
TECHNICAL ADVISORY GROUP

HAWAII PBF PROGRAM

February 28, 2024
2:00 p.m. to 4:15 p.m.

Hawai'i Energy offices at 45 N. King Street, Suite 500, Honolulu (with virtual option via Teams)

REMINDERS

- Remote participants, please mute your lines when you aren't speaking – we'd like to keep the lines open so you can easily join the conversation
 - You may also use the “raise hand” or chat functions
- Please identify yourself and your organization when speaking
- We encourage participants to ask questions and contribute their constructive comments
 - Silence during a discussion implies agreement

COMMISSION WELCOME

AGENDA & INTRODUCTIONS

JENNIFER BARNES

ENERGY EFFICIENCY MANAGER TEAM

AGENDA

- 2:00 – Agenda & Introductions
- EM&V:
 - 2:10: Draft Findings from PY22 Verification
 - 2:30: Technical Reference Manual Update
- 2:50 – Progress update on Hawai‘i Energy PY22-PY24 Triennial Plan
- 3:25 – Valuing Benefits to Society
- 4:05 – Wrap up & adjourn



INTRODUCTIONS BY ORGANIZATION

DRAFT FINDINGS FROM PY22 VERIFICATION REPORT

ALEX CHAMBERLAIN
APPLIED ENERGY GROUP

SUMMARY OF VERIFICATION ACTIVITIES

CET

Tracking Database Replication

- All deemed and semi-deemed measures
- First-year kWh, lifetime kWh, and peak demand kW
- Total Resource Benefits

Desk Reviews & Onsite Visits

- Simple (BEEM, BHTR, BGRID, REEM, RESM, and RHTR)
- Complex (CBEEM, CREEM)
- Excluded BESM and upstream lighting

Grid Services & GHG Emissions

- Count of grid services-eligible measures
- kWh/kW conversion to barrels of oil & tons of GHG

Non-CET

Accessibility & Affordability

- Economic Disadvantaged
 - BHTR and RHTR
 - Community-based energy efficiency
 - EmPOWER Hawaii Project
- Island Equity

MTED & Customer Satisfaction

- Review of workshop attendance and other supporting documents
- Results of Medallia (business) and in-house survey results

LMI PIM Awards

- Awards go to HECO
- Associated with RHTR and A&A programs

PROGRESS ON ACTIVITIES

AEG is still wrapping up many of the verification activities. The draft verification report will be delivered to the EEM in early April.

CET Activities

- Completed tracking database replication
- Completed desk reviews for non-CBEEM programs
- Completed 24 / 30 planned onsite visits
 - Remaining wrapping up this month and in early March
- Up next:
 - Combine savings replication, desk review, and onsite visit results.
 - Calculate dependent metrics, e.g., GHG emission reductions

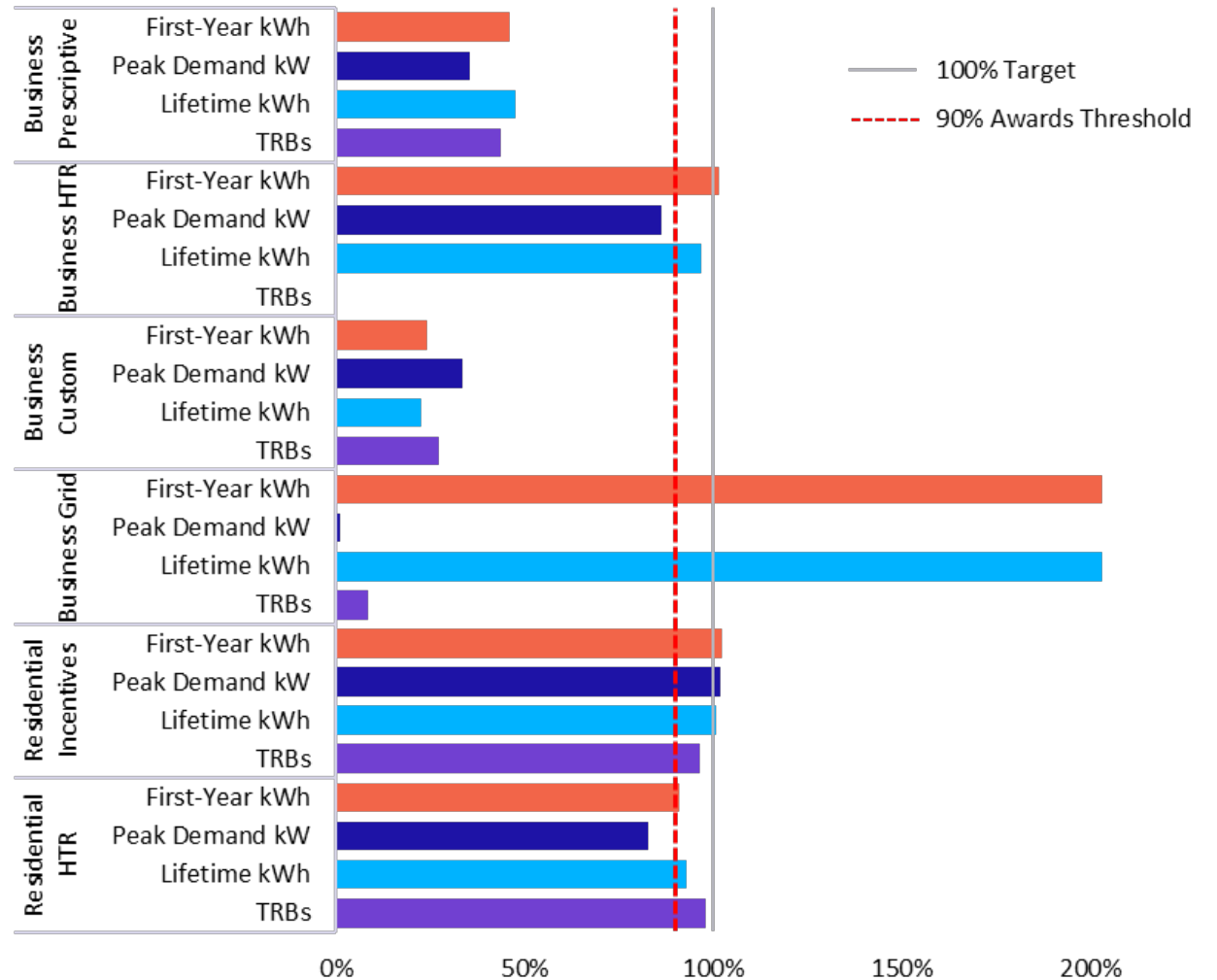
Non-CET Activities

- Completed program manager interviews
- Completed preliminary A&A and MTED documentation reviews
- Up next:
 - Verify A&A customer bill savings using final CET verification results

REPORTED CET PERFORMANCE

Based on Hawai'i Energy's reported performance,

- **Hard-to-Reach** programs met minimum thresholds in most categories.
- The **Residential Incentives** program met minimum thresholds or exceeded targets in all performance categories.
- **Business Prescriptive** and **Business Custom** programs missed all performance targets in PY22.
- The new PY22 program category **Business Grid Services (BGRID)** far exceeded first-year and lifetime kWh targets but fell short of peak demand savings and TRBs.



HIGHLIGHTS FROM PM INTERVIEWS

- Customers continue to be wary of capital investments because of economic turbulence left in the wake of the COVID-19 pandemic.
- Hawai'i Energy consulted on and advocated for appliance standards that passed in the legislature during PY22.
- Hawai'i Energy established a new hard-to-reach (HTR) community partnership in Waimanalo, which helped fulfill Hard-to-Reach objectives under the A&A key focus area.
- Adding a principal development engineer to the team helped Hawai'i Energy communicate more with commercial customers in-person, provide personalized support, and illustrate the value proposition of energy efficiency.

HIGHLIGHTS FROM PM INTERVIEWS

- Hawai'i Energy ramped up its engagement with CEAs by hosting focus groups and workshops to better understand appliance markets, identify pain points, improve program operations and delivery, and otherwise bolster the contractor experience. Staff observed that CEAs spoke more candidly about their experiences and provided actionable feedback in this format.
- Hawai'i Energy streamlined the rebate application process for customers/contractors and the rebate intake process on the back end.
- Hawai'i Energy pivoted its focus within the residential sector to water heaters because of diminishing lighting savings and lack of widespread need for weatherization or heating measures.
- Hawai'i Energy resumed in-person student STEM workshops and professional development trainings.

LOW-TO-MODERATE INCOME (LMI) PERFORMANCE INCENTIVE MECHANISM (PIM)

- The LMI PIM came into effect in PY21 and seeks to incent Hawaiian Electric to collaborate with Hawai'i Energy in the delivery of energy savings to LMI customers.
- AEG calculated the LMI PIM rewards associated with the RHTR and A&A programs implemented by Hawai'i Energy.
- The approach aims to calculate the additional net benefits customers received for RHTR and A&A initiatives by comparing first-year energy savings, peak demand savings, participation, and first-year bill savings targets to the verification results.

