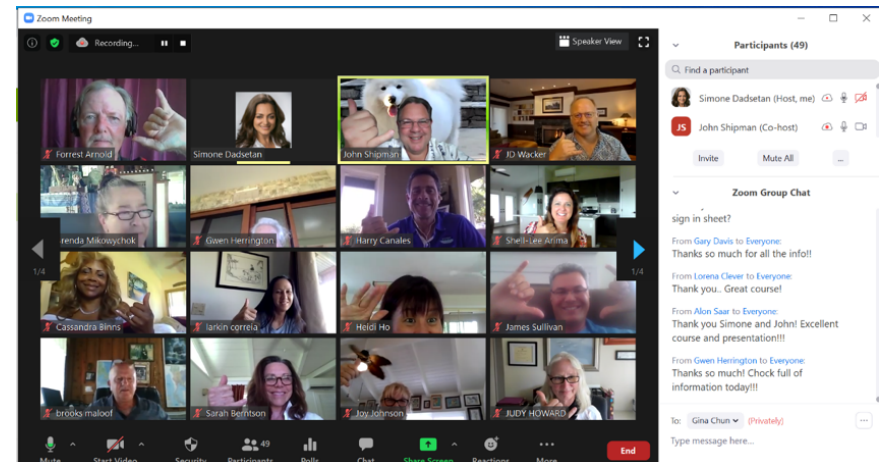
Goal

Increase the knowledge base of Realtors® around how to sell, purchase and properly value energy- and resource-efficient homes



Updates

- Transitioned content to an online format and adjusted the number of days to better accommodate online learning (pictured right)
- Green Designation trainings were held in April (for Maui), May (for O'ahu) and June (for Hawai'i Island)
- Reached a total of 113 Realtors



POLICY

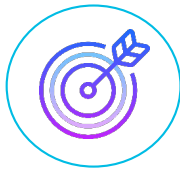


Updates

- Honolulu City Council – Bill 25 (regarding county amendments to the state energy conservation code)
 - Provided testimony and collaborated with the City's Office of Climate Change, Sustainability & Resiliency
 - Brian Kealoha joined the June 4th bill signing where he promoted our EVCS affordable housing incentive (*pictured, Brian far left and Mayor Caldwell in yellow*)
- Hawai'i Energy and the State Energy Office quickly organized a webinar to highlight the new Bill 25 requirements to a large audience of engineers, architects and construction professionals. Also provided a revised checklist to assist designers with code compliance



DEMAND RESPONSE READY



Goal

Provide foundational investments to promote grid service capable demand side resources that can be installed today, so that all customers can participate in DR programs offered by the utility

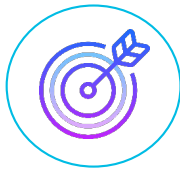


Updates

- GIWH installs with Shifted Energy halted throughout April, May and June
- Year-end installations totaled 994 in low-income, rental, C&C municipal, senior, and workforce housing
- Initiated community specific recruitment with Hawai'i Energy in Waimanalo focusing on holistic energy education and integrated demand side management approach



ENERGY STORAGE



Goal

Increase adoption of customer energy storage systems to provide customer and grid benefits including: bill savings, resilience, peak load shifting and shaving

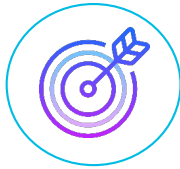


Updates

- Continued to develop residential energy storage pilot design in light of COVID impacts
 - Focus on economic stimulus and benefits
 - Developing program rules/requirements, application design, aging report process, and online funding tracker
 - Summary of proposed program drafted for input
- Industry outreach to commercial developers to identify project delays for potential support



EVCS INCENTIVE PROGRAM



Goal

Launch the state's incentive program for the installation of electric vehicle charging stations as part of efforts to reduce carbon emissions from transportation



Updates

- Total payout from Jan. 1-June 30, 2020: \$55,500
 - In Q4: total payout was \$7,500 for one Level 2 rebate on O'ahu and one on Hawai'i Island
- Applications – 9 new applications; 2 withdrawn due to COVID-related budget concerns
- Current pipeline looks to expend all allotted funds



Program Year 20 – A New World



COVID RECOVERY PLAN



While only entering the second year of the Triennial Plan, continuing with business as usual would not work.

Hawai'i Energy produced a recovery plan that addresses our response to COVID-19 and helping Hawai'i's economy recovery.

