Hawai'i Energy

TRIENNIAL PLAN

Program Years 2022-2024

SUBMITTED BY

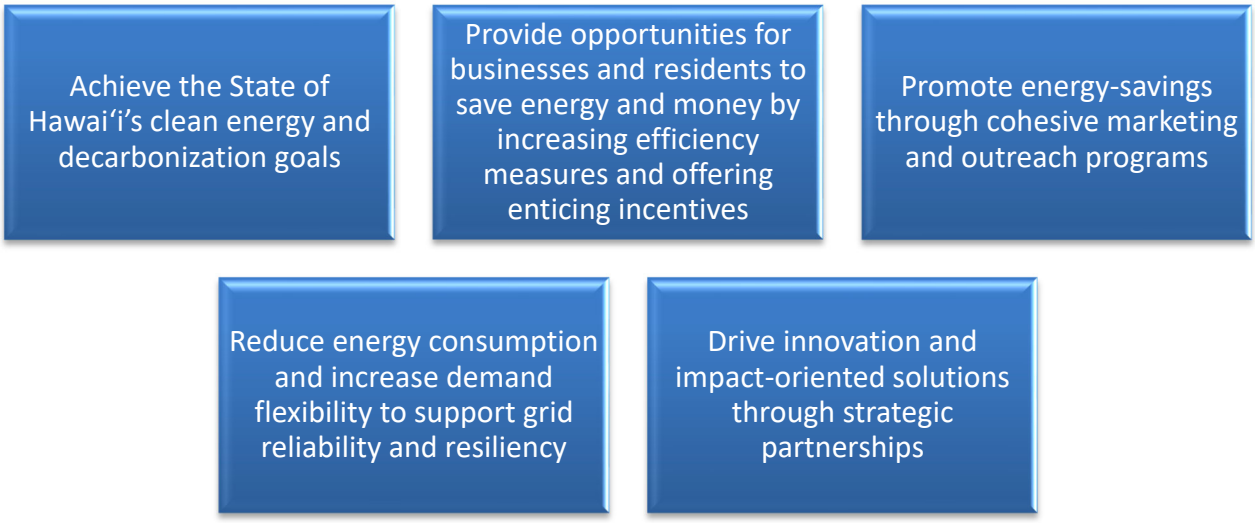
Hawai'i Energy

leidos

Executive Director Message

On behalf of the Hawai'i Energy team, it is my honor to present our vision and strategies for the next three Program Years (PY), beginning on July 1, 2022. We are presenting the Plan for PY22-24 for the Hawai'i Public Utilities Commission's consideration.

As the Public Benefits Fee Administrator, this plan outlines our new and continuing programs, goals and metrics that will support the following objectives:



Our program has been helping Hawai'i residents and business make smarter energy choices for the past twelve years. Like many organizations, we have weathered many storms that have not only challenged us, but strengthed us. We have remained steady through Hawai'i's changing energy landscape, economic hardships and, of course, the COVID-19 pandemic, which came during the first year of our PY19-21 Triennial period. Through it all, we persevered to maintain our core program areas while also remaining nimble to respond to uncertainties.

I have had the distinct pleasure of serving on the Hawai'i Energy team since 2011, and now stepping into the role as Executive Director, I am motivated to guide our mission, team and constituents forward. This plan reflects the full commitment and dedication of our entire Hawai'i Energy *'ohana*, and I couldn't be more proud.

Caroline Carl

Caroline Carl
Executive Director, Hawai'i Energy

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1. INTRODUCTION

1.1. Plan Overview

Since 2009, Hawai'i Energy's mission has been to **empower island residents and businesses to make smarter energy choices that reduce energy consumption, save money and achieve a 100% clean energy future**. Hawai'i Energy ("the Program") presents this Triennial Plan for Program Years 2022-2024.

The objective of our Plan is to **enhance our programming with a greater emphasis on supporting peak demand reduction and load flexibility to facilitate the islands' rapid transition to reach the state's forward-thinking and ambitious decarbonization goals**:

- **Achieving 100% clean energy and 100% carbon neutrality by 2045**
- **Reducing electricity consumption by 4,300 GWh by 2030**
- **Supporting the counties' shared goal of 100% clean transportation by 2045**

Administered by Leidos Inc. on behalf of the PUC, the Program stands on a strong foundation of more than twelve years of implementing energy efficiency programs as the Public Benefits Fee Administrator (PBFA) for the State. As a result of the Program's strategic direction and positive standing in the communities we serve, Hawai'i has been recognized in the top third of energy efficiency programs in the country[1] in ACEEE's 2020 State Energy Efficiency Scorecard report. Hawai'i Energy has also been recognized by the U.S. Environmental Protection Agency as an ENERGY STAR® Partner of the Year in Program Administration in 2021 and 2022 – during arguably the most challenging two years in the Program's existence.

Looking ahead, Hawai'i Energy must evolve to support these clean energy goals and the state's journey to a resilient and renewably powered electric grid. The electricity industry in Hawai'i is in a period of dramatic transition, with the retirement of centralized fossil-fuel based generation starting to occur and the increased shift to renewable energy and distributed technologies. Challenges with permitting, supply chain, and community buy-in on large, utility-scale renewable projects mean energy efficiency, demand reduction, and load shifting will take on even greater importance. The transition will also require more active engagement with the grid by residents and businesses alike, with an increased focus on when customers use energy, not just how much they can reduce their usage.

[1] American Council for an Energy Efficiency Economy. (2020). 2020 State Energy Efficiency Scorecard- Hawaii. Retrieved from: https://www.aceee.org/sites/default/files/pdf/state-sheet/2018/hawaii.pdf

Hawai'i is seeing and feeling the impacts of climate change on a level that cannot be ignored and requires immediate action. This includes rising seas and eroding beaches that are threatening and even collapsing homes[2] and high-temperature records breaking year after year amid consistent drought conditions.[3]

Looking ahead, the warnings from climate scientists are dire. The Intergovernmental Panel on Climate Change (IPCC) report released in April 2022 states change needs to happen now, or we will not be able to stop global warming. The IPCC report called on the energy sector to take action, including substantially reducing the use of fossil fuels and improving energy efficiency.[4] The report digs deeper into "Demand, services and social aspects of mitigation," stating that demand-side solutions are proven to provide multiple benefits to all sectors[5] and are key to mitigating climate change, especially in the near-term.[6]

Here at home, Hawai'i Energy continues to play a pivotal role in driving decarbonization. Focusing on the customer side of the meter, our programs and services support customer adoption of clean energy technologies — energy efficiency, peak demand reduction, and load flexibility — for both buildings and vehicles. This bolsters Hawai'i's transition to renewable energy by driving down energy generation and capacity needs and reducing the cost of the transition. This helps the islands reduce dependence on volatile and expensive imported fossil fuels which has recently spiked amidst the conflict in Ukraine. These price shocks can be detrimental to residents and businesses, as "Hawai'i households spent an average of 1.9% of income on electricity bills," with neighbor island counties having higher electricity burdens (Kaua'i County at 3.0%, Hawai'i County at 2.9%, Maui County at 2.5% and Honolulu County at 1.5%).[7]

Ultimately, Hawai'i Energy is working towards a future where our Program will continue to serve as a consistent resource and pillar for the state's energy structure by providing lasting value to our communities with proactive solutions — with a focus on integrated demand-side management — that make clean energy more accessible for residents and businesses, while reducing their energy burden.

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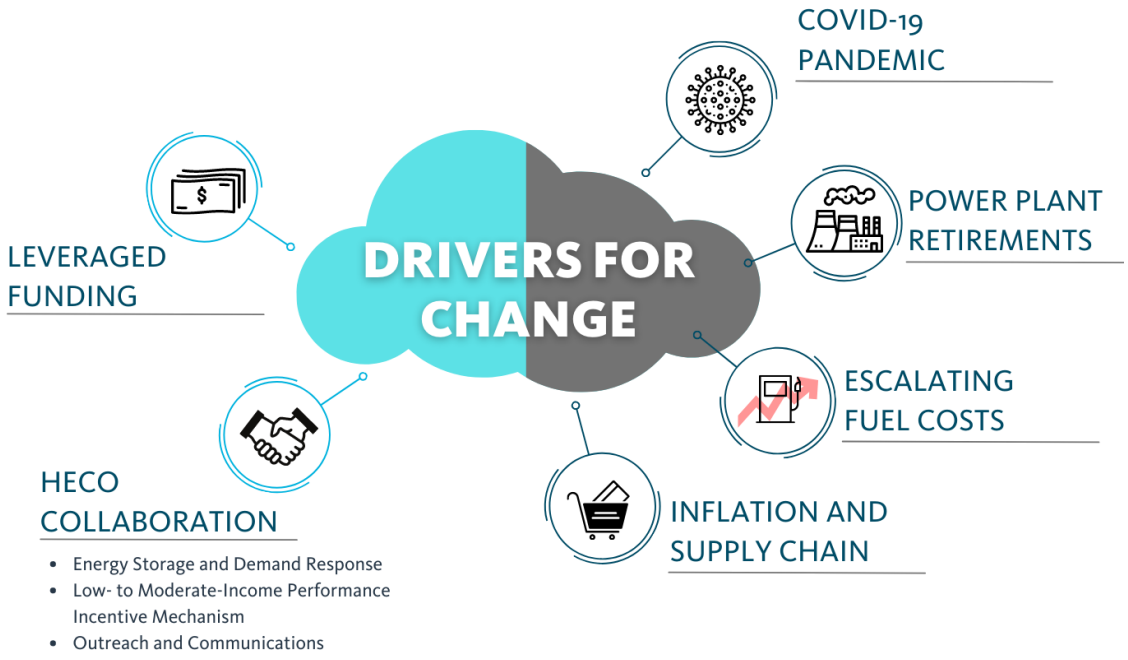
[2] *As beach disappears, house collapsed into ocean on Oahu's North Shore*, (Honolulu: Hawaii News Now, 2022).
[3] Cappucci and Saunders, *Inside Hawaii's wild summer of broken high-temperature records*, (Washington, D.C.: The Washington Post, 2019).
[4] *The evidence is clear: the time for action is now. We can halve emissions by 2030,* (Geneva: IPCC, 2022).
[5] *Chapter 5: Demand, services and social aspects of mitigation*, (Geneva: IPCC, 2021), 15.
[6] Ibid, 9.
[7] *Electricity Burdens on Hawai'i Households*, (Honolulu: State of Hawai'i Department of Business, Economic Development & Tourism, Research and Economic Analysis Division), 2021.