TECHNICAL REFERENCE MANUAL UPDATE

KELLY PARMENTER
APPLIED ENERGY GROUP

SUMMARY OF PY24 TRM UPDATES

New Measures

- Horticulture lighting
- Distribution transformer

Cross-Cutting Content

- GHG calculator
- Codes & standards tracking

Updated Measures

- Residential
 - Heat pump water heater
 - Solar water heater
 - VFD pool pump
- Commercial
 - Electronically commutated motor
 - Variable refrigerant flow AC
 - VFD pool pump

Sunsetting Measures

- CFL baseline
- Linear fluorescent baseline
- VFD pool pump

Other Clarifications

- Type A lamp RULs
- Energy Advantage default HOU's

NEW MEASURES

Commercial Horticulture Lighting










- Non-stack horticultural applications
- Replacing HID and T5 HO with LED lighting
- Horticultural LED fixtures must be DLC-qualified
 - PPE* \geq 2.3 micromoles/J
- Created a semi-prescriptive approach for:
 - A couple of crop types (e.g., cannabis, microgreens, flowering crops)

* PPE = Photosynthetic photon efficacy

Commercial Distribution Transformer

- Formerly treated as custom
- Created semi-prescriptive approach for:
 - $<$ 1000 kVA
 - Pre-existing transformer installed before 2007
 - New transformer serves \leq 110% of previously served load
 - Savings analysis based on no-load losses
- Calculator determines eligibility for early retirement or end-of-life savings approach
- Some projects require a dual baseline

UPDATED RESIDENTIAL MEASURES

| | <i>Peak demand savings</i> | <i>Energy savings</i> | <i>Lifetime savings</i> |
|--|---|---|---|
| Heat Pump Water Heater | ΔkW | $\Delta kWh/yr$ | ΔkWh |
| <ul style="list-style-type: none">Added custom entry of new HPWH uniform energy factor (UEF)Updated ENERGY STAR specifications and default UEF |  |  |  |
| Solar Water Heater | ΔkW | $\Delta kWh/yr$ | ΔkWh |
| <ul style="list-style-type: none">Added custom entry of household occupants and clarified baselineUpdated outlet water heater temperature for consistency |  |  |  |
| VFD Pool Pump | ΔkW | $\Delta kWh/yr$ | ΔkWh |
| <ul style="list-style-type: none">Updated baseline to current federal standardsUpdated efficient case to current ENERGY STAR specifications |  |  |  |

UPDATED COMMERCIAL MEASURES

Electronically Commutated Motor (ECM)

- Clarified scope and eligibility
- Expanded savings tables to include multiple ECM sizes and applications
- Removed the integrated controls requirement

Peak demand savings

Δ kW



Energy savings

Δ kWh/yr



Lifetime savings

Δ kWh



Variable Refrigerant Flow AC

- Updated baseline to current federal standards
- Added differentiation between single- and three-phase systems

Δ kW

No change

Δ kWh/yr



Δ kWh



VFD Pool Pump

- Updated baseline to current federal standards
- Updated efficient case to current ENERGY STAR specifications

Δ kW



Δ kWh/yr



Δ kWh



MEASURES WITH UPCOMING SUNSET DATES

Equipment Affected

| Equipment Affected | Reason | Sunset Date |
|-------------------------------|---------------------|----------------|
| ■ Screw-base lamps | HI HB 192 Act 225 * | Dec 31, 2024 † |
| ■ Linear and pin-base lamps | HI HB 192 Act 225 | Dec 31, 2025 |
| ■ Pool pumps (1.15 hp – 5 hp) | 10 CFR 431.485 ** | Sep 28, 2025 |

Residential Measures Affected

- R_Light_LED
- R_Light_Linear LED
- R_Light_Security Light
- R_PumpMotor_VFD Pool Pump

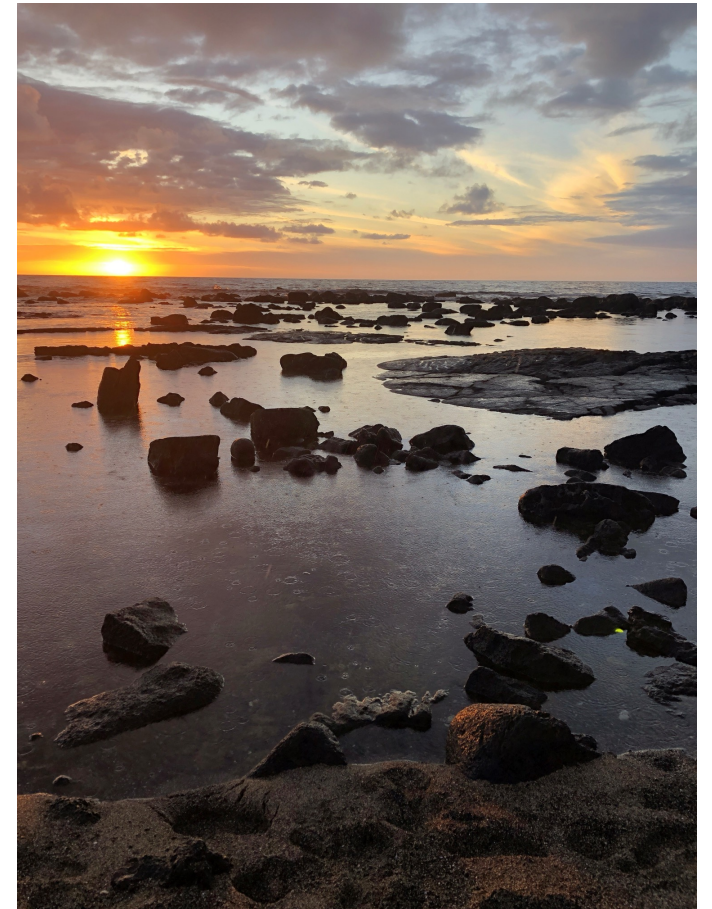
* Prohibits sale of certain fluorescent lamps

** Requires pool pumps to have variable speed motors

† Direct install LED lighting through the ES4H program, which supports A&A customers, would have a later sunset date

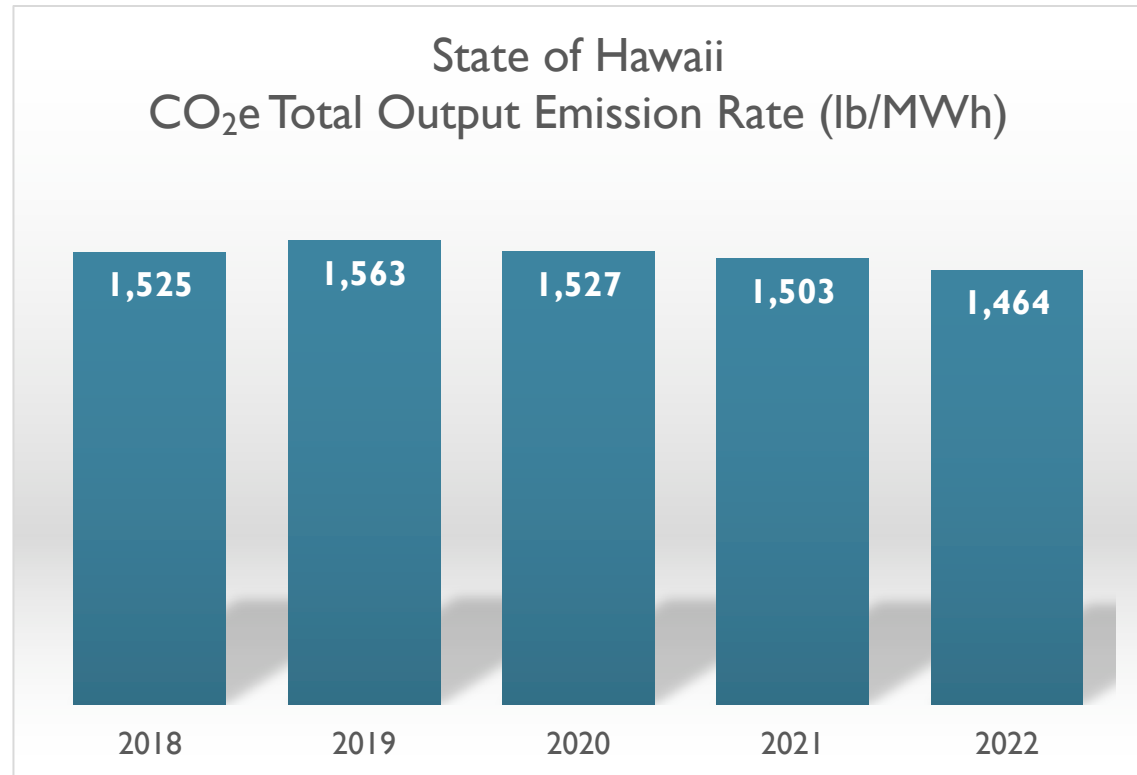
Commercial Measures Affected

- C_Light_General
- C_Light_Downlight Retrofit
- C_Light_Dimmable(Nonlinear LED)
- C_Lighting_Refrigerated Case
- C_PumpMotor_VFD Pool Pump