SUPPORT

TYPES OF ASSISTANCE CEAS WANT FROM Hawai'i Energy

INCENTIVES AND INVESTMENTS



Increase incentives
for work completed
during this time



More advertising
and marketing of
CEA businesses

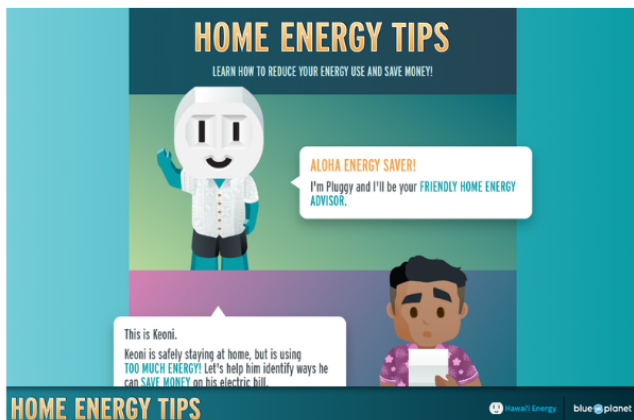
OUTREACH TO CUSTOMERS



Promote CEAs to
customers via
advertising/outreach



Inform customers
that CEAs are an
essential
business



EFFICIENCY UNLOCKED GAME



TV NEWS APPEARANCE



INFORMATION & TIPS

Home energy-saving tips were shared via news stories, advertising, website and social media



INCREASED INCENTIVES

Customer Mail-In Rebates

- Refrigerator - Trade Up \$250, Purchase \$100
- Window A/C - Trade Up \$100, Purchase \$50
- Pool Pump - \$250
- Heat Pump Water Heater - \$500
- Solar Attic Fan - \$100
- Whole House Fan \$150

Contractor Rebates

- Solar Water Heating, Solar PV Water Heater, Solar Interest Buy-down - \$1,250 O'ahu, \$1,500 Neighbor Islands
- Solar Water Heating Tune Up - \$200
- Residential A/C - Installation \$250-\$350
- Central A/C Retrofit - \$1,500



KEIKI RESOURCES

An assortment of energy-themed activities for children, including coloring pages, word searches and crossword puzzles



BUSINESS NEWSLETTER

Our contractors are still available for work

With less traffic going into businesses, it's a great time to catch up on projects that may have been on your list, if you have the means to do so at this time. Our contractors are still working and are prepared to support you in reducing your long-term energy costs, while doing all they can to maintain the health and safety of everyone involved.

[FIND A CONTRACTOR](#)

SECTOR TIPS GUIDESHEETS

Energy Management Best Practices During COVID-19
FOR GROCERY STORES

Grocers, we understand that you're experiencing greater demand. As an essential service, it's more important than ever to make sure operational expenses like electricity don't affect your ability to stay open. Follow these quick tips to save energy and money right now:

- Secure refrigerators and freezers are closed and sealed
- Turn off or unplug hot box appliances not currently in use
- Set thermostats one or two degrees higher than normal
- Dim or turn off lights outside of operating hours

FUN FACTS:

- LEDs increase 75% illumination in response to less operational input (time and energy)
- LEDs have been known to extend and 120-watt general heat for a whole year or more!

When you're ready to upgrade to equipment that will reward you with longer-term energy savings, better productivity, and even improved safety—equipment like LED lighting or ENERGY STAR appliances—we'll be ready to assist you.

Most Commonly Upgraded Items (with each back from Hawaii Energy):

- LED lighting in-store and in parking lot
- Auto-Save of the Water Controls
- Refrigerator/Freezer fan coils and EC motors
- ENERGY STAR Ice Machines
- Demand-controlled kitchen ventilation hoods for cooking areas

We will continue to be here as your trusted resource on energy efficiency measures and more. If you need guidance on how to manage your energy usage and lower your electricity bill, you can visit [hawaiienergy.com](https://www.hawaiienergy.com) to contact your Energy Advisor at any time.

MAUI & MOLOKAI COUNTY
Maui County
Molokai County
(808) 546-5026

WAILUA DISTRICT
Maui County
(808) 578-2337

KAHOOLAWE DISTRICT
Maui County
(808) 571-2171

Hawaii Energy



EDUCATION & TRAINING

Professional development workshops offered via virtual training sessions, covering topics such as lighting, energy codes and air quality



EXTENDED INCENTIVES

Extension of incentives for commercial trade allies through September 2020



NEW INCENTIVE

Piloting a Commercial New Construction rebate



SECTOR GUIDES

Sector guidesheets provide energy-saving tips for specific industries to help them manage energy and save money



NEW TECHNOLOGIES

Exploring new technologies, including HVAC UV-light disinfection and improved filtration



**DO
MORE**  **GET
MORE**

BUNDLED INCENTIVES

THE GIST

SAVE MORE ENERGY, GET MORE REBATES

Don't do just one efficiency project. Do yourself a favor and package a couple of projects to save time, money, and energy. In return, we'll double or triple the rebate for qualifying projects.