1.2. Drivers for Change

This Plan will address how our programs will respond to the impacts and opportunities associated with the following external drivers:



1.2.1. COVID-19 Recovery and Impacts

In response to the PUC's request to focus on alleviating the impacts of COVID-19, Hawai'i Energy pivoted to support customers through the economic challenges and pandemic-related disruptions that affected the state's economy. At the same time, the Program made overall budget cuts due to lower Public Benefits Fee (PBF) collections, reducing our budget to PY19 levels, a $3.7 million budget reduction from the approved plan. Our COVID-19 Recovery and Resilience Plan[8] focused on supporting economic recovery, including increasing program incentives, improving engagement with the Clean Energy Allies (CEAs), and launching innovative initiatives, including the Energy Relief Grant. The Program increased incentive amounts, which was largely successful in maintaining participation rates but resulted in a higher cost per kWh saved for the programs. Overall, the Program realized an approximate 13% reduction in cost-effectiveness.

As the pandemic continued into its second year, PBF collections continued to decline, and the Program faced additional budget cuts that resulted in reduced scope for market transformation, education, and outreach efforts. Plus, ongoing delays with the supply chain posed challenges for programs, as did general uncertainty in the market around investment in capital improvement

[8] *"COVID Recovery & Resilience Plan,"* (Honolulu: Hawai'i Energy), 2020.

projects. However, due to resilient efforts and the adjustment of goals to reflect these challenges, the programs claimed at least 95% of our targets in most areas.

Looking ahead, the outlook appears positive as the global economy continues to recover from the pandemic and the government eases restrictions. However, supply chain disruptions remain acute, affecting both the labor market and supplies of equipment and materials. Additionally, the current high inflationary environment is increasing the cost of all goods, including energy-efficient products and equipment. This means our incentives must also increase in order to have an impact on consumer's buying decisions and spur residents and businesses to invest in high efficiency equipment. As a result, our programs will be more expensive to deliver, reducing cost-effectiveness and making it more difficult to achieve goals unless budgets are increased.

If there is anything the pandemic has taught us, it is that even the best-laid plans may need to shift. Hawai'i Energy is prepared to be flexible, nimble, and proactive to support the state's economy and our customers, as they continue to recover from the pandemic.

1.2.2. Power Plant Closures

Reducing peak demand is an urgent challenge for the islands with the impending closures of the two fossil-fuel power plants in the coming years. The 180-MW AES coal plant was O'ahu's largest electricity generator, having provided 16% of the island's peak electricity demand. Under legislation passed and signed into law in 2020, the AES plant shut down operations on August 31, 2022. On Maui, the 50-MW Kahului plant, powered by oil-fired diesel generators, is scheduled to close in 2024. Hawaiian Electric Company (HECO) is developing multiple utility-scale solar and battery storage projects to replace capacity from these plants, but many of these projects have experienced delays, most recently due to pandemic-related supply chain disruptions.

To explore potential solutions to this challenge, the PUC commissioned the Hawai'i Natural Energy Institute (HNEI) to examine the use of distributed energy resources (DER) and demand response (DR) as capacity replacements for the retiring AES coal-fired power plant, particularly during months of peak load (August-October) immediately following the plant closure. The PUC identified behind-the-meter storage and energy efficiency as the solutions that can be deployed most quickly and assigned them the highest priority in addressing the capacity shortfall.

Regulators have worked aggressively with HECO, Hawai'i Energy, and DER project developers to bring solutions online. In June 2021, the PUC approved an emergency demand response program that would include a scheduled dispatch program for up to 50 MW. The following month, HECO announced its Battery Bonus program, which offers a cash incentive for ten years to O'ahu customers who agree to add a battery to their existing or new rooftop solar system.

In November 2021, Hawai'i Energy proposed a suite of programs designed to address the capacity shortfall by reducing load during peak evening hours. Initial programs were designed to deliver capacity reductions through both traditional energy efficiency programs and energy optimization initiatives for demand flexibility and grid-interactive efficient buildings (GEBs). Hawai'i Energy also sought to collaborate with HECO to boost participation in the Battery Bonus program through a complementary commercial battery storage program, which launched in February 2022. During the next performance period, Hawai'i Energy will expand on these initial efforts to deliver greater peak demand reduction and load flexibility to support grid resilience and the islands' transition to 100% renewable energy.

1.2.3. Collaboration with Hawaiian Electric

Since the development of Hawai'i Energy's PY19-21 Triennial plan, there has been increased collaboration with HECO under the guidance of the PUC. Along with the aforementioned Battery Bonus recruitment support, Hawai'i Energy and HECO have partnered on marketing and communications efforts as well as outreach to low- to moderate-income (LMI) communities.

Over the next three Program Years, Hawai'i Energy is looking to cultivate a deeper partnership with HECO. This includes:

- Rolling out complementary programs that support the utility's demand response and grid modernization efforts
- Partnering in areas where joint messaging would benefit customers the most — communications/outreach and low-to-moderate income
- Collaborating to identify target accounts for system constraints and equity

Going forward, we will continue to partner with HECO on the following joint projects that will provide solutions to address current and upcoming challenges and capitalize on opportunities.

1.2.3.1. Energy Storage (Power Move and Battery Bonus) and Demand Response – Ongoing Coordination and Flexibility

Hawai'i Energy has been carefully monitoring the Battery Bonus program since its initial roll-out in July 2021. Our intention has always been to align our own energy storage program offerings to best maximize budget and impact in relation to how funds are being deployed through the HECO program.

This coordination has been particularly important as the Battery Bonus program has evolved with specific amendments for monthly retail credits, peak capacity payments and increased cap on additional PV generation. Hawai'i Energy is very appreciative of the opportunity to sit in on the ongoing discussions as we focus on commercial customer engagement opportunities.

We are optimistic that the addition of a Hawai'i Energy rebate at time of installation will help by adding extra financial support to reduce the upfront investment costs.

The leveraging of Hawai'i Energy's commercial energy storage rebate is looking to be most opportune for commercial customers with a HECO Standard Interconnection Agreement (SIA) and Hawai'i Energy is working to co-recruit customers with HECO's Customer Energy Resources (CER) team. We have already identified two high potential opportunities. The Program has also been leveraging commercial permitting data, specifically looking at commercial PV battery permits pulled from 2017-2021, to help with customer targeting.

Additionally, Hawai'i Energy continues to pursue energy optimization programming for smart devices and grid interactive water heaters to support enrollment in commercial direct load control (CDLC) and Grid Service Purchase Agreement (GSPA) programs with selected aggregators.

We recognize that program flexibility is key to success across all of our energy optimization programming to ensure alignment and will remain actively engaged with the CER team and other stakeholders to monitor progress toward goals so that we can adjust our strategies as needed.

1.2.3.2. Low- to Moderate-income Performance Incentive Mechanism

In 2021, the PUC approved a series of Performance Incentive Mechanisms (PIMs) for HECO, including one specifically related to the collaboration between Hawai'i Energy and HECO to reach LMI customers. To accomplish the LMI PIM, both parties identified gaps and focus areas for the collaboration to drive more participation and program benefit to LMI residents. Hawai'i Energy put together a list of areas where HECO could provide assistance. From there, the two organizations began to work closer, with HECO assisting with home energy kit distribution through their community partners.

As we look to the upcoming program cycle, opportunities are expanding. In addition to increased co-planning and messaging efforts with HECO, Hawai'i Energy will aim to establish partnerships with trusted community groups to support messaging, outreach, and participation. The Program is also receiving data from HECO on the enrollment in special medical rates by customers. The section below on communication outlines some of the joint marketing and outreach to increase awareness about energy efficiency across all customers and hopefully drive greater program participation among LMI customers.

1.2.3.3. Collaborative Outreach with Hawaiian Electric

Hawaiian Electric and Hawai'i Energy have made significants progress in collaboration efforts in the areas of marketing, public relations and outreach. The two entities have worked jointly on messaging campaigns to promote energy conservation and highlight energy-efficient residential tips, including TV advertising, media interviews and social media posts *(pictured right)*.

Recent efforts to collaborate with HECO on outreach have certainly allowed the Program to reach a large number of customers quickly and directly. For a one-month period spanning April 22 through May 22, 2022, Hawai'i Energy saw a 45% increase in referrals from HECO's website, compared referrals from the previous month. With HECO's announcement[9] about 10-20% bill increases beginning in spring/summer 2022, paired with the upcoming shutdown of fossil fuel plants across the state and eventual rollout of HECO's time-of-use rates, the Program has no intent to deprioritize any joint outreach or shared messaging around conservation and efficiency, especially with its potential to remain a strong referral funnel in the coming years.

1.2.4. Escalating Fuel Costs Amid the Conflict in Ukraine

Hawai'i still has a significant dependence on foreign oil to fuel our state's electricity and transportation needs. According to the Hawai'i State Energy Office (HSEO), the state got most of its foreign crude oil in 2019 from Libya (57%), Russia (34%), South Sudan (5%) and Argentina (4%).[10] With the current crisis in Ukraine, Hawai'i businesses and residents are feeling the pinch even more in their electric bills and at the gas pump. This increases the urgency of Hawai'i Energy's work to help ensure affordability as some projections have indicated customer bills could double in the coming months and remain high for an extended period of time.

The economic multiplier of keeping these dollars in the State and investing in our people and economy is needed more than ever. While there are many environmental benefits to aggressively pursuing energy efficiency and renewable energy, we also need to do this for Hawai'i's economic viability.

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[9] *"Driven up by Russian invasion, oil prices will push electric bills higher in coming months,"* Hawaiian Electric press release, March 10, 2022.

[10] *"Hawai'i Energy Facts & Figures,"* Hawai'i State Energy Office, 2020.

1.2.5. Inflationary and Supply Chain Pressures

There are significant headwinds that make energy efficiency – while still highly cost-effective – more expensive to deliver. These include high inflation, which is increasing the cost of energy-efficient products and equipment, as well as continued pandemic-related labor shortages and supply chain disruptions that are slowing project timelines. One of the largest producers of home appliances is the country of China, which has faced shutdowns in production due to the pandemic and has resulted in a trickle effect of supply chain delays and demand gaps.

In Hawai'i, distributors and customers have anecdotally reported seeing major price increases:

- *Heat Pump Water Heater* – Distributors report that prices have already increased 30% and are likely to go up even more
- *Appliances* – We've seen an increase of 10-15% already in the last year, and distributors report that they expect another 20% increase in coming months
- *Solar Water Heater* – Installers report that along with an increase in the prices of equipment / steel, the average price of installations has increased around $1,000 (~15%) from previous years

1.2.6. Leveraged Funding

Federal and state legislation supporting clean energy investments may create new opportunities for Hawai'i Energy to leverage funding from sources beyond the PBF. At the Federal level, there have been two recent funding bills that have energized the industry. The Inflation Reduction Act passed in August 2022 will support clean energy, clean transportation, energy storage and energy efficiency by making available nearly $370 billion in tax incentives, grants and other investments, including rebates for energy-efficiency appliances and home repairs/improvements. Plus, the bipartisan $1.2 trillion Infrastructure Investment and Jobs Act (IIJA) passed in 2021 includes significant funding for clean energy and grid resilience, much of which will be deployed through state governments. Notably, the IIJA provides $550 million to fund the Energy Efficiency and Conservation Block Grant (EECBG) program, which provides funding to states, cities, and counties for energy efficiency and conservation plans and projects.