UPDATED GHG CALCULATOR

- Updated emission rates in the GHG calculator with eGRID 2022 data (released January 2024)
- Hawaii's CO₂e emission rate decreases by 2.6% between 2021 and 2022



PY22-PY24 TRIENNIAL PLAN PROGRESS UPDATE

CAROLINE CARL
LEIDOS/HAWAI'I ENERGY



Hawai'i Energy

PY2023 Q1-Q2

Technical Advisory Group (TAG) Meeting

February 28, 2024

AGENDA

- 01 Executive Summary**
- 02 PY22 and PY23 Program Planning Performance Targets**
- 03 Clean Energy Technologies Portfolio Review**
Commercial Prescriptive & Custom
- 04 Energy Optimization Initiatives**
Power Move | Demand Response Ready | EV Charging Station Rebate Program
- 05 Accessibility & Affordability**
Community-Based Energy Efficiency | Energy Advantage | EmPOWER Grant
- 06 Market Transformation & Economic Development**
Trainings & Workshops | Policy | Benchmarking
- 07 Key Takeaways – PY23 and Beyond**

EXECUTIVE SUMMARY

ORG

Actively recruiting Energy Advisor and Residential Program Manager positions to build out team capacity for deeper customer engagement.

CET

Residential portfolio on track overall. Increased Solar Water Heating incentive to drive program participation. Black Friday, limited time offer “Smart Starter Kit” promotion sold out one day after launch. Commercial prescriptive portfolio saw steady performance, custom projects remain slow but making progress with 5 projects completed in Q2. Focused on treasure hunts and tailored customer engagement as priority responsibilities for pipeline development. Hosted over 50 contractors, consultants and facilities staff from large commercial properties at our inaugural “Custom Projects Lunch and Learn,” focused on project design and development.

EOI

EVCS rebate program contract modifications and budget backfill finalized. Power Move Commercial Energy Storage has a total of 1.8 MW of committed capacity from projects in pipeline, pipeline increased by 3 projects. Demand Response ready counts forecasted to overshoot PY23 targets.

A&A

Both residential and commercial A&A programs had steady progress from Q1 to Q2. Community based energy efficiency initiatives continued focus on building the pipeline for appliance trade-ups in collaboration with key outreach partners. The Empower grant awarded 129 projects and applications remain open to be accepted on a rolling basis until budget is exhausted. Energy Advantage expanded qualifications have attracted several worship facilities as participants.

MTED

Hosted professional development and technical trainings reaching 895 participants. Innovation Symposium returned in person for the first time since 2019. Hawai'i Energy kicked off engagement for the 2024 Legislative Session with a Legislator site visit to Hale Kalele Affordable Housing facility in December.

MarCom

Creative engagement strategies continue to grow brand recognition and encourage participation. Two new multi-channel marketing campaigns underway – cooling rebates and commercial kitchen equipment. Energy Awareness Month increased website traffic by over 10,000 users. Promotional campaigns received over 3,000 entries. Holiday campaigns increased residential downstream applications over 2022 participation levels.



02

PY22 and PY23 Program Planning Performance Targets

Planning Review - Program Year Targets 2022 and 2023

PERFORMANCE INDICATORS

CLEAN ENERGY TECHNOLOGIES

| KEY FOCUS AREAS | PY22 TARGET | PY23 TARGET | METRICS |
|---|----------------|----------------|--------------------|
| ENERGY EFFICIENCY & CONSERVATION | | | |
| First Year Energy Reduction | 89,807,910 | 87,993,581 | kWh |
| Lifetime Energy Reduction | 1,227,351,042 | 1,195,399,370 | kWh |
| Peak Demand Reduction | 17,605 | 14,210 | kW |
| Total Resource Benefit | \$155,924,667 | \$148,429,952 | \$ |
| Grid Services Ready | 2,200 | 1,400 | products installed |
| Demand Flexibility | 3,500 | 1,500 | kW |
| Greenhouse Gas Emissions/Barrels of Oil | 63,659/146,887 | 62,372/143,920 | GHG Tons/Barrels |

Planning Review – Program Years 2022 and 2023

PROGRAM YEAR 2022

| | BUDGET | Program-lvl kW | Program-lvl kWh |
|--------------------|---------------------|----------------|-------------------|
| BUSINESS | \$17,847,069 | 13,251 | 59,461,825 |
| BEEM | \$4,366,311 | 4,955 | 24,502,071 |
| CBEEM | \$4,935,703 | 2,911 | 26,901,196 |
| BESM | \$1,029,215 | 144 | 1,044,353 |
| BGRID | \$2,292,267 | 4,203 | 150,577 |
| BHTR | \$4,154,841 | 1,038 | 6,863,630 |
| BTRAN | \$1,068,732 | | |
| RESIDENTIAL | \$11,066,554 | 4,354 | 30,346,084 |
| REEM | \$4,366,311 | 1,969 | 16,108,177 |
| CREEM | \$4,935,703 | 17 | 183,416 |
| RESM | \$1,029,215 | 1,853 | 10,236,101 |
| RGRID | \$2,292,267 | - | - |
| RHTR | \$4,154,841 | 515 | 3,818,390 |
| RTRAN | \$1,068,732 | | |
| GRAND TOTAL | \$28,913,623 | 17,605 | 89,807,910 |

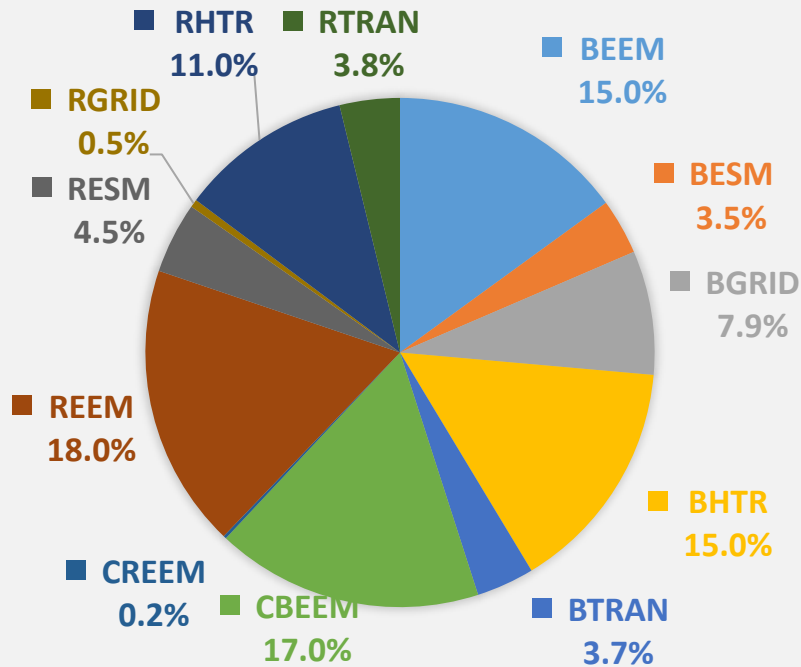
PROGRAM YEAR 2023

| | BUDGET | Program-lvl kW | Program-lvl kWh |
|--------------------|---------------------|----------------|-------------------|
| BUSINESS | \$16,383,369 | 9,943 | 57,985,880 |
| BEEM | \$3,944,311 | 4,208 | 22,098,200 |
| CBEEM | \$5,045,501 | 3,010 | 27,737,999 |
| BESM | \$1,062,399 | 132 | 985,660 |
| BGRID | \$850,602 | 1,486 | 150,577 |
| BHTR | \$4,411,824 | 1,107 | 7,013,443 |
| BTRAN | \$1,068,732 | | |
| RESIDENTIAL | \$11,086,425 | 4,267 | 30,007,702 |
| REEM | \$5,068,745 | 1,846 | 15,567,882 |
| CREEM | \$55,000 | 17 | 183,416 |
| RESM | \$1,349,708 | 1,870 | 10,322,242 |
| RGRID | \$148,207 | - | - |
| RHTR | \$3,352,349 | 533 | 3,934,161 |
| RTRAN | \$1,112,416 | | |
| GRAND TOTAL | \$27,469,794 | 14,210 | 87,993,581 |