Hawaii Energy

hawaiienergy.com

Energy Relief Grant



COVID Assistance

Business that received Paycheck Protection Program (PPP) or Economic Injury Disaster Loan (EIDL) disbursement



Nonprofit

501(c)3 nonprofit organization



Energy Advantage

HECO Rate Schedule G, facility < 5,000 sq. ft., or multifamily affordable housing



Program Participants

PY20 EmPOWER or PY20 SEM program participants



Customers may apply for 100% cost of project up to \$25,000



1st Round of Applications were due on Sept. 30, 2020



Limited funding available



Indoor Air Quality



<https://hawaiienergy.com/hvac-resources>

Build Pipeline of Projects



Energy Audits

10% bonus incentive still in effect
for ECM installed w/in two-years



Retro-Commissioning

Limited time increase to 40¢ per sq. ft. up to
\$40,000, capped at 85% of project cost



NEW INCENTIVES TO ADDRESS MARKETPLACE NEEDS



**Retro-Commissioning
increased incentive**



**Commercial New
Construction**

Two Approaches:
Whole-building Energy
Model or Individual
Systems



**Hotel Room EMS incentive
increased up to \$250/unit**





Mahalo!

Stay Connected

Oahu: 537-5577 (Residential) 839-8880 (Business)

Neighbor Islands: 1-877-231-8222 toll-free

www.hawaiienergy.com



facebook.com/hawaiienergy



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



MARY SUTTER

ENERGY
EFFICIENCY
MANAGER
TEAM



EVALUATION MEASUREMENT AND VERIFICATION (EM&V) TOPICS

EM&V (JULY 1, 2020 TO JUNE 30, 2021)

Prospective

9 studies that may use past data, but inform the future

5 of the 9 are possible studies (under consideration at the Commission)



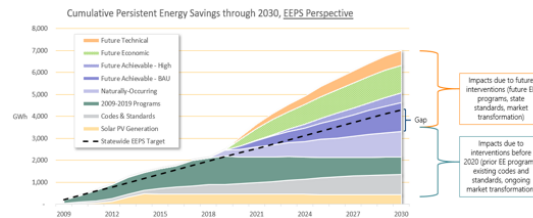
Retrospective

3 studies that answer what happened in the past



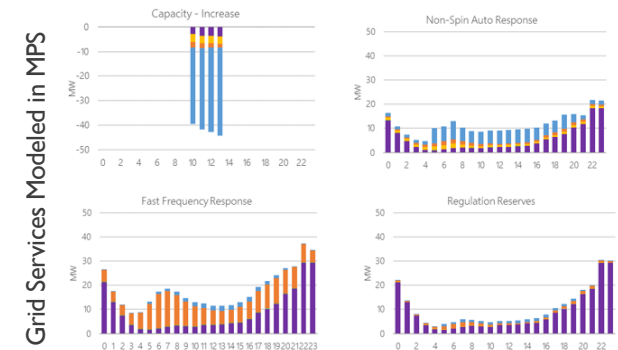
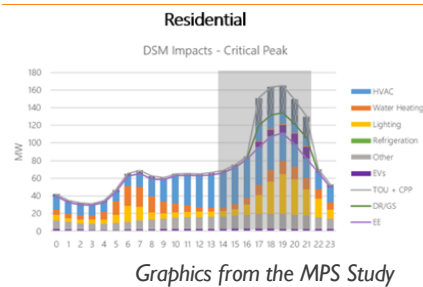
MARKET POTENTIAL STUDY INFLUENCES FUTURE EM&V STUDIES

- The PBFA program portfolio is a significant component of meeting EEPS goals



- There are measures and interventions that can significantly support grid services

- The study developed data that can be used to support ongoing program design and strategic planning