If Hawai'i Energy is able to access additional funding via IIJA or other non-PBF sources, we would leverage the supplementary capital to support the following programs:

- **City & County of Honolulu's Benchmarking Program**: Hawai'i Energy already has a lot of resources available and to facilitate a benchmarking help center due to the fact that our team regularly engages with area customers, we have vendor programs established, and we are able to provide trainings. To run a benchmarking help center, it would be key to fund at least a full-time position and support services for at least four years as buildings of different sizes may be required to get started with benchmarking at different times as the

law is established and to ensure that there is a point of contact to work with building owners and managers to point them towards opportunities for efficiency once benchmarking has completed.

- **Affordable Housing Accelerator:** The DC Affordable Housing Accelerator provides enhanced support to multifamily owners and their tenants through funding via the American Recovery and Reinvestment Act (ARPA). This program plans to provide technical assistance to multifamily building owners in the form of engineering support, building audits, building modeling, project planning support, and educational trainings. The Accelerator also provides enhanced funding support via increased rebates to help cover the costs of energy efficiency projects including deep energy retrofits. Hawai'i Energy could use this model to stack on top of benchmarking efforts and drive efficiency in LMI multifamily facilities.
- **Grid-Interactive Efficient Building Pilot:** Additionally, we think there is potential for collaboration with participating organizations in the Grid-Interactive Efficient Buildings Working Group that the PUC and HSEO is coordinating. When we are able to collectively identify a GEB pilot project – this could also be a good opportunity to build out Hawai'i Energy's demand flexibility metric.
- **Rental Property Whole Home Efficiency Grant:** Modeling of the success of the EmPOWER grant program, a residential Whole Home Efficiency Grant would target landlords or tenants to apply for funding to cover the expenses for energy efficiency upgrades up to an established amount. Upgrades could include appliances, water heating and air conditioning replacement or maintenance. Hawai'i Energy's Energy Smart 4 Homes program would be a first requirement to ensure a home energy audit was completed. Equipment installation and maintenance could be given to eligible Clean Energy Allies as leads.

Hawai'i Energy is also exploring opportunities to help state and local partners advance their clean energy goals. In June 2022, Governor David Ige signed into law the "Lead by Example" bill (HB1801, 2022) establishing a 25% energy reduction goal by 2025 for all state facilities. In July 2022, Honolulu Mayor Rick Blangiardi signed into law a bill that establishes a Better Buildings Benchmarking Program that would require large building owners to benchmark their building's energy and water use relative to similar buildings.

Hawai'i Energy is currently assessing opportunities to partner with state, county, and municipal governments and effectively leverage the existing program infrastructure, Clean Energy Ally network, and customer relationships to help them achieve their goals. Many of these collaboration opportunities are in the early stages of exploration, but they could present an important leveraging opportunity in the next performance period.

1.3. Evolution of Plan

Over the next three years, Hawai'i Energy will support continued economic recovery from the COVID-19 pandemic, while acting swiftly to deliver peak demand reduction and load flexibility to the grid. To meet these urgent needs, the role of Hawai'i Energy as the PBFA must continue to evolve.

1.3.1. 10-Year Strategic Roadmap

In the PY19-21 Triennial Plan, Hawai'i Energy identified the need for a long-term strategic roadmap as one of the Market Transformation objectives. The 10-Year Strategic Roadmap ("Roadmap") development process began in 2020 and included in-depth interview sessions with key stakeholders to gather feedback about the Program and recommendations on the role Hawai'i Energy could play in the next decade. Hawai'i Energy has used information from the Roadmap's stakeholder sessions in the development of this Plan. The Roadmap, which is currently being finalized, will further outline our strategic vision for the next decade.

1.3.2. New Sources of Energy Savings

In April 2022, the Biden Administration announced new cost-saving energy efficiency standards for light bulbs.[11] It adopted two new rules designed to conserve energy and lower electric bills for consumers. With the ongoing transformation of the residential lighting market, on top of the inflationary and supply chain issues outlined above, we are continuing our evolution beyond lighting to find new sources of savings.

Since lighting has been the most cost-effective measure in the portfolio, this adds to the cost of achieving savings. This Plan strives to balance these impacts in ways that continue to deliver high levels of cost-effective savings and strong customer value. However, it will not be possible to maintain previous levels of energy efficiency savings while responding to these headwinds, unless additional budget or new sources of leveraged funding can be identified.

This Plan illustrates how we propose to achieve annual and lifetime energy savings, while providing grid benefits and delivering non-energy benefits that create economic and environmental successes for all customers, create new and maintain existing jobs, and reach all customers in diverse socioeconomic segments of our community.

[11] *"Biden Administration Implements New Cost-Saving Energy Efficiency Standards for Light Bulbs,"* (Washington, D.C.: U.S. Department of Energy), 2022.

In PY19, we outlined the following three Core Areas, with a total of seven objectives, and we plan to maintain them in the next PY cycle. While the Core Areas remain the same, we modified some of the objectives to align our programs to meet current external drivers and priorities. The Core Areas are described in greater detail in subsequent sections.

CORE AREA #1: CLEAN ENERGY TECHNOLOGIES & ENERGY OPTIMIZATION

Accelerate Hawai'i's transition to clean, resilient, cost-effective energy systems.

▶ **Objective 1:** *Reduce system peak demand (kW), support deployment of flexible load technologies, and reduce energy (kWh) usage in alignment with the state's Energy Efficiency Portfolio Standards (EEPS).*

▶ **Objective 2:** *Support the reduction of carbon emissions from buildings and ground transportation.*

▶ **Objective 3:** *Transform buildings into smart, resilient grid resources.*

CORE AREA #2: ACCESSIBILITY & AFFORDABILITY

Include everyone in the clean energy transition.

▶ **Objective 4:** *Provide financial assistance to low-income households, small businesses, and other hard-to-reach customer segments. Utilize partnerships where possible to expand impact.*

CORE AREA #3: MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

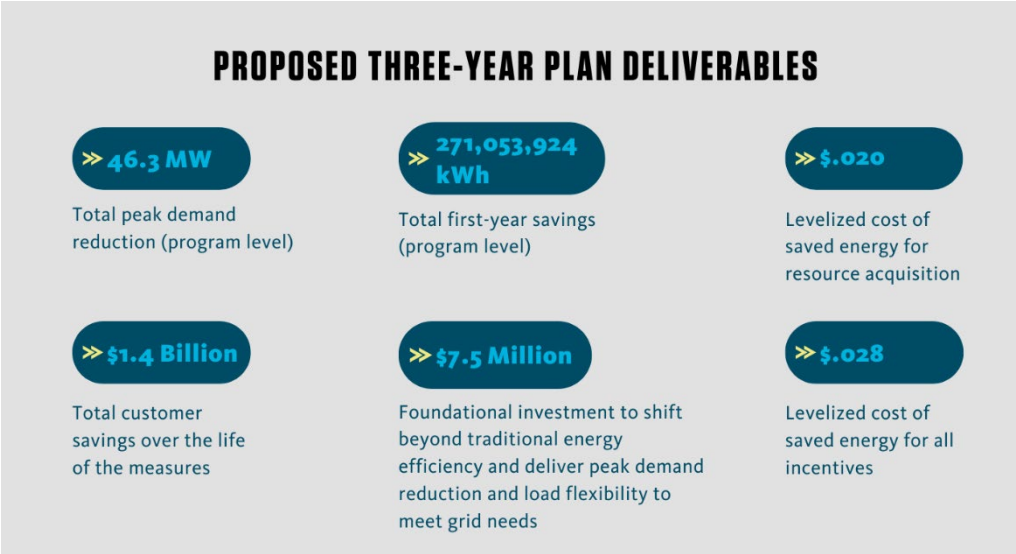
Strengthen local communities and businesses, and boost Hawai'i's economy.

▶ **Objective 5:** *Influence long-lasting changes through strategic interventions to overcome market barriers.*

▶ **Objective 6:** *Leverage federal, state, and local funding for clean energy technologies and workforce development.*

▶ **Objective 7:** *Enable smart energy choices through increasing energy awareness and literacy.*

Overall, Hawai'i Energy will deliver the following:



For full details of incentive budget and impact, see Appendix C.

Over the next three PYs, we will continue our core traditional business and residential energy-efficiency programs, while going deeper into hard-to-reach markets to ensure access and affordability for those who need it most. We will also enhance our efforts to deliver valuable peak demand reduction and load flexibility to the grid, to address capacity shortfalls on O'ahu and Maui.

Current Assumptions to Consider When Reviewing This Plan:

The following key assumptions have underpinned this planning effort:

- Budget based on $113,600,000 over three years
- Increased incentives on average by 12% at a portfolio level
- Shifted **70/30 split** between incentive and non-incentive in favor of incentives at **74/26**
- Shifted **45/55 split** between residential and business to **41/59** to respond to market needs
- Focus on **demand flexibility and energy optimization**
- Continued reduction in investment and savings from lighting
- Forecasting three years based on **current year TRM** for a PY22-24 plan, with limited visibility into future analysis
- Anticipating **avoided cost updates** in the future if available.
    - Recognizing there is a higher cost/value to kW during the utility peak

1.4. Enabling Investments

Competent and Highly Qualified Staff and Partners

Hawai'i Energy is continuously improving our team and organization, while scaling efforts to maximize ratepayer funds and provide ongoing value to customers. In order to achieve the goals laid out in this plan, it is important that we have the right team and partners. The Hawai'i Energy staff has a strong track record of success, which has garnered local and national recognition. The Program has been awarded the ENERGY STAR® Partner of the Year Award in Program Administration for the past two years. Administered by Leidos, Hawai'i Energy has been named one of Hawai'i's Best Places to Work for five consecutive years by *Hawai'i Business Magazine*. Led by Executive Director Caroline Carl, who has more than 13 years in the energy and sustainability sector and 11 years with the Hawai'i Energy program, the organization is operating from a strong base.

While employee attrition has increased from previous years (much like every organization in Hawai'i), Leidos/Hawai'i Energy remains an attractive place to work, and recruitment and retention activities will be increasing over the next six months. We will also be making the necessary investments into professional development and training, given the increasing importance of Energy Optimization initiatives and other rapidly advancing technologies.

Additionally, key subcontractors, such as Honeywell, Blue Planet Foundation, and VEIC, will continue to provide services such as program planning, rebate administration, outreach and education, and technical expertise to round out some of the other areas.