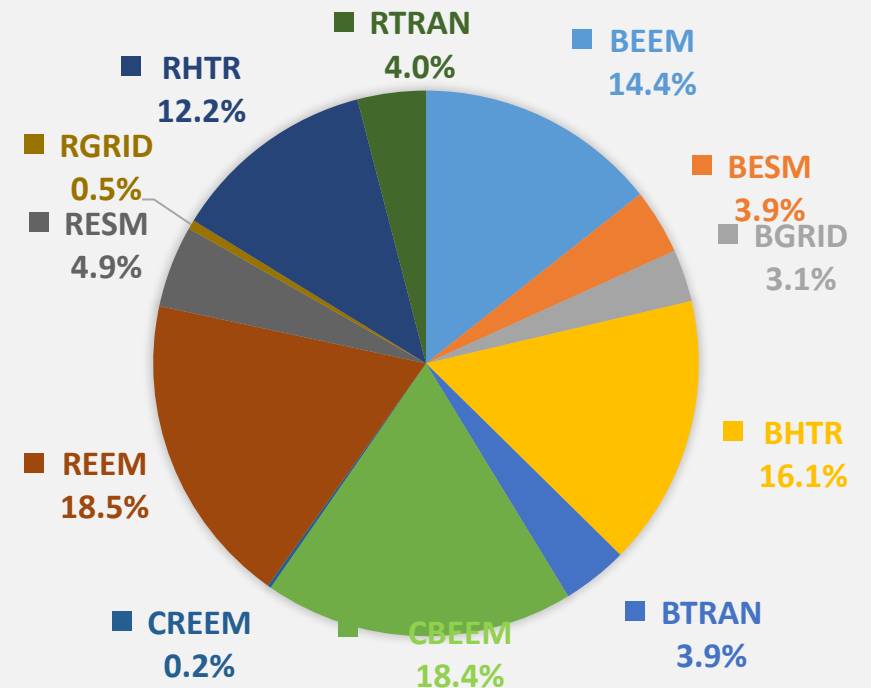
Planning Review - Program Years 2022 and 2023

| | 2022 | | | 2023 | | | |
|----------------|--------------|------------------------|---------------------------------|----------------|--------------|------------------------|---------------------------------|
| | Budget Split | Avg \$/ kWh (Customer) | Avg \$/ Lifetime kWh (Customer) | | Budget Split | Avg \$/ kWh (Customer) | Avg \$/ Lifetime kWh (Customer) |
| BUSINESS | 61.73% | \$0.241 | \$0.016 | BUSINESS | 59.64% | \$0.227 | \$0.016 |
| RESIDENTIAL | 38.27% | \$0.308 | \$0.025 | RESIDENTIAL | 40.36% | \$0.316 | \$0.026 |
| OVERALL | 100% | \$0.263 | \$0.019 | OVERALL | 100% | \$0.256 | \$0.018 |

PY22 INCENTIVE BUDGET BY INITIATIVE



PY23 INCENTIVE BUDGET BY INITIATIVE



PY23 Progress Matrix – CET and A&A

Legend

- Meeting Goals
- Making Progress
- Facing Challenges

| CLEAN ENERGY TECHNOLOGIES | Key Focus Area | Residential | | Commercial | |
|---------------------------------|-----------------------------|-------------|----|------------|----|
| | | Q1 | Q2 | Q1 | Q2 |
| | First-Year Energy Reduction | | | | |
| Lifetime Energy Reduction (new) | | | | | |
| Peak Demand Reduction | | | | | |
| Total Resource Benefit | | | | | |
| Grid Services Ready | | | | | |


| ACCESSIBILITY & AFFORDABILITY | Key Focus Area | Q1 | Q2 |
|-------------------------------|-----------------------------------|----|----|
| | Business A&A | | |
| | Residential A&A | | |
| | Community-Based Energy Efficiency | | |
| | Island Equity – County of Hawai'i | | |
| | Island Equity – County of Maui | | |
| | Island Equity – C&C Honolulu | | |

PY23 Progress Matrix – Market Transformation

| | | | |
|--------|---|---|---|
| Legend |  Meeting Goals |  Making Progress |  Facing Challenges |
|--------|---|---|---|

| MTED BEHAVIOR CHANGE | Key Focus Area | Q1 | Q2 |
|-------------------------|---|--|---|
| | STEM-based Student Workshops |  |  |
| | Adult Learning |  |  |
| | Gamification Campaigns & Competitions |  |  |
| | Professional Development and Technical Assistance |  |  |

| MTED CODES & STANDARDS | Key Focus Area | Q1 | Q2 |
|------------------------------|---------------------------|---|---|
| | Advocacy |  |  |
| | Code-Related Training |  |  |
| | Improving Code Compliance |  |  |

| MTED – CLEAN ENERGY INNOVATION HUB | Key Focus Area | Q1 | Q2 |
|--|--------------------------------------|---|---|
| | Innovation and Emerging Technologies |  |  |

PY23 Progress Matrix – Grid Services Ready, Demand Flexibility and Green House Gas Emission Reduction



| | Key Focus Area | Q1 | Q2 |
|--|---|----|----|
| | Grid Service Ready - products installed | ● | ● |
| | Demand Flexibility | ● | ● |
| | Green House Gas Emissions Reduction | ● | ● |
| | Avoided Barrels of Oil | ● | ● |

03

Clean Energy Technologies

Commercial Prescriptive & Custom

Program Year 2023 December

| Key Performance Metrics | YTD Results | PY2023 Targets | PY2023 YTD % of Target | Metric |
|---|-------------|----------------|------------------------|--------|
| Clean Energy Technologies | | | | |
| Energy Efficiency & Conservation | | | | |
| First Year Energy Reduction (kWh) | | 87,993,581 | | kWh |
| Business Prescriptive | 15,430,082 | 23,083,861 | 67% | |
| Business HTR | 2,054,430 | 7,013,443 | 29% | |
| Business Custom | 3,285,662 | 27,737,999 | 12% | |
| Business Grid | - | 150,577 | 0% | |
| Residential Incentives | 9,288,693 | 26,073,540 | 36% | |
| Residential HTR | 1,333,048 | 3,934,161 | 34% | |
| Lifetime Energy Reduction (kWh) | | 1,195,399,370 | | kWh |
| Business Prescriptive | 151,591,382 | 359,679,496 | 42% | |
| Business HTR | 27,457,561 | 99,929,404 | 27% | |
| Business Custom | 43,141,419 | 386,994,368 | 11% | |
| Business Grid | - | 1,505,765 | 0% | |
| Residential Incentives | 116,772,769 | 299,010,587 | 39% | |
| Residential HTR | 14,086,296 | 48,279,751 | 29% | |
| Peak Demand Reduction (kW) | | 14,210 | | kW |
| Business Prescriptive | 1,783 | 4,340 | 41% | |
| Business HTR | 208 | 1,107 | 19% | |
| Business Custom | 424 | 3,010 | 14% | |
| Business Grid | 133 | 1,486 | 9% | |
| Residential Incentives | 1,239 | 3,734 | 33% | |
| Residential HTR | 159 | 533 | 30% | |
| Total Resource Benefit (\$) | | 148,429,952 | | \$ |
| Business Prescriptive | 17,679,026 | 45,080,589 | 39% | |
| Business HTR | 3,066,203 | 12,428,668 | 25% | |
| Business Custom | 5,651,040 | 46,061,615 | 12% | |
| Business Grid | 27,817 | 1,627,322 | 2% | |
| Residential Incentives | 14,188,968 | 37,306,830 | 38% | |
| Residential HTR | 1,865,499 | 5,924,927 | 31% | |