PROSPECTIVE EM&V INFORMATION

Building on the Market Potential Study

Possible Studies

1) Expanded MPS Analysis

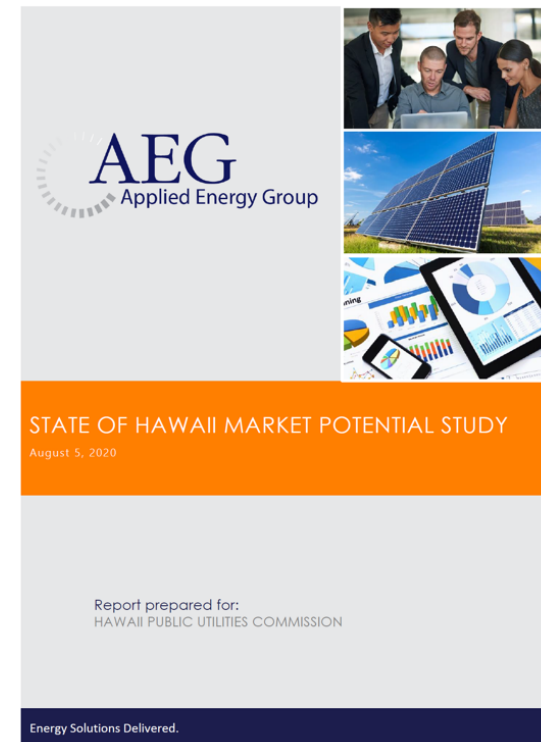
- What are the hourly costs and benefits of energy efficiency?

OR

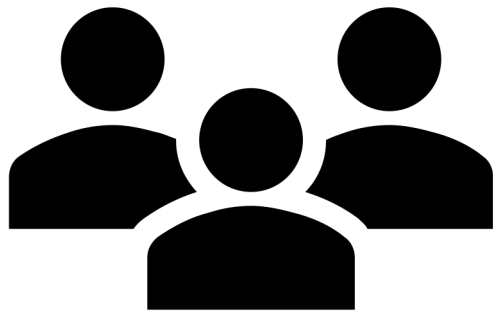
- What are program costs associated with market potential? (e.g., apply supply cost curves)

2) Integrated Grid Service Program Research

- What are current or new measures that would be good targets for a PBFA program that integrates grid services? Which measures are better for specific islands?



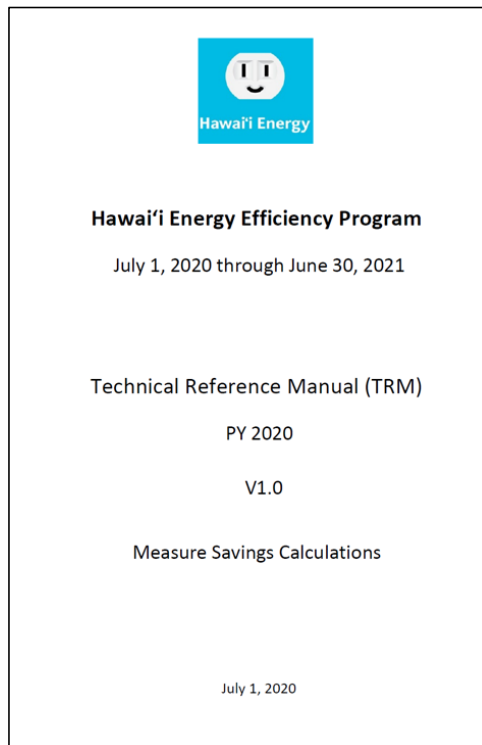
PROSPECTIVE EM&V INFORMATION (BEYOND MPS)



Possible Studies

- 3) Evaluation of Collaboration → What are potential approaches to evaluating effectiveness of collaborations?
- 4) Estimates of New Metrics for TRM Integration Impacts Tracking → What are the values of cumulative persistent energy savings, barrels of oil avoided, and CO₂ emission reductions from Hawai'i Energy's efforts? (Document and update current metrics.)
- 5) Solar Water Heater NTG Study → How much are customers influenced by Hawai'i Energy when they buy a solar water heater?

PROSPECTIVE EM&V INFORMATION – CONT'D



- 6) TRM (*mid-year PY20*) → What are new and modified measures in the TRM since the Commission last accepted the TRM in June of 2020 (for application in PY20)?
- 7) TRM (*PY21 updates*) → What are new and modified measures in the TRM (for application in PY21)?
- 8) Phase II C&S Attribution → How much did Hawai'i Energy influence new Hawaii standards?
- 9) Peer Stoppage Analysis → Did stopping home energy reports cause households to consume more energy, on average, than households that continued receiving the reports?

RETROSPECTIVE EM&V INFORMATION

- 1) PY19 Verification → Did Hawai'i Energy meet their multiple performance indicator targets? What did we learn and how can the programs be improved?