Last but certainly not least, the partnerships with our Clean Energy Allies, community partners, and other subcontractors will provide the necessary program implementation services needed to achieve our aggressive goals.

Organizational Investments

Hawai'i Energy works continuously to improve the team and operations, while scaling efforts to maximize ratepayer funds and provide ongoing value to customers. Making investments into the organization and our systems is important to streamline efforts and improve the customer experience.

One of the most significant investments has been made into the Amplify system to enhance online customer experience and increase customer engagement. Some of the biggest upgrades to our Residential and Commercial Programs include:

- Online incentive submission capabilities (in the works pre-pandemic, but now of significant importance given COVID challenges)
- Ability for customers/contractors to see "real time" rebate/payment status online
- Support case logging online to track program requests (versus via email)

Investments have also been made to enhance our Clean Energy Ally Portal. Enhancements include:

- Gamification functionality to track progress towards rewards programs
- Calendar detailing Program trainings and events
- Resource Library containing program documents and applications
- Targeted marketing area customized to CEAs

The integration of new Marketing capabilities is also underway. These capabilities will help increase organizational reach and impact by leveraging market data. Marketing system upgrades include:

- The ability to send the right message to the right person at the right time
- Customer participation in journeys based on their engagement
- Automated creation of segmented mailing audiences with AMPLIFY data

The Program also worked to transition all payments to a local Hawai'i bank in order to shorten customer payment timelines.

Performance Metrics

Meeting the targets set forth in this Plan will require Hawai'i Energy to innovate and maximize customer service, energy efficiency delivery, and accelerate market transformation. Our approach will continue to evolve and provide more technical and professional services to complement financial incentives to remove more of the barriers customers face in implementing energy projects. Being a trusted energy advisor is becoming increasingly more important as technologies advance and become more complex. The Hawai'i Energy program transition incorporates an intentional focus on energy services to assist customers with the planning, design and evaluation of energy efficiency options. These services and bundled program packages will allow customers to take a more holistic approach to energy management.

While we continue to raise the bar for energy efficiency programs, it is important to note that sustaining this level of program-attributed goals becomes increasingly challenging year after year. Rising baselines and modifications to net-to-gross ratios continue to reduce claimable savings opportunities. Over the next three years, Hawai'i Energy will develop ways to mine savings from more costly and challenging projects and market segments, including more integrated demand side management initiatives that provide additional grid services.

We will use the following metrics to track progress to goals and measure our overall impact:

- Energy Savings
- Avoided GHG
- Load flexibility
- Island equity
- Customer satisfaction
- Investment in accessibility and affordability

Through the course of the proposed three-year plan, we anticipate updates/inclusions from new Baseline and Potential studies, local and national legislative and policy changes, updates to utility avoided cost metrics, and program evaluation results. We will work closely with the Energy Efficiency Manager to evolve metrics in alignment with our strategic vision. We encourage the ongoing evolution of our Program's metrics and remain open to continuing dialogue.

Hawai'i Energy

IMPLEMENTATION OF STRATEGY

CLEAN ENERGY TECHNOLOGIES & ENERGY OPTIMIZATION INITIATIVES

ACCESSIBILITY & AFFORDABILITY

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

Triennial Plan

2. IMPLEMENTATION OF STRATEGY

2.1. Core Area #1 - Clean Energy Technologies & Energy Optimization Initiatives

Objective: Accelerate Hawai'i's transition to clean, resilient, cost-effective energy systems.

▶ **Objective 1:** *Reduce system peak demand (kW), support deployment of flexible load technologies, and reduce energy (kWh) usage in alignment with the state's Energy Efficiency Portfolio Standards (EEPS).*

▶ **Objective 2:** *Support the reduction of carbon emissions from buildings and ground transportation.*

▶ **Objective 3:** *Transform buildings into smart, resilient grid resources.*

Hawai'i Energy will continue to accelerate the state's transition to a clean, resilient and cost-effective energy system. In addition to core energy efficiency programming that will remain in place to focus on bill reduction for customers across all kWh, the Program will support emissions reductions, peak demand reduction, and load flexibility to facilitate the islands' rapid transition to 100% renewable energy and address capacity shortfalls from power plant closures.

In light of the AES coal plant retirement coupled with increased daytime renewable energy production and the uptick in battery storage systems, this Plan reflects a significant increase in focus and incentives to align energy and demand savings with peak utility demand periods. As such, our Energy Optimization Initiatives (EOI) have taken on a greater role and importance in the program portfolio to better facilitate the integration of energy storage, demand response and clean transportation technologies to enable a more flexible grid.

The Program will work aggressively to enroll customers in Power Move, which offers enhanced incentives for load shifting and commercial energy storage installations in support of the HECO Battery Bonus emergency demand response program. We will also explore opportunities to build on our heat pump water heater (HPWH) virtual power plant program, which currently supports the Waimānalo community by providing HPWH replacements paired with enrollment in HECO grid-service programs. This program aims to provide targeted communities with energy savings, which we are aiming to expand to other communities.

Residential and business clean energy technology programs provide direct technical assistance and financial incentives to accelerate the adoption of least-cost energy choices for residents and businesses in Hawai'i.

Technical assistance may include (depending on the customer):

- Audits
- Specific support for project scoping
- Energy modeling
- Customer data analytics via regression models
- Review of ongoing commissioning work
- Customer-sited staffing support
- Code compliance review
- Appliance standards education

In this capacity, Hawai'i Energy is an important and objective market facilitator to advance the state's 100% clean energy goal and can serve as a trusted energy advisor for all business and residential customers.

With rapidly evolving technology, we have seen an improvement in efficiency of many types of equipment and devices. Paired with the continued emergence and capabilities of intelligent and connected products, equipment, and systems, there are increased demand flexibility opportunities for our programs to accelerate the realization of buildings as a grid resource.

2.1.1. Business Programs

As we navigate the post-pandemic world amidst the backdrop of supply chain uncertainty and rising costs due to inflation, the Program has experienced limited new project activity during PY21, and there remains significant risk for delays in the development of new projects. These circumstances could have lasting effects on impact in PY22 and beyond. Unfortunately, the concerns around potential capacity shortfalls on both O'ahu and Maui in the coming years only further underscore the critical need for pipeline development.

As such, it is more important than ever for the business portfolio to focus on deeper engagement over the next 36 months. We must continue to move beyond traditional incentive programs and incorporate more comprehensive offerings with a targeted focus on peak demand reduction and load flexibility opportunities. This is a critical timeframe to capture deeper energy savings while preparing customers for the dynamic role they will play in the grid of the future.

The business program portfolio will focus on ***pipeline and backlog development*** through ***increasing and diversifying*** the following activities to maximize impact:

- **Targeting Large Energy Users Initiative – Power Move and Beyond** – In the next performance period, Hawai'i Energy will continue our targeted efforts to provide enhanced account management and engineering support to large coincident peak demand commercial and industrial facilities. The program will not only increase peak demand reduction and energy efficiency savings through low and no-cost operational

savings and identification of capital projects, but also through targeted **retrofits, optimization and load shifting with increased incentives for systems with coincident peak operating hours** under the Power Move program.

Key technologies include:

- Exterior and industrial lighting
- Major HVAC systems
- Transformers
- Refrigeration systems

Recognizing that targeting and enrolling large customers can take years, Hawai'i Energy accelerated efforts in PY21 to deepen engagement with key account customers and develop multi-year energy action plans. This is another reason why consistent program support that enables longer term customer investments is critical.

- **Increasing Budgets**:
  - **Energy audits** to create a path for contractors to develop potential projects
  - Multifamily and commercial space **submetering**, which had good participation in PY21
  - **New construction energy modeling support**—a program that is leading to deeper relationships with developers and more conversations around energy efficiency for multifamily new construction
  - **Metering and monitoring** to provide customers with permanent or reusable energy meters that can capture equipment-level energy savings for projects, give customers more granular energy data, and ultimately help them better understand their energy use at the specific equipment load level so they can optimize energy management.
  - Increased focus on **custom refrigeration** and high-efficiency **commercial kitchen equipment**

Key initiative areas over the next three PYs remain consistent with the previous triennial plan, prioritizing *Business Energy Advising* and *Supply Chain Engagement*. Programs will focus on deeper energy savings, providing better customer support in light of evolving grid needs, and incorporating an intentional focus on assisting customers with the planning, design and evaluation of energy efficiency options. Our holistic approach will aim to connect customers with our extensive network of resources (including financing services, Clean Energy Allies and/or the distributors and manufacturers that influence the local supply chain) and address barriers – beyond financial – that prevent deeper savings from occurring.

2.1.1.1. Business Energy Advising

Energy Advisory Services

Our Energy Advisor team continues to deepen its insight into the complexity in moving commercial energy efficiency projects forward. Our Energy Advisors have also developed strong relationships with customers who have relied on them as their trusted advisor.

Below is a list of focus areas for Energy Advisors and Clean Energy Allies (CEAs):

Energy Advisory Services	
Champions for Our Customers:	While direct Program incentives remain important, it is even more critical that our Energy Advisors act as champions for the customers. This role can include: • Assistance outlining and addressing technical and financial barriers, and identifying solutions tailored to the unique challenges that face different sectors and/or facility types • Serving as the "Seal of Approval" with upper management by providing an unbiased, third-party support for the decision-making process of both the project and the contractor selection • Providing insights into best business practices for project development and selection, including feedback on RFP development (to ensure it includes qualifying equipment types), recommendations to get multiple bids, and review of savings calculations provided in bids to validate they would be acceptable for the Hawai'i Energy rebate verficiation process • Pointing customers in the direction of our CEA database as a way to search for contractors that are familiar with our programs
Design Guidance:	New construction design guidance to current energy efficiency practices and support for exceeding compliance to energy code

Driving Deeper Savings via Technical Assistance, Financial and Procurement Guidance:	To drive deeper energy savings and better empower our Energy Advisors and the engineering team that supports our customers and Clean Energy Allies, the Program will look to do the following: • Provide increased technical assistance at scoping, design, and review stages of project • Assist with financing options and conversations with decision makers to move projects forward • Provide guidance on procurement best practices and strategies • Increase the amount of "influence only" and "claim only" savings projects where the Energy Advisors focus on influencing investment in projects and removing other barriers, rather than providing rebates • To demonstrate our influence, our team will document how they are engaging with the facilities, the types of support being provided, and how they are estimating and attributing impact
Supporting Energy Efficiency Financing Mechanisms:	Upfront costs are often some of the largest barriers in moving forward with a project. While lighting projects typically provide an attractive and quick enough return on investment, the deeper energy-saving measures are left on the table. Due to competing needs for capital within an organization, having options to eliminate upfront costs and a positive cash flow is critical. • ***Energy as a Service (EaaS):*** Similar to a traditional power purchase agreement for PV, EaaS, is an all-inclusive, subscription-based pricing model that is established between the vendor and the customer of the project or group of projects. EaaS allows business to "pay as you go" and keeps the project financing off the balance sheet. Hawai'i Energy provides support in the form of incentives that can be either rolled into the lease/service model agreement (to bring down the cost) or paid directly to the customer. The Program has seen a number of successful projects emerge under this model in last two years. As options continue develop in the marketplace, the Program will continue to support this business model and pilot programs for market segments in which this solution is attractive and useful.