PY23 Q1 Q2 SNAPSHOT

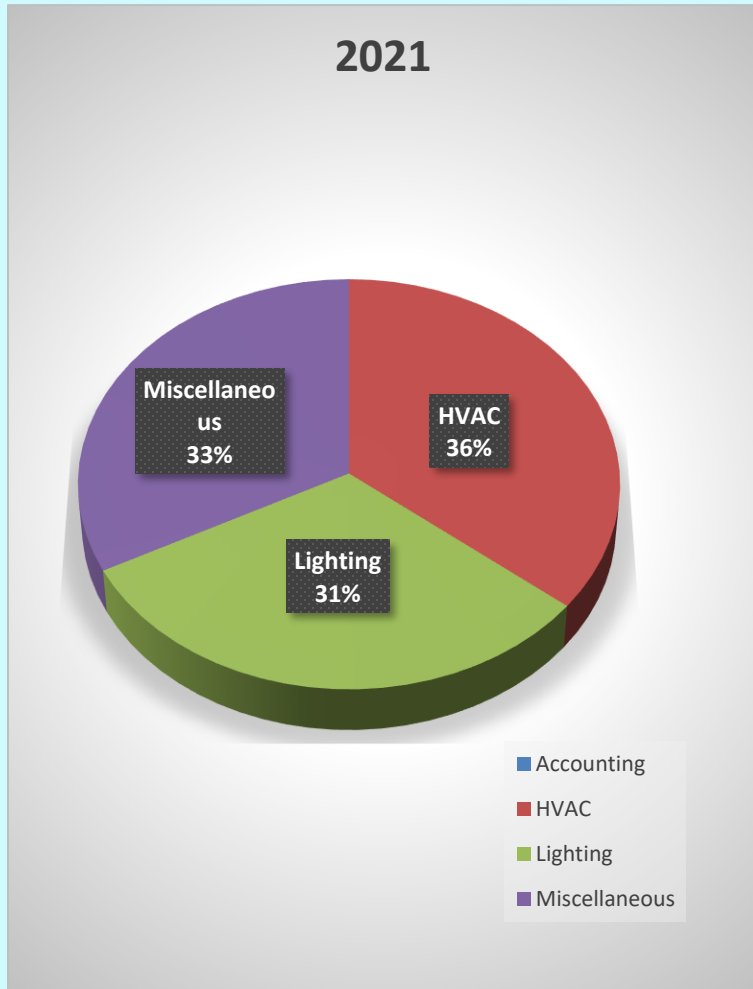
- Commercial **continued steady performance for kW and kWh** first half of PY23. Prescriptive participation on track, custom remains behind. Overall lagging slightly on Lifetime kWh and TRB. Progress in pipeline development but project timelines remain challenging. **Power Move** continues to be an attractive offering for customers.
- **Completed numerous customized trainings on tactics for finding energy efficiency projects e.g. phone interviews, benchmarking calcs, review of Mechanical, Electrical, Plumbing (MEP) drawings, Building Management System (BMS) check-ups, site walkthrough auditing, and operations & maintenance watch-outs.**
- Established relationships and implemented ongoing check-ins with several key customers and CEAs. Advanced several projects through direct facilitation & problem solving.

Continuing Challenges:

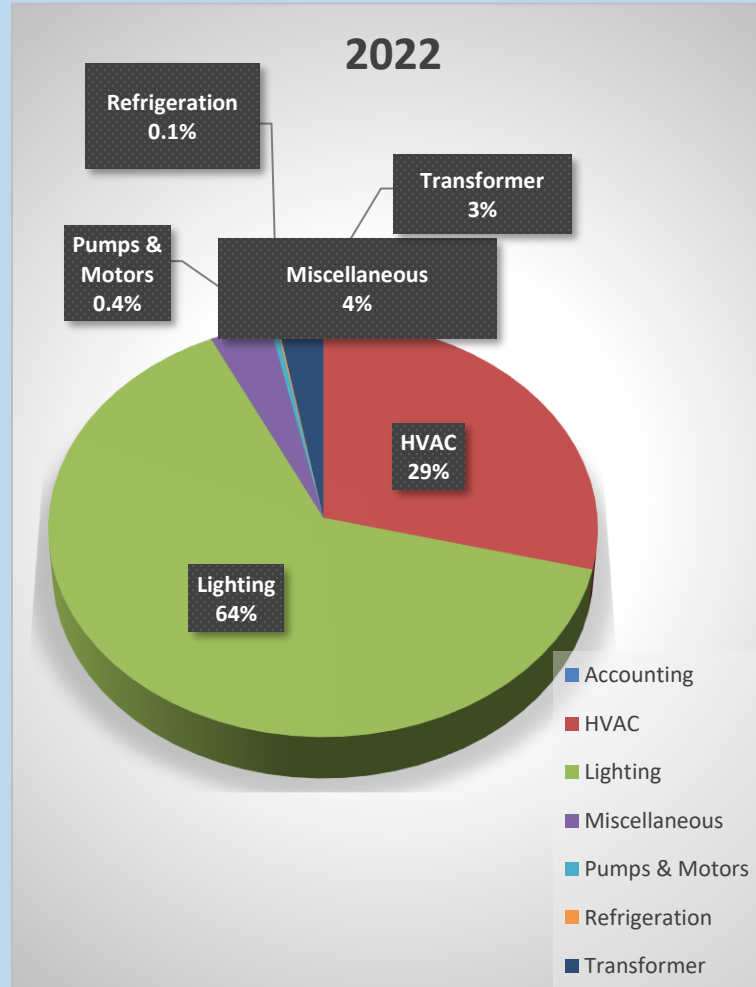
- Lack of building energy management systems (EMS) to establish baselines for custom projects, especially for refrigeration systems.
- Availability of building data to aid with targeting and prioritization.
- Customers lack knowledge & experience with facilities equipment and EE in the market.

Commercial Custom Portfolio PY21 / PY22 / PY23 YTD Comparison

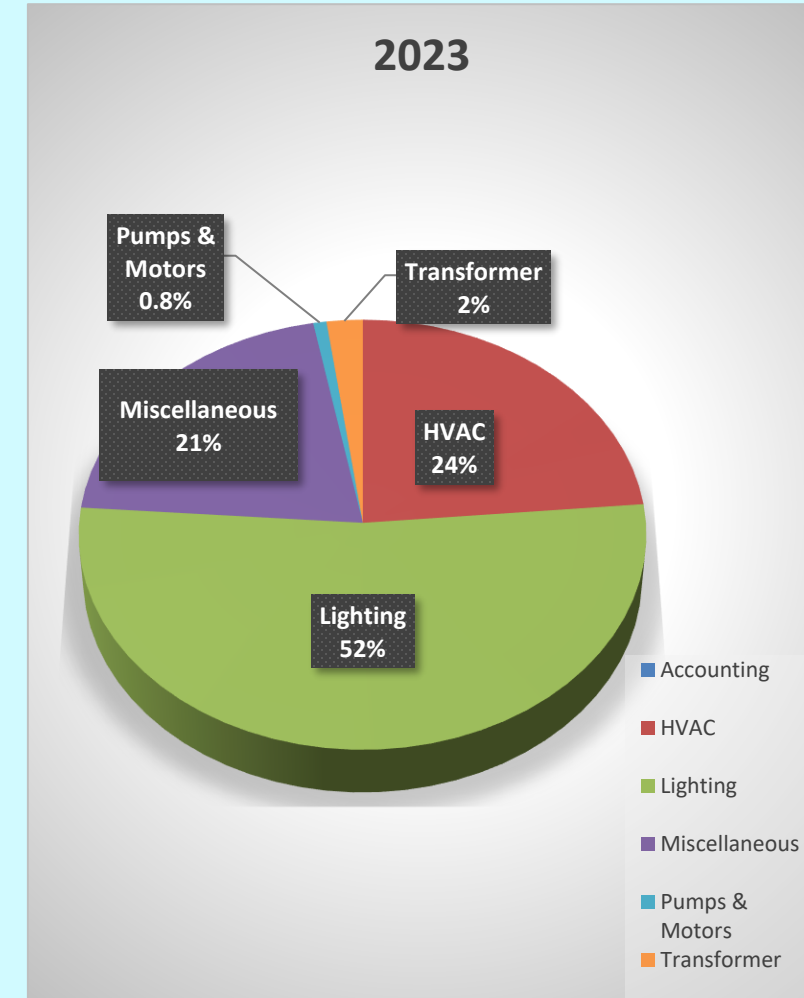
Custom - Program Year 2021
Total Savings: 24,703,301