Documentation of Evaluation Efforts

- 2) CY20 Annual EM&V Report → What are key findings from each of the 2020 EM&V studies?
- 3) CY20 History Report → What EM&V has occurred since 2009?

PY19 VERIFICATION STUDY

There are notable differences from previous studies

- No onsite data collection (due to COVID-19)
- More PBF performance indicators to verify. New indicators are:

Clean Energy Technologies

- Lifetime Energy Reduction
- Grid Services Ready
- Greenhouse Gas Emissions / Barrels of Oil Saved

Affordability & Accessibility

- Community Based Energy Efficiency
- Empower Hawai'i Project

Economic Development & Market Transformation

- Appliance Standards Advocacy

MULTIPLE STUDIES, TWO REPORTS

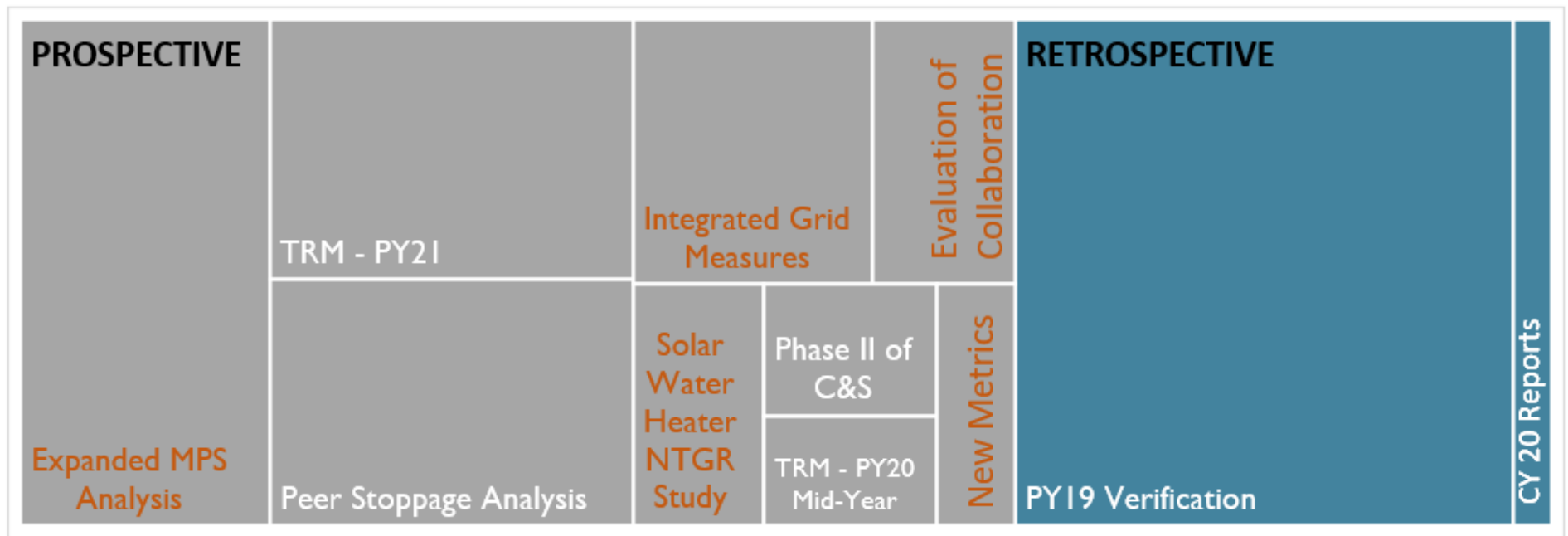
Most Recent Calendar Year Efforts

- Describes the most important findings (and implications) from studies
- In the 2019 edition, moved from program year to calendar year so now includes findings from studies completed in the calendar year as well as the purpose for studies initiated in the calendar year
- Calendar Year 2019 EM&V Report