	• ***Leverage Available Financing Products to Drive Deeper Retrofits*** – Prior to the pandemic, Hawai'i Energy had made progress with local financing agencies to provide small businesses with access to financing packages designed to overcome the cost barriers associated with efficiency projects. This included discussions with local credit unions that were willing to consider smaller scale loans (up to $20k), including how our rebates could help buy down interest rates. While stalled throughout PY20-21, the Plan will see reengagement with our existing network to connect customers with the financing agencies that best suit to their needs.
Holistic Approach to Drive High-Performance Buildings:	The path to our low-carbon, clean energy future relies on the reduction of emissions from the existing commercial building stock. This will require a holistic approach to building management in order to drive deeper retrofits. Hawai'i Energy will build on our Power Move program, targeting higher efficiency equipment along with optimized systems and processes. The framework will include incentive stacking for retrofit packages that combine building automation systems with other distributed energy resources like energy storage, smart inverters, and workplace charging.
Continuing to Expand Education, Training and Benchmarking:	This will require expanded education and training offerings beyond traditional energy efficiency measures to include high efficiency refrigeration, energy management systems, demand response, energy storage and net-zero energy buildings. We will also support the counties' benchmarking efforts through incentives, training, data analysis, and technical assistance.

Energy Advisory Incentive Offers

Power Move Family of Rebates and Grid-Interactive Technologies – Driving Demand Savings and Load Flexibility:

A large contributor to our programming will be the Power Move program which consists of increased incentives for load reduction, primarily through energy efficiency technologies with highest coincident peak, and commercial energy storage dispatched during the peak evening hours.

Power Move Program	
Power Move Demand Savings Bonus:	We are targeting large commercial customers with increased incentives for peak demand savings attributed to energy efficiency retrofits, grid interactive technologies, system optimization, and operations & maintenance (O&M) improvements resulting from the retro-commissioning process. The PY21 measure mix under this special offer is as follows: • Exterior or industrial lighting • HVAC optimization • Energy management systems and controls • Transformers • Retrocommissioning tune-ups • EC motor retrofits with controls for industrial refrigeration • Uninterruptible power supply (UPS) retrofits Piloting this offer in PY21 has spurred customer and contractor innovation around load flexibility at customer sites beyond traditional energy efficiency projects. For example, a large university campus is interested in taking HVAC optimizatin to the next level to reduce peak load and maximize benefits from the Power Move Demand Savings Bonus offer. They are revamping their central plant energy management system first (an approximate 100 kW reduction) and will then explore how additional buildings' HVAC can be controlled, sequenced or set back between 5-9pm (an estimated 200+kW reduction) while balancing occupant comfort, operations and maintenance efforts, demand/energy savings, and incentives.

***Power Move Commercial Energy Storage Incentive*:**	This offer encourages customers to participate in load shifting through energy storage scheduled to dispatch during the evening peak. Our program requirements align with HECO's Battery Bonus program to encourage enrollment by helping customers maximize benefits for their committed capacity to the grid and to accelerate installations that will reduce utility peak demand through the period of the AES coal plant retirement. See the Energy Optimization Initiatives in *Section 2.1.3.1. Business – Customer-Sited Energy Storage Systems*.
Hotel Guest Room Energy Management Systems:	Increased incentives for these controls starting in PY20 have led to significant adoption through PY21 with installations in more than 10,000 hotel rooms in two years. This technology will remain a focus area as hotel guest room HVAC systems operate at 100% coincidence with the utility peak and customers have the option to obtain additional incentives for adding demand response capability to their systems. See the Energy Optimization Initiatives in *Section 2.1.3.1. Business – Demand Response Capable Hotel Guest Room Controls*.
Smart Device Grant Program:	This program promotes the installation of smart building controls that optimize HVAC and refrigeration for energy efficiency and peak demand reduction. See the Energy Optimization Initiatives in *Section 2.1.3.1 Business – Smart Devices*.

Whole Building Assistance – Building Project Pipelines via Technical and Services Support: These efforts represent a reinvestment in the Business Energy Services and Maintenance budget category to support additional technical assistance, metering, energy audits, and retro-commissioning projects. Emphasis will return to this deeper engagement that will help customers understand their energy use and prioritize their opportunities to save energy. Incentives will increase in PY22 and PY23 to support project pipeline development.

Table: Impacts to Energy Modeling, Metering & Monitoring, Energy Studies (Audits), Re/Retro-Commissioning

	PY21	PY22	% Change	PY23	% Change	PY24	% Change
Incentive Spend	$285,000	$412,000	44.6	$472,000	14.6	$472,000	0.0
Program-lvl kW	-	-	-	-	-	-	-
Program-lvl kWh	-	-	-	59,571	-	119,142	100.0

Whole Building Assistance	
Energy Audits:	An energy audit lays out the energy efficiency opportunities available to a customer to help them prioritize capital improvement projects, along with savings, cost, payback and even Hawai'i Energy incentives. The energy audit incentive will aid in building a pipeline of potential projects, while equipment incentives can help reduce the first cost to implement the measures found.
Metering and Monitoring:	Without granular energy data, it is difficult for customers to make sense of how their buildings, systems, and equipment are affecting their electric bill and overall operating budget. Supporting energy metering is a crucial first step in helping customers calculate the economics of energy efficiency projects and make the decision to prioritize them. Metering can also support equipment-level pre- and post-installation energy data to satisfy measurement and verification requirements for customized project incentives.
***New Construction Energy Modeling Incentive*:**	Incentives for energy modeling bring Hawai'i Energy into the conversation with developers at the early stages of design for new construction, particularly for multifamily or mixed-use buildings. This support leads to greater focus on whole building performance by optimizing interactive efficiencies across its various systems.
Recommissioning and Retro-Commissioning	The recommissioning/retro-commissioning measure incentivizes building owners to evaluate or periodically reevaluate the effectiveness and efficiency of current building systems for optimal performance. Tune-ups/equipment optimization with worthwhile returns on investment are likely to be found in the process, particularly in the area of low- and no-cost operations and maintenance. Larger projects such as equipment retrofits or optimization requiring capital investment are likely to be found which may be eligible for equipment incentives.

Submetering:	A key component of whole building efficiency is to empower occupants to manage their energy use. This offer incentivizes building owners and managers to bill tenants for their measured energy consumption, which has been proven to motivate tenants to use less electricity in order to reduce their electric bill costs.

Strategic Energy Management (SEM):

The goal of any SEM conversation is to help business customers think about how they can proactively manage their energy consumption and waste. As an account management tool, SEM helps to establish and frame a lasting partnership with the customer that is focused on facilitating conversations around continuously improving energy performance and increasing operational competencies and cost savings year after year.

Major components of an SEM program include:

- Assisting customers with the creation of an energy master plan
- Forming an energy team
- Attending formal SEM trainings
- Participating in peer-to-peer learning opportunities
- Conducting an Energy Treasure Hunt
- Implementing energy savings measures
- Creating activities to engage employees in energy management

Strategic Energy Management	
***Conducting Energy Treasure Hunts*:**	Hunts help to engage customers directly in identifying and prioritizing energy reduction efforts, from low-and no-cost opportunities to larger capital projects. Supported by robust data and savings analysis alongside engineering and technical insights, they also further build trust with customers and generate leads for more traditional resource acquisition projects, alongside energy savings that are achieved through sustained organizational change (behavior and work processes).

Building an Internal Team with an Energy Focus:	When integrated alongside SEM training curricula that introduce the concepts of organizational energy management systems and best practices, customers are also taught how to champion their own sustainability goals and meet other energy and environmental regulations or requirements at the local and national level.
Partnering with Cohorts:	In PY19-21, Hawai'i Energy offered the SEM curriculum to its customers. We partnered with the Hawai'i State Energy Office to engage a cohort of state agencies in energy management best practices, as well as a mixed cohort of commercial customers, including hospitality and retail. We also supported federal agencies in Hawai'i participating in the Pacific 50001 Ready Cohort led by the U.S. Department of Energy that follows a similar structure to SEM. Throughout, Hawai'i Energy also looked to leverage SEM principles in its day-to-day customer engagement and has offered stand-alone Energy Treasure Hunts for eight large customers in PY21. Over the next three Program Years, Hawai'i Energy will continue to utilize this holistic approach to help customers manage their energy more effectively and whether undergoing initial assessment, planning or project implementation, our role as a trusted advisor through SEM is expected to deliver more value than traditionally incentivized projects.

Energy-Water Nexus –Water and Wastewater Utilities:

Water and wastewater systems use an enormous amount of energy while providing services that are critical to public health and safety. Hawai'i Energy continues to collaborate with public and private water and wastewater utilities and provide energy efficiency incentives and technical support for strategic multi-year projects that improve system performance while achieving considerable energy savings.

Energy-Water Nexus	
***Water Utilities*:**	Since PY14, Hawai'i Energy has supported the County of Hawai'i's Department of Water Supply (DWS) with incentives for water system leak detection loggers with battery kits and technical assistance to analyze the energy savings resulting from leaks found and fixed. Our DWS partnership has resulted in 1,600 leak detection loggers deployed and approximately one million kWh in total first-year savings since PY14. As the leak detection project comes to an end in PY22, we will leverage this partnership to advance further water system improvements with DWS as well as other water utilities. We expect to support water/energy audits to develop and prioritize energy efficiency project pipelines, which may include higher efficiency pump replacements, variable speed drives on pumps and motors, further process recommendations to improve system leak detection, and more.
Wastewater Utilities:	Hawai'i Energy has engaged in discussions with the City & County of Honolulu's Environmental Services Division (ENV) for many years about a major UV disinfection system upgrade at its Sand Island Wastewater Treatment Plant. The project is seeing significant energy savings for the plant as phases come online through PY21 and PY22. We will continue working with other wastewater utilities to provide technical assistance, data analysis, and incentives for wastewater system improvements throughout PY22-24. Potential projects include pump retrofits and adding variable frequency drives on pumps and motors.

Codes and Standards

Hawai'i Energy will continue to work with stakeholders to support the state and counties with building energy code adoption and compliance. For PY22-24, these efforts will be funded through Market Transformation budgets with no in-cycle energy savings attributed to the Program. Program efforts could include:

- Advocacy and training for the adoption of county amendments for IECC 2018
- Support for county-specific stretch codes
- Coordination and customer engagement for the City & County of Honolulu's building benchmarking efforts (Bill 22)
- Implementation of the State's 2022 Lead by Example Bill (HB1801)

The Program expects any savings attribution from our proposed three-year efforts to be realized in PY25-27 (the following three-year cycle). We will work closely with the EEM and evaluators to develop the process for documenting and evaluating attribution.