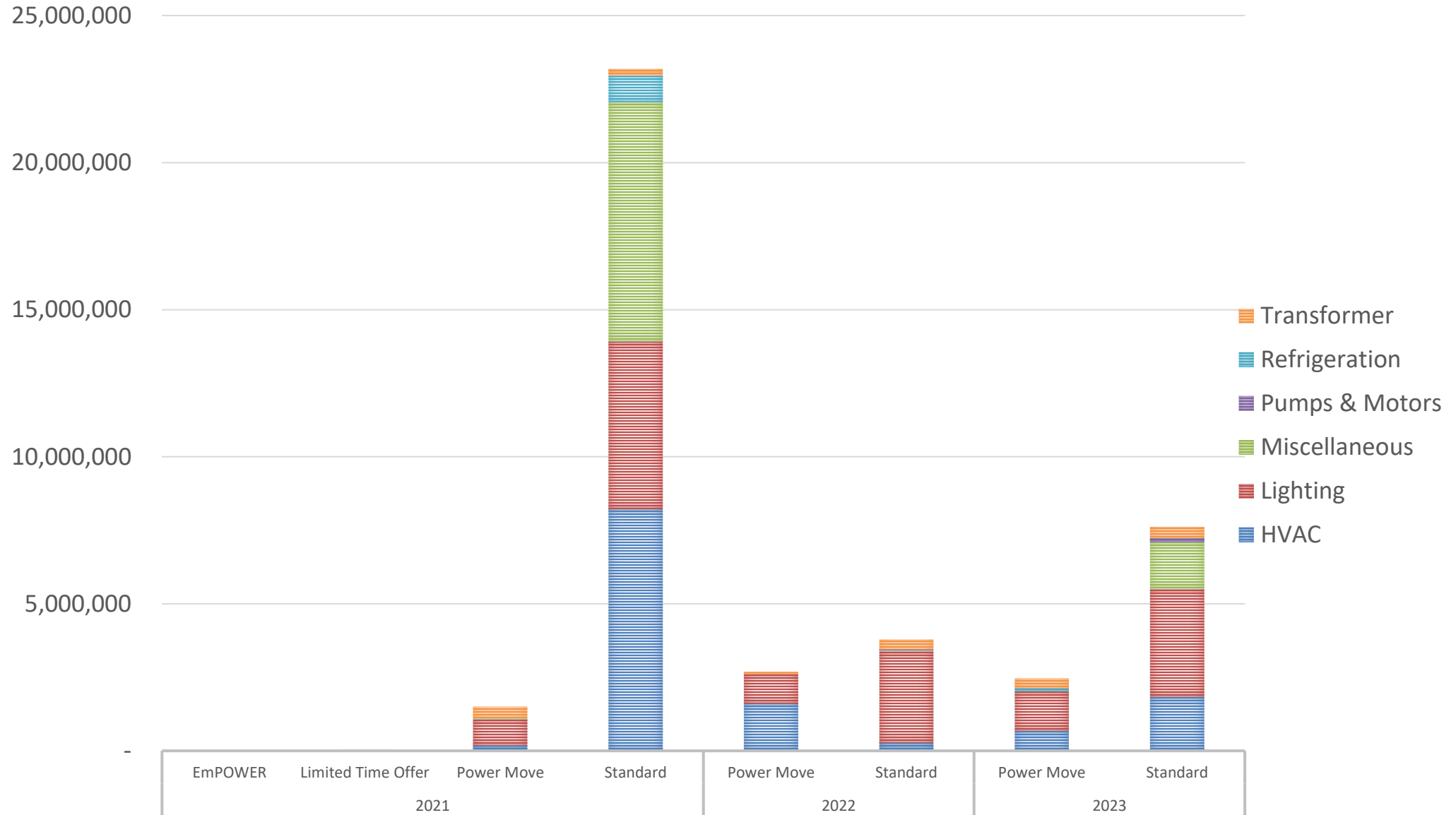
Custom - Program Year 2022
Total Savings: 6,472,844



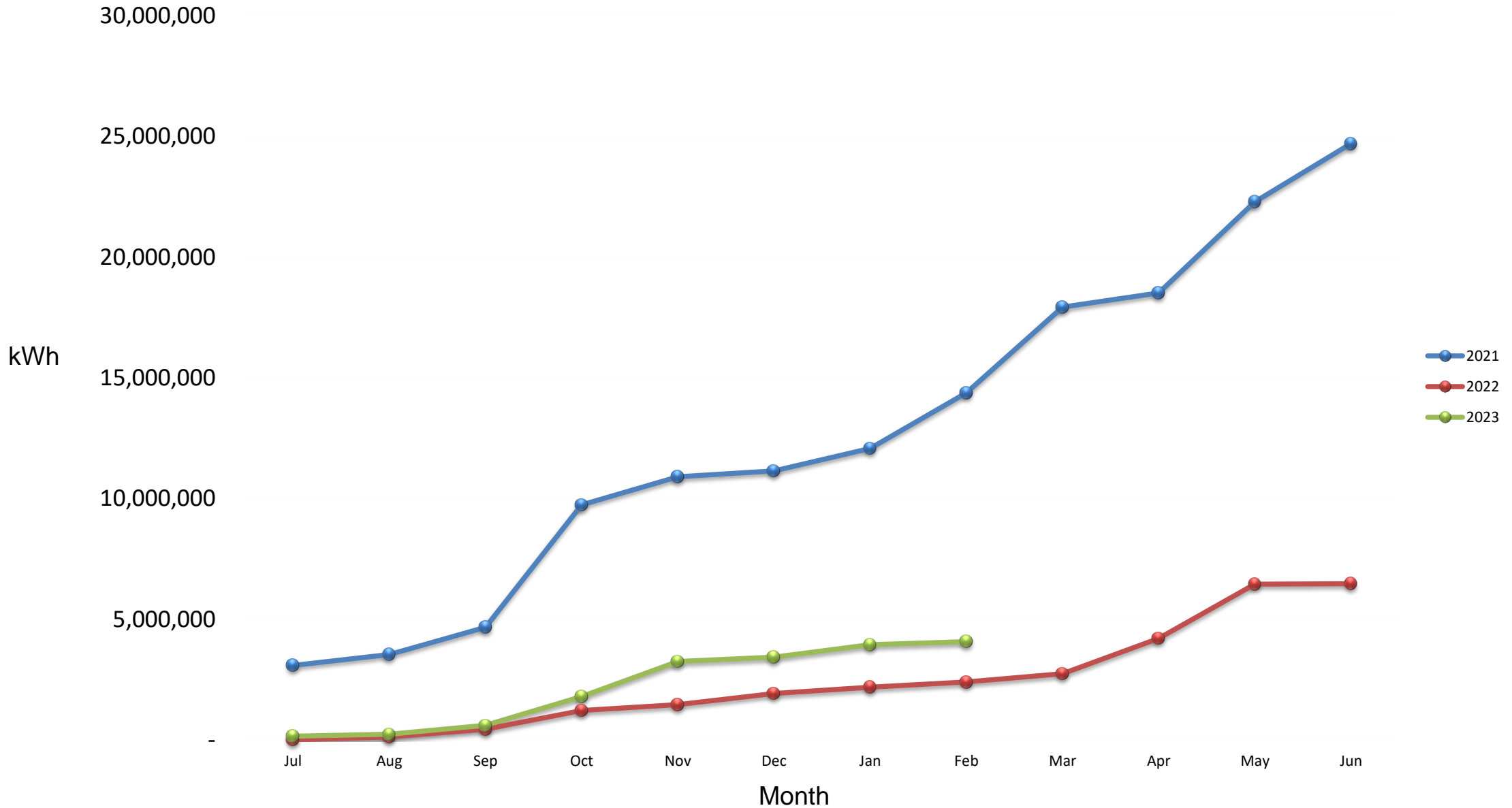
Custom - Program Year 2023
Total Forecasted Savings: 13,843,239



Commercial Custom Portfolio PY21 / PY22 / PY23 YTD Comparison



Commercial Custom Portfolio PY21 / PY22 / PY23 YTD Comparison



04

Energy Optimization Initiatives

Power Move | Demand Response Ready | EV Charging Station Rebate Program

Power Move – Commercial Energy Storage & Demand Savings Bonus

Objective: The Power Move family of rebates is designed to reward local businesses for taking steps to reduce energy load during utility peak hours of 5:00 to 9:00 p.m.



Commercial Energy Storage

- 130 kW of 1.5 MW PY23 target complete as of Q2
- 12 additional projects formally committed for PY23 and PY24
 - 1.8 MW of committed capacity
 - \$1.6 million in rebates
 - Most with expected date of service in late 2023 or 2024

Demand Savings Bonus – Custom Projects on O’ahu and Maui

- Q2 progress
 - 6 projects completed
 - \$211,000 in rebates
 - 99 kW, 1 million kWh
- Cumulative progress through Q2
 - 21 projects completed
 - 139 kW
 - 1.4 million kWh
- 62% of PY23 CBEEM forecast are Power Move



Challenges:

- Permitting and permission to operate timeline
- Long project sale cycle

Challenges:

- Contractors busy
- Customer & contractor scheduling challenges

Commercial Demand Response Ready

Objective: Support smart hotel guest room controls and other smart technology installations to promote grid service capable demand side resources and future enrollment in HECO DR programs



Demand Response Capable Guest Room Energy Management Systems

- 396 units (2 hotels) controlled as of Q2
- 5 additional hotels in the PY23 forecast ~ 2,700 units
- Ongoing conversations with HECO for Fast DR applicability

Smart Devices – GridPoint Energy Management System

- 5 devices installed as of Q2
- National chain restaurants are close to signing on



EV Charging Station Rebate Program

Objective: Deploy funding appropriated with Act 202 (2022) and Act 164 (2023)



- Execution underway
- Contract Modification completed in December 2023 - \$637,500 in rebate funding received



Project delays continued due to permitting

| PY23 through Q2 | | FUNDING | NOTES | | | | | |
|--|-----------|---------|----------------------------|---------------------------------|---------------------------|--------------------------------|------------|-----------------|
| PY22 Rebate Funding (carried over into PY23) + PY23 Contract Mod | \$787,953 | | Level II Single Port (NEW) | Level II Single Port (Retrofit) | Level II Multi Port (New) | Level II Multi Port (Retrofit) | DCFC (NEW) | DCFC (Retrofit) |
| Total Paid | \$140,124 | | 3 | 3 | 21 | 1 | 1 | 0 |
| Remaining Funding | \$647,829 | | | | | | | |
| Current Pipeline (as of 12/31/23) | \$71,100 | | \$6,000 | \$3,900 | \$93,143 | \$3,000 | \$34,081 | \$0 |
| | | | | | | | | |
| | | | | | | | | |