Historic Efforts

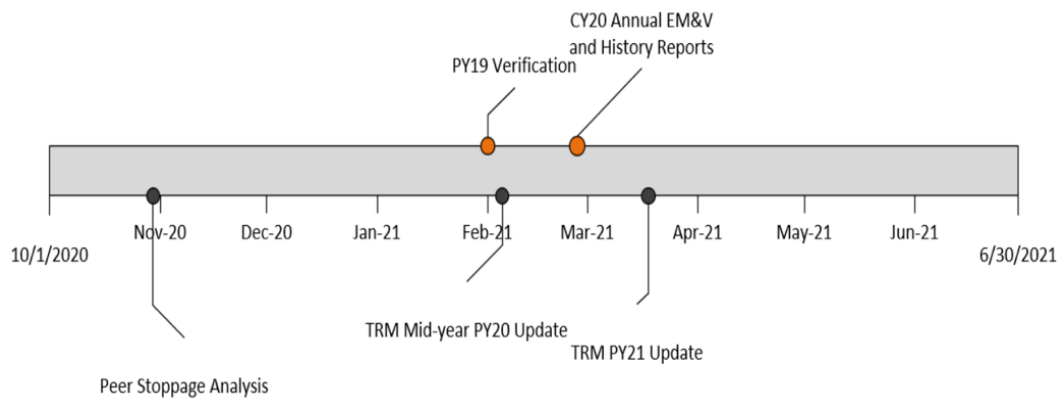
- 10+ years of EM&V summarized in this document (so only need to read the latest document)
- Describes data collection and analysis efforts that occurred each year
- In the 2019 edition, moved from program year to calendar year
- In the CY19 file, starts to show efforts that are initiated in the calendar year as well as completed studies
- Calendar Year 2019 EM&V History of Annual Research

EM&V STUDY COSTS (1.6% OF PY20 PROGRAM COSTS)



Possible studies are indicated by orange text

TIMING OF INFORMATION (FINAL REPORTS)



Studies to be completed by June 30, 2021.

Exact timeline not yet determined.

- Expanding on the MPS
- Integrated Grid Measures
- Evaluation of Collaborations
- New Metrics
- Solar Water Heater NTG

PROVIDING IDEAS AND THOUGHTS ABOUT THE EM&V

The Energy Efficiency Manager team is creating a list of EM&V for possible future research. We welcome your ideas for future studies and your thoughts on the studies presented today. Please connect with us via email:

- Mary Sutter (mary@grounded-research.com)
- Ted Pope (TedPope@2050partners.com)
- Sarah Crowe (SarahCrowe@2050partners.com)

MARY SUTTER

ENERGY
EFFICIENCY
MANAGER TEAM

KELLY
PARMENTER

APPLIED
ENERGY GROUP

TRM MEASURES

THE HAWAI'I TECHNICAL REFERENCE MANUAL (TRM) A BRIEF REMINDER

- Collaborative effort created a **TRM framework** to guide the development, maintenance, and application of the TRM
- The **Hawai'i Energy TRM**
 - provides methods, formulas, and default assumptions for estimating gross customer-level energy and peak demand impacts from energy efficiency measures offered by Hawai'i Energy
 - provides key metrics for determining net program-level energy and peak demand impacts, as well as the lifetime monetary value of those impacts
- **Developing measures for inclusion in the TRM relies on stakeholders** to help ensure that the measures are relevant as the Hawai'i Energy portfolio of measures changes, as well as to help ensure the measure savings are sufficiently accurate

HAWAI'I ENERGY
Technical Reference Manual Framework
Version 1.1

June 1, 2020
Effective: July 1, 2019
(supersedes version 1.0)



WHERE SHOULD WE UPDATE THE TRM FOR PY20?

Three measures categories are already in the queue for being updated and used in PY20:

- General Service Lamps: What is the most appropriate baseline for general service lamps accounting for federal requirements (that is, what would be available for customers to buy in Hawaii market based on the federal standards)?
- HVAC: Can commercial and residential AC units under 5 tons use a different requirement than the PY19 TRM to determine program qualification?
- Commercial Refrigeration: What are savings for evaporator motor controls, floating head pressure controls, or adding doors onto open cases?

WHERE SHOULD WE UPDATE THE TRM FOR PY21?

We have ideas from the past as well. The first three are also top savings measures shown in the Market Potential Study.

- Specialty bulbs: What are savings from specialty residential lamps (e.g., decorative, reflectors, directional), some of which may also be non-preempted from federal standards?
- TVs: What should savings be for current ENERGY STAR TV measures to reflect recent baseline and efficiency cases?
- Power Strips: What should savings be for the current residential advanced power strip measure to reflect a more recent baseline?
- Window Films: What are savings for nonresidential window films or glazing?

To become involved or send suggestions, email Kelly Parmenter (kparmenter@appliedenergygroup.com) and cc Mary Sutter (mary@grounded-research.com)

QUESTIONS?

Please contact Ted Pope at 510-462-0091 or tedpope@2050partners.com. Meeting materials will be posted on www.HawaiiEEPS.org