Please see the Market Transformation and Economic Development section for more details.

2.1.1.2. Supply Chain Engagement

Clean Energy Ally-Driven Efficiency

Services to Engage CEAs

Clean Energy Allies are valuable contractors and service providers who partner with us to deliver energy efficiency and renewable energy products and expertise directly to island residents and businesses. Our CEA program supports and leverages architects, engineers, contractors, manufacturers and distributors to efficiently and cost-effectively increase program participation for both business and residential customers. Over the next three PYs, we will continue to expand and recruit new Allies to support the new initiatives and program offerings as well as deepen the relationship and engagement with existing Allies through expanded and improved program offerings.

Clean Energy Ally Engagement	
***Continue Improvement of the New Clean Energy Ally Portal*:**	Continue CEA portal enhancement which includes resources for CEAs to download rebate applications, view status of their projects, and track energy savings for the current Program Year. We will solicit CEA feedback and incorporate their feedback for future enhancement and functionality.

Increase Energy Audits to Drive Deeper Saving:	As previously mentioned, Hawai'i Energy will increase funding on energy audits focused on driving deeper savings beyond lighting. This will help Clean Energy Allies deliver necessary data and information to customers to make smart energy investments.
Incentivize CEAs who Provide Grid Services:	In addition to the continuation of standard efficiency programs driven by the Allies, Hawai'i Energy will also encourage and incentivize comprehensive energy service companies who drive "Buildings as a Grid Resource" through the installation of technologies that provide grid services.
Expand Benefits and Incentives for CEA High-Performers:	We will expand the CEA Energy Insider Rewards program that provides additional benefits and incentives for high performing contractors. CEAs who qualify as an Energy Insider currently receive bonus 'coupons,' which act as an additional financial incentive, as well as special access to technical trainings at a reduced co-pay or a sponsorship to Chamber of Commerce Hawai'i networking events. Our expansion plans include a contractor bonus program to drive projects and an option to qualify for Energy Insider Rewards based on kWh savings in addition to project count.
Empower CEAs with Data Analytics Services:	Hawai'i Energy will deploy data analytics services and metering to arm Clean Energy Allies with necessary data and information to help customers make smart energy investments. We are optimistic we can leverage our AMPLIFY portal capabilities to build out calculators to compare different return-on-investment (ROI) scenarios as well as potentially build in time-of-use (TOU) rates or other billing variables.
Offer Educational & Networking Events as well as Co-Marketing, Innovative Technology, Financing Training to CEAs:	To enhance CEAs' networking and networking opportunities, we will continue to support and promote the successful co-op advertising and co-op events program offerings, such as the "Cup of Joe" networking and "Lunch and Learns" events. The Program will continue offering training and development courses to support workforce development and technical training of CEAs. We will also develop and offer additional training for CEAs on leading-edge energy efficiency technologies and emerging and innovative financing options for themselves and their customers.

Enhanced Trade Organization Engagement:	We will enhance our engagement with trade organizations, such as the American Institute of Architects (Honolulu Chapter and statewide), U.S. Green Business Council, Building Owners and Managers Association, American Society of Heating Refrigeration and Air-Conditioning Engineers, Illumination Engineering Society, and other organizations to strengthen and deepen relationships with CEAs.

Equipment Incentive Offers

For the next performance period, we will continue to evolve incentive levels and measure offerings to achieve energy-saving retrofits beyond lighting with Program investments that align with grid needs. The planned blend of equipment measures achieves a balanced portfolio that increases investment in audits, retro-commissioning and new construction energy modeling support, and increases Program investments in additional energy benefits includes HVAC optimization, energy management controls, and grid services. Implementation details for each of these equipment groups can be found in the *Delivery Strategies* section of Appendix B.

Equipment Incentive Offers	
***Building Envelope*:**	Window tinting continues to be a simple, low-cost way to reduce solar heat gain in a building, improving occupant comfort and reducing air conditioning energy use.
Commercial Kitchen Equipment (CKE):	With the launch of the commercial kitchen midstream program in PY21, new channel partners will be brought on to continue increasing the number of efficient equipment models being purchased. This program is tracked in Commercial A&A, as the vast majority of customers purchasing CKE are small businesses such as restaurants and convenience stores that are considered hard-to-reach.
HVAC:	We will increase participation in HVAC equipment and controls projects by piloting HVAC under Energy Advantage and midstream through new channel partners, as well as the Power Move Demand Savings Bonus for custom HVAC projects such as HVAC optimization or energy management systems.

Lighting:	We continue to leverage midstream distributors to reach customers who traditionally do not participate in efficiency, while also working with installation contractors to provide downstream incentives for equipment and controls.
New Construction & Major Renovation:	Focused engagement with developers is creating more interest in our program incentives and in incorporating energy efficiency at the design stage. We are maximizing impact for the developer/owner and future tenants and increasing investment in new construction energy modeling and post-construction incentives.
Pumps and Motors:	Electrically commutated (EC) motors for HVAC and variable frequency drives (VFDs) for pool pumps are good options in the contractor's toolkit for commercial and multifamily buildings, respectively.
Refrigeration:	Along with focused Market Transformation efforts for both contractors and customers around refrigeration best practices, we will continue to offer incentives for custom refrigeration projects (walk-in coolers, industrial applications), high efficiency evaporator and condensing unit retrofits, adding doors, EC motors, and other key refrigeration measures for cold storage, grocery, retail, hotel, and restaurant customers. We will increase customer participation by closely collaborating with refrigeration contractors on refrigeration incentives.
Smart Devices:	We will work with GridPoint and other vendors to overcome barriers to participation, scale the number of installations, and support customers' participation in emergency demand response programs as they become available.
Industrial Equipment (Transformers):	Transformer retrofits result in considerable energy savings, though they do not occur often due to the long equipment life of 30 or more years. We will take advantage of opportunities to support when customers are seeking multiple transformer retrofits across their facilities.

Water Heating:	Water heater retrofits come with a long lead time due to permitting but result in significant savings.
Customized Projects:	We will standardize formal reporting and saving calculation methods for custom projects to engage more customers with holistic solutions that meet their needs while addressing potential issues that may impede Program savings claims. Methods include comparing savings to predicted regression models that are informed by utility/equipment meter data and utilizing engineering calculations-based equipment specifications. Additionally, we will offer increased incentives under the Power Move Demand Savings Bonus to drive customized rebate projects with notable demand savings.

Distributor-Driven Efficiency

To continue driving customer adoption of energy-efficient equipment at the point-of-sale, Hawai'i Energy seeks to expand the commercial kitchen equipment program that launched in PY21, with a plan to boost participation by recruiting additional distributors, providing distributors with sufficient training to be able to discuss the benefits of high efficiency equipment with customers, and providing promotional/marketing materials and support for eligible equipment. We will also develop the infrastructure to pilot an HVAC midstream program and improve the lighting midstream program. We will need to collaborate with participating distributors (for all midstream programs) to tackle supply chain delays, increased costs of goods and services, and other market challenges to grow our midstream programs through PY24.

2.1.2. Residential

Hawai'i Energy continues our strategic transition towards a comprehensive residential energy services program. As the energy landscape continues to change, helping our island residents make smart energy choices continues to be an important service. As already noted, supply chain and market inflation are barriers for market adoption as customers either cannot find energy efficient product or simply cannot afford it. For the residential portfolio, on average, Hawai'i Energy will be increasing incentives 15-20% to remain resilient during these continued unprecedented times. While it is not possible to identify the perfect incentive level at the outset of any program year, the team continuously monitors participation against goals and will actively reduce incentives if either costs decline or the levels are overdriving program objectives and market impact.

Key initiatives for the portfolio include:

- Upstream lighting
- Online energy marketplace
- Retailer and distributor midstream / instant rebate programs
- Clean Energy Ally training platform
- Water heating enhanced incentives
- Residential new construction program
- Whole house energy assessment and retrofit program
- Connected IDSM programs

These programs and initiatives are designed to support an evolving clean energy system in Hawai'i, create resilient local economies and homes, and increase the number of clean energy jobs and businesses in the state.

2.1.2.1. Direct Consumer Purchases

Upstream Lighting Program

a) **Specialty lighting:** The Upstream Lighting program will continue to shift emphasis from standard screw-in bulbs to specialty lighting bulbs such as PARs, MR16s, decorative string lights and security lighting. Omni-directional lighting counts will be reduced 42% in PY22, with subsequent annual reductions and removal from the portfolio completely by the end of PY24.

Table 1 - Residential Lighting Impacts

Residential Upstream Lighting	2021	2022	% Change	2023	% Change	2024	% Change
LED							
# of Bulbs	558,000	320,000	-42.7	200,000	-37.5	20,000	-90.0
Incentive Spend	$ 849,000	$ 510,000	-39.9	$ 285,000	-44.1	$ 60,000	-78.9
Program-lvl kW	2,352	385	-83.6	240	-37.5	24	-90.0
Program-lvl kWh	11,671,556	2,467,207	-78.9	1,542,005	-37.5	154,200	-90.0
LED Smart Bulb							
# of Bulbs	45,000	22,500	-50.0	22,500	0.0	22,500	0.0
Incentive Spend	$ 450,000	$ 225,000	-50.0	$ 225,000	0.0	$ 225,000	0.0
Program-lvl kW	190	27	-85.7	27	0.0	27	0.0
Program-lvl kWh	941,254	173,476	-81.6	173,476	0.0	173,476	0.0
LED Specialty Lamps							
# of Bulbs	225,000	362,500	61.1	362,500	0.0	362,500	0.0
Incentive Spend	$ 506,250	$ 725,000	43.2	$ 725,000	0.0	$ 725,000	0.0
Program-lvl kW	948	436	-54.1	436	0.0	436	0.0
Program-lvl kWh	4,706,272	2,794,883	-40.6	2,794,883	0.0	2,794,883	0.0

Online Energy Marketplace

a) **Leverage online marketplace to expand efficiency offerings:** Hawai'i Energy will continue to maintain and operate our marketplace that offers energy efficient products not typically found on island retail shelves, such as advanced power strips.

b) **Product cross-promotion:** We will cross-promote customer access to high efficiency and "grid-forward"/connected products.

c) **Information to drive customer decision-making:** The online marketplace will provide customer-focused information to support clean energy choices and comparison of various products.

Retail Clean Energy Products

a) **Retailer / distributor midstream and instant rebate programs:** Hawai'i Energy will continue to engage with a number of retailer and distributor/dealer midstream programs providing point-of-sale, instant rebates at brick-and-mortar locations. These incentives help to increase stocking and sales of the most efficient equipment while streamlining back-end processes to reduce administrative costs and provide efficient delivery of Hawai'i Energy incentives to customers.