05

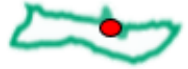
Accessibility & Affordability

Community-Based Energy Efficiency | Energy Advantage |
EmPOWER Grant

| KEY FOCUS AREAS | | PY23 TARGET | ACHIEVED | PERCENTAGE TO TARGET |
|--|-----------------------|-------------|-----------|----------------------|
| <i>ECONOMICALLY DISADVANTAGED</i> | | | | |
| • BUSINESS A&A (ENERGY ADVANTAGE, ENERGY RELIEF GRANT) | CUSTOMERS SERVED | 550 | 145 | 26% |
| | CUSTOMER BILL SAVINGS | \$1,755,940 | \$413,285 | 24% |
| • RESIDENTIAL A&A (SINGLE & MULTIFAMILY DIRECT INSTALL, WATER HEATING DIRECT INSTALL, BULK APPLIANCE, MAINTENANCE) | | | | |
| • RESIDENTIAL A&A (SINGLE & MULTIFAMILY DIRECT INSTALL, WATER HEATING DIRECT INSTALL, BULK APPLIANCE, MAINTENANCE) | CUSTOMERS SERVED | 1800 | 491 | 27% |
| | CUSTOMER BILL SAVINGS | \$2,631,891 | \$674,257 | 26% |
| • COMMUNITY BASED ENERGY EFFICIENCY (NEW) | | | | |
| | CUSTOMERS SERVED | 4 | 3 | 75% |

| KEY FOCUS AREAS | | PY23 TARGET | ACHIEVED | PERCENTAGE TO TARGET |
|-----------------------------|------------------|-------------|----------|----------------------|
| <i>ISLAND EQUITY</i> | | | | |
| • COUNTY OF HAWAI'I | CUSTOMERS SERVED | 13% | 12.3% | 95% |
| | | | | |
| • COUNTY OF MAUI | CUSTOMERS SERVED | 13% | 8.7% | 66% |
| | | | | |
| • CITY & COUNTY OF HONOLULU | CUSTOMERS SERVED | 74% | 79% | 107% |
| | | | | |

Community-Based Energy Efficiency



Moloka'i – Delivered 66 appliances through partnership with Sustainable Moloka'i.

Goal: 100

- Challenge: Sign-ups were slow and goal was not met
- Solution: Considering holding a second Hui



Waimanalo – Delivered 99 appliances

Goal: 125

- Challenge: 2nd Year CBEE Community
- Solution: Worked closely with community partner to carry out logistics and program requirements; community partner provided great outreach opportunities.



Hāna

- Ordered 27 appliances for trade-up with our partner, Ma Ka Hana Ka 'Ike (original goal was 25)
- Supply shortages have pushed out deliveries from January to February

Energy Advantage (E.A.)



PY23 Q1 - Q2 results:

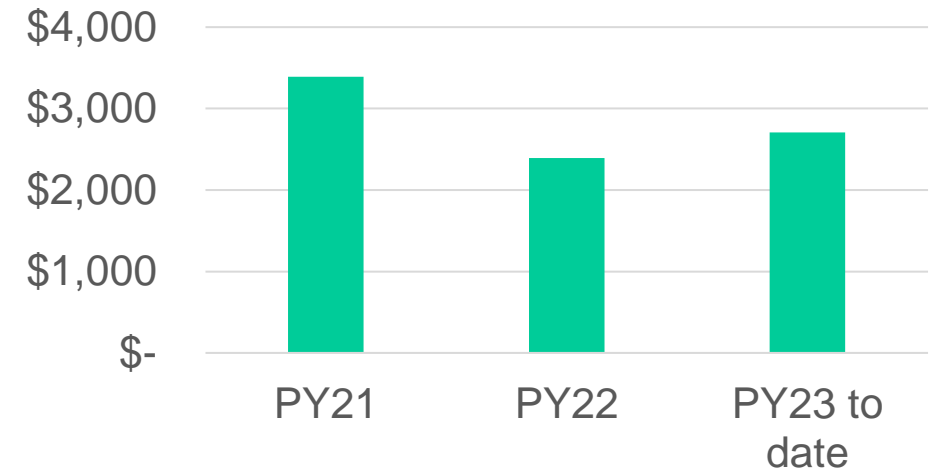
- **122 customers served**
- **\$400,000 in bill savings**
- Certain charitable organizations are participating in Hawai'i Energy programs for the first time including many worship facilities



Challenges:

- Active contractors are busy
- Larger projects with longer project cycle

Average Customer Annual Bill Savings

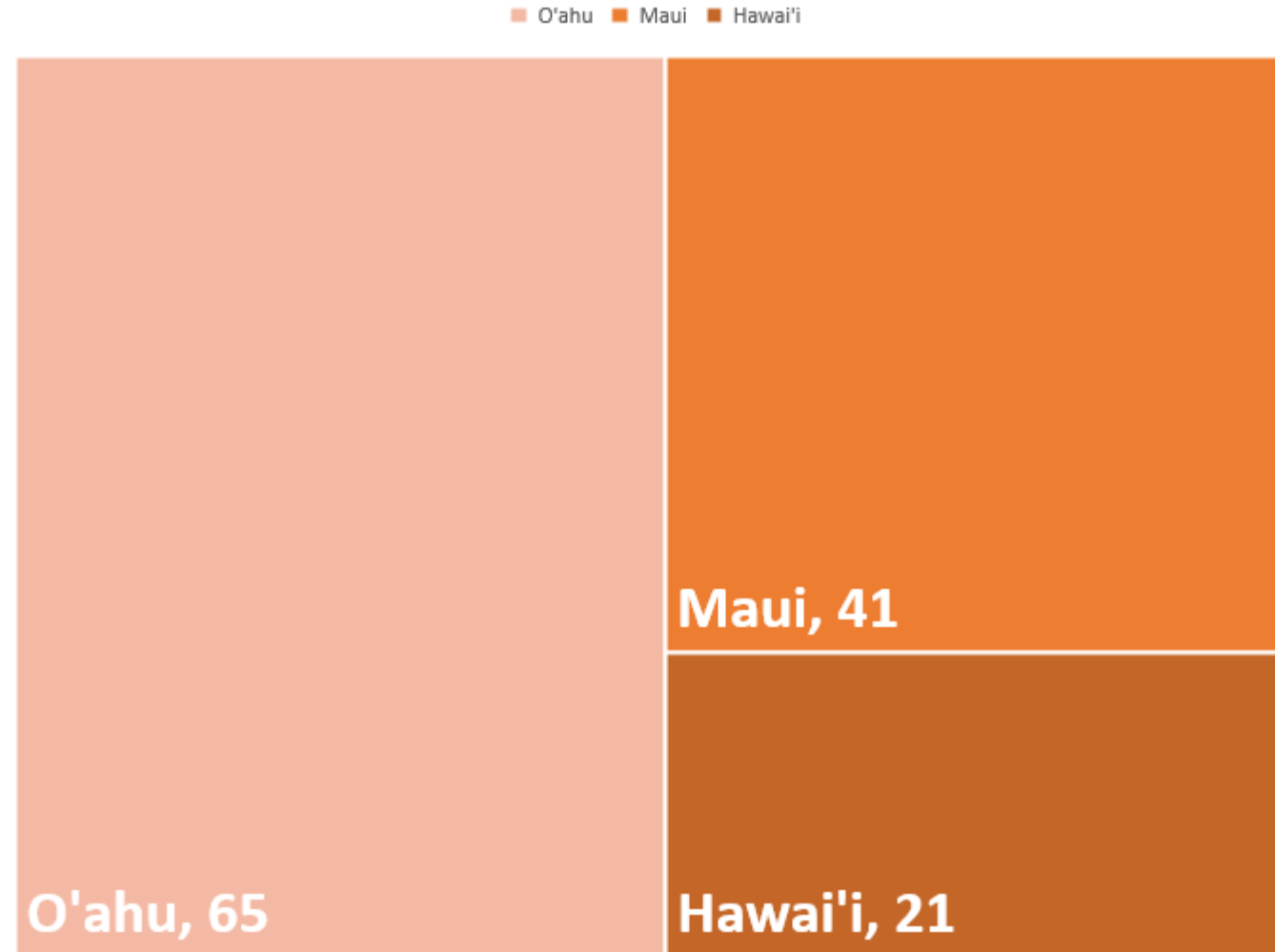


EmPOWER Grant

Objective: Fund energy efficiency improvements for nonprofits, small businesses and other qualifying organizations experiencing economic loss

- In PY23: from the 150+ applications received and reviewed:
 - More than \$1.25m in total project costs associated with those applications
 - 129 projects awarded and accepted by applicants
 - Nearly \$500,000 in total award reimbursement funding committed
 - Decision made to keep grant program open for applications with a rolling deadline