   Technology covered via the midstream and instant rebate programs include:
   - Lighting
   - HVAC and air quality (window A/C, dehumidifiers and air cleaners, and smart thermostats)
   - Appliances such as washers, dryers, heat pumps, freezers and refrigerators,
   - Consumer electronics (TVs, soundbars, monitors)

b) **Incentives for VFD-controlled pool pumps:** Enhanced program and strategy to target and educate pool technicians about Hawai'i Energy's programs, as well as pool pump replacement.

c) **Expanded early retirement appliance program with increased incentives:** Hawai'i Energy will expand the early retirement appliance program to target removal of secondary refrigerators and upgrading inefficient cooling, dehumidifying and air purifying equipment.

2.1.2.2. Clean Energy Ally-Integrated Offerings

New Benefit Offerings to Engage Clean Energy Allies

The Clean Energy Ally program helps drive participation and amplify the connection of the Program with the customer. The Program has nurtured long-lasting relationships with the solar contractor industry for the past decade and as offerings have evolved and been designed for further market adoption, we have folded in residential HVAC contractors. The CEA program will expand to include more trade ally categories, such as pool pump installers and midstream suppliers/distributors, and include the following benefits:

CEA New Benefit Offerings	
***Tailored Training and Incentives*:**	The CEA program continues to act as a force multiplier for Hawai'i Energy's initiatives by building workforce capacity and impact through tailored training and incentives. We will continue to build out the technical support and training for CEAs to expand capabilities to market and sell energy efficiency and other IDSM services and technologies to their customers.
Parallel/Tiered Incentives to Drive Efficiency:	Hawai'i Energy will go beyond customer incentives to offer parallel or tiered incentives to distributors and contractors for increasing stocking, sales and installation of high efficiency and clean energy technologies.
Data Analytics:	Leverage data analytics services to provide sales tools to contractors to sell comprehensive energy retrofits and improve access to all residential households. While this is still in the early stages of development, our goal is to have a tool that can generate leads and connect customers with participating contractors.
Soliciting Trade Ally Feedback:	Continue to provide a trade ally feedback loop for input on improving program results and participation.
Trade Allies Awards and Recognition Program:	Continue awards and recognition program for top performing CEAs.

Trade Ally Online Portal:	Develop an online portal for easy application submission, tracking, and reporting.

CEA Enhanced Offerings	
***High-Efficiency Water Heating*:**	Water heating remains the single most impactful savings measure for the residential sector. Hawai'i Energy will accelerate heat pump water heater adoption with increased incentives and contractor/distributor bonuses. Heat pump water heaters will also remain available at retail locations via instant rebate. Solar thermal water heating and PV-direct water heater system installations will continue with instant rebates provided to customers by participating contractors at the point of sale. In addition, we will continue work with participating lending institutions to provide an incentive to buy down the interest charges on solar hot water systems. The maintenance-focused solar water heater tune-up program will be promoted via marketing efforts to drive participation.
Household Air Conditioning:	The Program will continue to expand our offerings to encourage efficiency improvements in household air conditioning (AC). In addition to the contractor driven VRF split system and central AC retrofit program, the window AC offering will now be offered via instant rebate at point of sale. We will also expand the residential AC tune-up program to encourage maximum efficiency of existing units.
Whole Home Retrofits:	Hawai'i Energy will take a comprehensive approach in assessing a home's energy efficiency and savings potential as well as evaluating its comfort and long-term value. The Program will provide home energy assessment services with customized recommendations to deliver whole-house solutions. Utilizing internal resources and participating contractors will guide the process for the customer to implement energy retrofits and other improvements, such as installation of energy-efficient products, appliance and equipment replacements, and building envelope upgrades.

	The home performance program will leverage the complementary Clean Energy Ally program to achieve greater impact through established market actors.

Residential New Construction & Retrofits	
***Expanded Engineering Support and Incentives for High-Efficiency Homes*:**	Hawai'i Energy will expand our engineering design support and incentives for high efficiency home building designs and systems and the incorporation of electric vehicle (EV) charging, connected appliances and energy storage.
Strong Partnerships to Promote Bundled Efficiency Measures:	The Program will strengthen partnerships with Hawai'i housing agencies and developers to package energy efficiency with clean energy solutions and expanded access to electric vehicle charging.
Codes and Standards:	The Residential New Construction program incentivizes builders, architects, and/or developers to exceed code compliance and prioritize energy efficient design and whole house energy performance in the construction of new housing. We hope to offer engineering design support to incorporate EV charging, connected appliance and energy storage, where applicable. As part of a broader suite of market transformation programs, Hawai'i Energy will support training initiatives for Clean Energy Allies and the broader Hawai'i building industry, especially as the Counties adopt various amendments that differ from each other (*see Market Transformation and Economic Development section*).

2.1.3. Energy Optimization Initiatives

Per the Commission Order No. 36708 in Docket No. 2007-0323[12] approving Hawai'i Energy's 2019-2021 Triennial Plan, "Energy Optimization" initiatives include: (a) metering and monitoring services, (b) incentive offers for grid service capable technologies that enable customers to participate in demand response programs, (c) incentive offers for customer-sited energy storage systems, and (d) incentive offers to promote EV charging infrastructure.

We are committed to providing foundational incentives to promote grid-service capable technologies that can be installed today, are advanced enough to adapt to future utility programs, and can optimize customer savings while minimizing negative impact to the grid. It is important that these programs help prepare customers for future utility offerings, particularly when customers are making purchasing decisions on equipment with a long lifetime that can run 10 to 20 years.

Hawai'i Energy has established guiding principles to inform planning efforts for peak demand targeting. Hawai'i Energy will prioritize program incentives for technologies that have both energy efficiency (kWh and kW savings) and additional potential for capacity and/or fast frequency response for Demand Response events. We continue to look for alignment with existing or near-term utility demand response and grid-services programs. We are targeting deployment in sectors and/or markets with high coincident peak demand with the system peak (e.g., hospitality, grocery sectors).

Despite initial delays in the roll out of energy optimization initiatives in PY19-20 due to COVID and budget constraints, Hawai'i Energy has successfully launched programming for grid-interactive water heating (standard electric and heat pumps), commercial smart devices and controls, and commercial battery storage in the last triennial period. Our EOI efforts will continue to focus on the critical emergency demand response efforts needed to offset capacity shortfall concerns on O'ahu and Maui. In PY22, Hawai'i Energy is increasing overall incentives for these areas by about $1.6 million to advance programs supporting grid flexibility in the immediate term.

2.1.3.1. Business

Demand-Response Ready

In response to the ever-changing needs of the electric grid, Hawai'i Energy remains committed to preparing and empowering customers to be ready to participate in grid service programs in their current form and as they evolve in the coming years. Currently, the Hawaiian Electric Companies have demand response opportunities for business customers within their CDLC

[12] Kealoha, Brian. *Response to Order #36708: 1) Approving the Hawai'i Energy Program Triennial Plan for Program Years 2019-2021, 2) Approving the Public Benefits Fee Budget for Program Years 2019-2021, and 3) Setting the Public Benefits Fee Surcharge*, (Honolulu: Hawai'i Energy), 2019.

and Battery Bonus scheduled dispatch programs. There is also the potential for businesses to participate in the existing GSPA with selected aggregators.

Key areas that the Hawai'i Energy currently sees opportunities to support enrollment in Demand Response include:

Demand Response Capable Hotel Guest Room Controls

In PY20, we increased incentives for demand response-capable hotel guest room controls. We will continue to offer incentives with the following targets:

- 5,000 units in PY22
- 2,000 units in PY23
- 1,000 units in PY24

By leveraging our established relationships, the team has been actively engaging with hotel customers to evaluate EOI opportunities. Notably, the increased incentive for hotel guest room controls with demand response capabilities drove project adoption far beyond initial expectations. As a result, we deployed advanced hotel guest room controls in over 6,500 rooms in PY20, reducing peak demand by 1.9 MW and saving over 8 million kWh annually. PY21 is on track to match or surpass last year's impact with an additional 1MW in peak demand reduction already attributed to hotel guest room controls installations since July 2021.

With over 60,000 hotel rooms in Honolulu, Maui and Hawai'i counties, this program remains a key focus for the coming years. Hotel guest rooms operate at 100% coincidence with the utility peak, making enhanced controls an excellent option for load reduction. They are also relatively lower cost when compared to other HVAC measures, so the increased incentives have a significant impact on buying power.

There are a number of Waikiki-based hotel customers that are already participants in Hawaiian Electric's Commercial Direct Load Control program. As we move into PY22 and PY23, Hawai'i Energy will continue to collaborate with HECO to refine the equipment requirements so that devices can be best suited to enroll in demand response programs. We will be closely monitoring the results of this effort and incorporate lessons learned for future projects.

Smart Devices

In January 2021, Hawai'i Energy launched the Smart Device Grant Program with our CEA GridPoint. This pilot program promoted the installation of smart building controls that optimize HVAC and refrigeration for energy efficiency and peak demand reduction. To date, GridPoint's smart building controls have been installed in 40 small businesses.

Images courtesy of GridPoint

These installations are providing data analytics on both energy efficiency savings and potential demand response capacity. GridPoint estimates their small and medium commercial buildings can provide around 4kW of on-demand capacity per site for up to four-hour long curtailment events. While this has been initiated as a Hawai'i Energy pilot, we are currently working with the Hawaiian Electric Customer Energy Resources (CER) team to provide the data from these devices and further explore the development of the communications protocols needed to connect with HECO's Demand Response Management System (DRMS).

For the next performance period, we are looking to accelerate these efforts (with GridPoint and other vendors) to maximize energy savings and support these customers' participation in emergency demand response programs. We anticipate we can scale to a regular program offering incentivizing between 250-500 devices each year with current budget allocations. We will increase our collaboration efforts with HECO to capture and utilize this emerging grid flexibility that has been deployed. More than $650,000 will be invested in smart-device installations over the next three years to support this effort.

Customer-Sited Energy Storage Systems

In addition to more traditional technologies that enable demand response capabilities to buildings and systems, battery energy storage systems (BESS) have been identified to provide numerous benefit streams (of which demand response is one).

With the critical need for emergency demand response coupled with ongoing supply chain and permitting challenges, incentives can help facilitate more favorable economics for project deployment. These battery deployments can be used to shift load off the evening peak and flatten the system's duck curve.