PY23 Grants Awarded by County



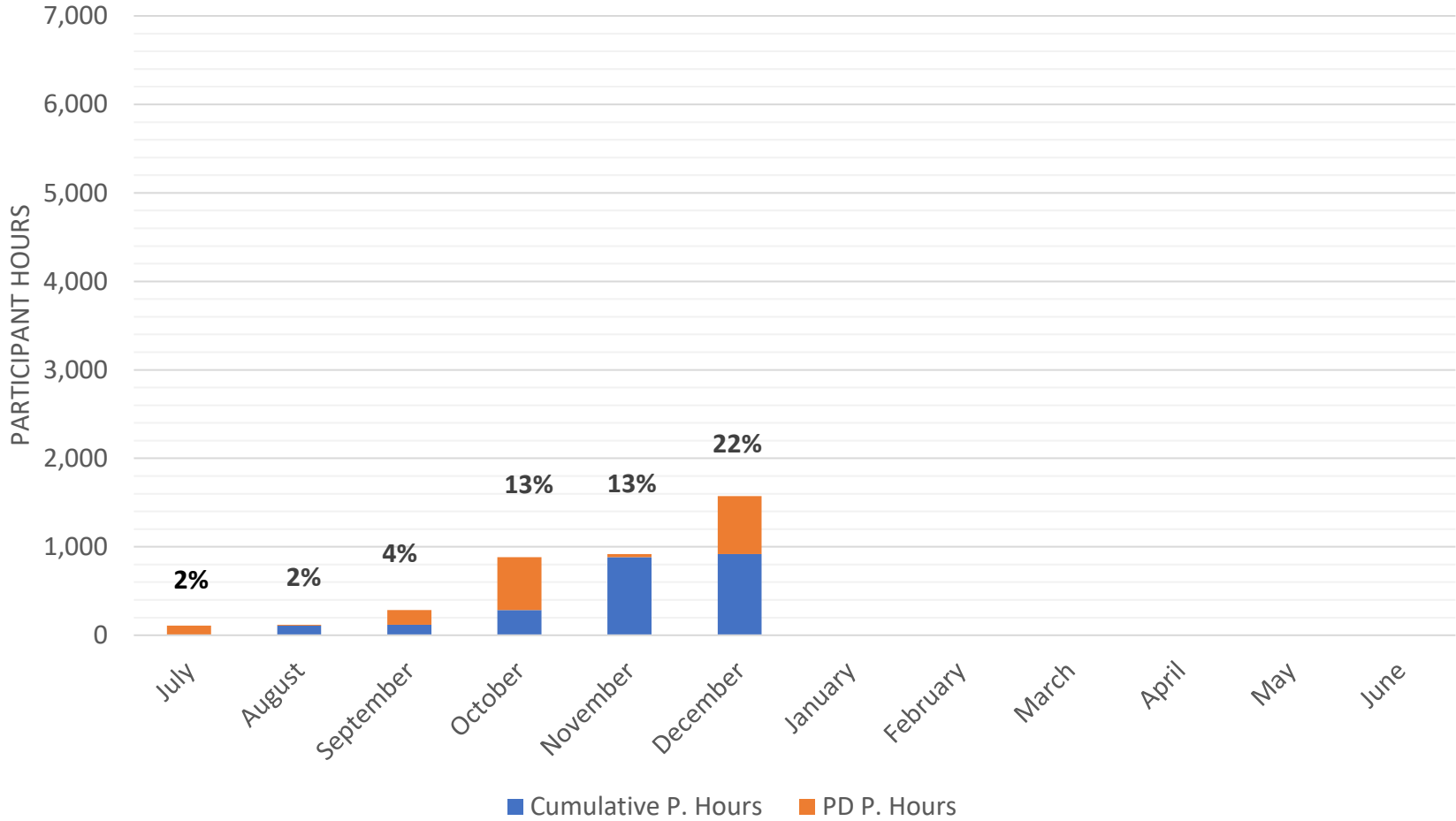
Projects Awarded In PY23, By County:
 O'ahu – 51%, Maui – 32%, Hawai'i – 17%

06

Market Transformation & Economic Development

Trainings & Workshops | Policy | Benchmarking

PY23 MTED Professional Development (PD)
Participant Hours



PROFESSIONAL DEVELOPMENT & TECHNICAL TRAININGS

Objective: Provide technical training around emerging efficient technologies and best practices.



895 Participants, 1,561 Participant Hours

Highlights

- ✓ Hawai'i Energy and ASHRAE Hawai'i - "Building Decarbonization" by Peter Rumsey, P.E.
- ✓ Lunch & Learns: custom project incentives, new incentive offerings & resources, forum for networking & collaboration, and provided answers for key questions around working with Energy Advisors. Guest speakers provided case studies and testimonials.
- ✓ Custom Program Training for contractors
- ✓ Heat Pump Water Heater Focus group
- ✓ Hawai'i Energy Innovation Symposium educational sessions (4)
- ✓ Architects Hawai'i Lunch and Learn
- ✓ Honolulu Code IECC 2018 Update – Residential Low Rise
- ✓ Honolulu Code IECC 2018 Update – Commercial and High-Rise Residential





07

Key Takeaways

PY23 Q1 - Q2 KEY TAKEAWAYS



Residential program forecast remains solid, increased rebate amount for solar water heating to drive participation. Commercial prescriptive portfolio looking more promising than custom. Maintaining focus on team process development and tailored customer engagement for pipeline development for PY23.



Custom projects are slow to develop and execute. The complexity of the program rules requires additional hand holding to protect baseline calculations. External factors like economic pressures and staffing shortages slow project development for both customers and trade allies. Continuing to focus on customer engagement and treasure hunts to drive pipeline development.



The focus on partnership development in the A&A space is critical to more robustly serve customers. Energy Advantage customer targeting has shifted to larger non-profit facilities, with increased participation from worship and education customers.

Continue to focus on program training for allies and customers. Partnerships with professional organizations has increased attendance at Hawai'i Energy sponsored events.



Engagement amongst existing customers is high. Promotional programs for Energy Awareness Month successfully increased website traffic. Retail engagement remains a priority for PY23 as turnover at sales locations is high.

PY23 Considerations - Maui Wildfire Response

- **Increase our Accessibility and Affordability** offerings to support near- and mid-term housing transitions.
- Enhance program initiatives by **increasing incentives** and **expanding access through modified program requirements and eligibility criteria**.
- **Broaden current zip code eligibility** to make our deeper retrofit programs readily available across the entire Island of Maui.
- **Longer-term Rebuild Efforts and Opportunities for Coordination**
 - Make efficiency as easy as possible with a focus on the development of grid-interactive, efficient, and resilient buildings.
 - Work closely with the Distributed Energy Resources (DER) industry to provide more holistic solutions to both residential and commercial new construction projects.
 - Support workforce development through expanded professional and technical training offerings. This could include specific support for workers exploring a career move to the clean energy trade industry.





Mahalo

VALUING BENEFITS TO SOCIETY

JENNIFER BARNES

ENERGY EFFICIENCY MANAGER TEAM

FRAMING THE SOCIETAL BENEFITS DISCUSSION

- What societal benefits are **priorities** for Hawai'i?
 - Such as: equity, GHG reductions, system benefits, water savings, economic development
- How, specifically, should these be **defined**?
 - Is equity defined as income based or something else? Should renters be included regardless of income?
- What **outcomes** are we trying to drive towards?
 - More PBFA program dollars to LMI customers? Bill savings or reduction in energy burden? Measures that maximize GHG emissions reductions?
- What is the appropriate **mechanism** to capture or promote these societal benefits?

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This Meeting

TEAM DISCUSSIONS

- 2 min. {
- Individually:**
- List all the societal benefits that you think the PBFA programs should support
 - Capture each on a sticky note/one benefit per sticky note

- 15 min. {
- In Groups:**
- The EEM will count everyone off into groups
 - The virtual attendees will be one group
 - Group members share & discuss their benefits
 - Combine any duplicates
 - Decide on the group's top 3 & develop a **definition** for each
 - Select a spokesperson

- 4 min. each {
- Report Out:**
- Each team's spokesperson to present their group's top 3
 - The TAG should ask clarifying questions & work to combine or align similar benefits

*Electric system benefits:
Programs drive savings
during system peak
(defined as between 5:00
pm and 9:00 pm) or
measures that allow for
load shifting*

*Water Savings = gallons of
water saved*

*Small business
customers defined by
rate class and/or non-
profit status*

NEXT STEPS & WRAP UP

JENNIFER BARNES

ENERGY EFFICIENCY MANAGER TEAM

MEETING FEEDBACK



What went well today?



What could have been better?

QUESTIONS?

-
- Please contact Jennifer Barnes at 510-756-1501 or jenniferbarnes@2050partners.com.
 - Meeting materials will be posted on www.HawaiiEEPS.org