Power Move - Commercial Energy Storage

Launched in February 2022, the Commercial Energy Storage program under Power Move seeks to support enrollment in HECO's Battery Bonus program by incentivizing commercial-battery storage installations on O'ahu to reduce load during evening peak (5:00 to 9:00 p.m.) with enhanced incentives for load reduction between 6:00 and 8:30 p.m. We anticipate O'ahu's project development to continue through June of 2023. The total target spend for our Power Move Commercial Energy Storage program in PY22 is approximately $1.6-2 million. We have maintained the Power Move program into PY23 and PY24 at reduced incentive levels in order to ensure that demand side programming is available if any further delays in utility-scale renewable project deployment arise.

We also are expanding our customer and contractor engagement to develop potential pipeline projects for Maui as HECO looks to expand capacity programs in light of the maintenance and supply issues recently announced.

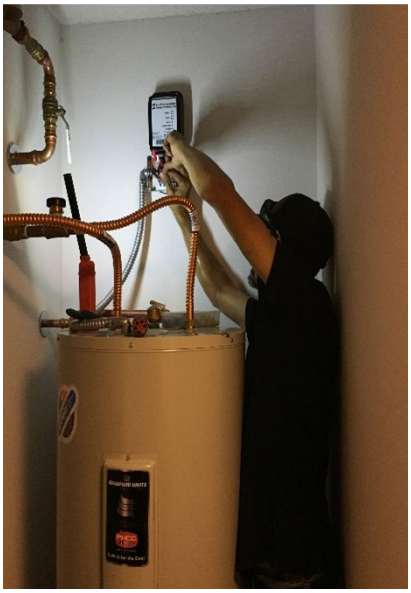
Metering and Monitoring

One major barrier identified in the installation or deployment of grid-service technologies is the current lack of customer interval data that is necessary to design solutions, both at the main meter and for certain key energy-using equipment. To alleviate this market barrier, Hawai'i Energy will increase our metering and monitoring support for customers in order to provide them access to more granular energy usage data. The Hawai'i Energy Program will also benefit by having increased data for program design, marketing and implementation.

2.1.3.2. Residential

Demand Response

Grid Interactive Water Heaters (GIWH) through Hawaiian Electric's Grid Service Purchase Agreement (GSPA)



Hawai'i Energy will continue to support Shifted Energy as they enroll capacity in HECO's GSPA demand response programs. These efforts will provide incentives for grid-interactive water heating deployment in low- to moderate-income residents' homes and facilitate co-recruitment for our Energy Smart 4 Homes (ES4H) energy efficiency direct install program. Over the next three years, we estimate further deployment of controls for over 3,500 water heaters. We will also support pool pump enrollment as those assets are identified.

Hawai'i Energy will also continue to monitor HECO's progress on their efforts to upgrade water heating controls for legacy residential direct load control customers (e.g., Energy Scout customers). As opportunities arise to support customer engagement or adoptions of efficiency measures, we will evaluate in relation to other budget commitments.

Heat Pump Water Heaters with Controls

Building on PY21's HPWH demonstration pilot, we are planning to expand HPWH control installations to over 80 systems a year. This includes more than 200 homes in targeted military housing communities that will be retrofitting end-of-life solar water heating systems over the next 36 months.

Demonstration efforts will include testing for grid and ancillary service capabilities like load reduction, load build, emergency demand response and frequency response. These insights will help to inform full market deployment potential.

Emerging Technologies

Hawai'i Energy will continue to engage with emerging technology vendors and service providers to fold in incentive pilots to drive adoption. For PY22, we will continue to support the deployment of smart electrical panels with Span and look to identify other energy optimization opportunities through our partnership with Elemental Excelerator (EEx).

Residential Energy Storage Systems

While Hawai'i Energy's energy storage programming remains largely focused on the commercial sector, we have earmarked funds for PY22-24 to support deployment of PV+ battery systems at residential townhomes. Permitting constraints have left many townhome residents underserved in the solar and storage market. As the market expands and more locational data becomes available, we anticipate an ongoing evolution of the incentive structure. We will actively engage with industry stakeholders to ensure that the program design is properly aligned with changing customer and grid needs.

2.2. Core Area #2 – Accessibility and Affordability

Objective: Include everyone in the clean energy transition.

▶ **Objective 4:** *Provide financial assistance to low-income households, small businesses, and other hard-to-reach customer segments. Utilize partnerships where possible to expand impact.*

With the highest average electricity costs in the nation,[13] reducing energy costs is important for residents and businesses in Hawai'i to survive and thrive. As of 2018, households on average spent 1.9% of income on electricity. Comparatively, the energy burden for low-income households is much greater. The state Department of Business, Economic Development and Tourism report found that on average households with earnings below the 30% AMI spent 11% of earnings on electricity, and those below the Federal Poverty Level had an average energy burden of 15.2% as of 2018.[14] Nationally, the economic hardships caused by the COVID-19 pandemic have increased energy burdens, especially for LMI communities and small businesses.

In the last triennial, Hawai'i Energy expanded the diversity and depth of technical assistance and financial incentives directed toward LMI and hard-to-reach (HTR) communities as well as small businesses and nonprofits. This was in recognition that LMI households are more likely to face high energy burdens with a higher percentage of their total household income going toward paying utility bills. The increased investment came at a time when many customers faced significant financial hardships as a result of the pandemic, while their electricity bills increased due to more mandated activities at home, such as working, schooling and dining.

There continues to be challenges in reaching vulnerable populations who face unique barriers to participating, including lack of access to energy efficiency information, capital and/or credit to pay for high up-front costs of energy efficiency investments. Additionally, split incentives between owners and renters coupled with an aging housing stock further complicates the delivery of efficiency upgrades.

Our programming for the next performance period will work to address these barriers, recognizing that while there are additional costs to deliver programs and services to this group, there is a large potential impact. We will target our services to specific underserved market segments, with a special focus on providing longer-term support to projects that serve low-income and multifamily buildings. This Plan builds upon some of these successes in the form of program expansion, increased community partnerships, and our collaboration with Hawaiian Electric.

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[13] State Electricity Profiles. EIA. 2021.

[14] *Electricity Burdens on Hawai'i Households*, (Honolulu: State of Hawai'i Department of Business, Economic Development & Tourism, Research and Economic Analysis Division), 2021.

2.2.1. Business

Energy Advantage

Since its inception in 2011, the Energy Advantage (EA) program has been a staple program of Hawai'i Energy's efforts to ensure HTR communities have access to the same energy-saving tools and programs as the rest of the state. Parameters for qualifying for the EA program have remained unchanged to date with a targeted customer base including restaurants, not-for-profits, and other small businesses. Through enhanced rebates from traditional commercial program offerings and the development of a specific contractor base that understands both the program and its target customers, the EA program has proven to be a reliable, relatively turnkey, and low-cost avenue for qualifying customers to pursue the implementation of projects at their facilities that result in significant energy savings.

In 2021, we executed a complete overhaul of the Leidos AMPLIFY tool utilized by contractors for audits, approvals, invoicing, and project document submittals to improve the efficiency and user experience of the system. Continued feedback from the EA program contractors and Hawai'i Energy staff will be factored into further updates and modifications in PY22, PY23, and PY24. Each modification will be made with the same overarching goal — streamlining functionality of the rebate application process from start to finish to ensure continued contractor participation.

With planned similar budget levels for PY22, PY23, and PY24, the focus of the EA program will remain on providing qualifying Hawai'i small businesses, multifamily properties, restaurants, and not-for-profits with access to turnkey, reduced cost lighting upgrades. However, we recognize the need for the EA program to evolve in order to maximize its accessibility to Hawai'i's hard-to-reach communities and thus, will explore possibilities of opening up the program's parameters in a targeted fashion. We are considering expanding our EA efforts to include a pilot program that accepts HVAC equipment as an eligible equipment type, as well as examining ways to incorporate ENERGY STAR commercial kitchen equipment. Additionally, in PY21, Hawai'i Energy is launching a pilot customer-to-customer referral program designed to increase awareness and interest in the EA program at the customer level. If successful, such pilot programs would be expanded and built upon in PY22 and beyond.

EmPOWER Grant

Energy Grant recipient Big Island Brewhaus

In 2021, Hawai'i Energy's EmPOWER Grant program marked the second consecutive year of making grants available to qualifying applicants. We modified the EmPOWER Grant program from its first iteration in 2020, which was created as a direct response to the economic uncertainty Hawai'i's small businesses were facing at the height of the COVID-19 pandemic. In 2021, although grants were capped at $5,000 per project (compared to $25,000 in 2020), the number of applicants remained high, with nearly 100 projects not receiving grant funding after the competitive review process played out and the program budget was expended.

Budget allowing, Hawai'i Energy will design and execute a grant program in PY22 modeled largely after PY21's successful program, including the $5,000 funding cap per project. Acting on lessons learned from PY21's program rollout, the PY22 grant program will be executed earlier in the program year, and the standard application period will go from one-month to two-months to ensure maximum reach to and participation. In PY23 and PY24, as the needs of Hawai'i's hard-to-reach small businesses, restaurants, and not-for-profits change, and as the energy saving opportunities associated with those needs shift, the grant program's design and structure will evolve and adjust as needed to ensure maximum reach, participation, and energy savings.

2.2.2. Residential

With the increases in fuel cost impacting electric bills, those with the highest energy burdens will be impacted the most. Hawai'i Energy will be adding new programming and modifying others in the hopes of making a bigger impact in P22 and beyond. Hawai'i Energy will support the diversity and depth of technical assistance and financial incentives directed towards low-income and hard-to-reach communities by spending **over $3.3 million per year.**

Here are a few of our immediate and longer-term programs to assist low-income and Asset-Limited, Income-Constrained, Employed (ALICE®) residents:

Enhance Existing Programs

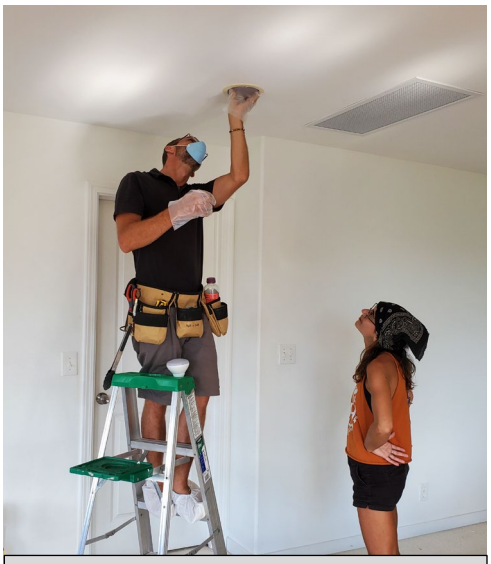
Community-Based Energy Efficiency (CBEE)

To increase adoption of energy efficiency solutions in hard-to-reach communities, Hawai'i Energy will build upon its successful Community-Based Energy Efficiency (CBEE) program for vulnerable populations. The CBEE framework targets specific HTR communities and is designed to span residential and commercial offerings in an integrated way. This turn-key

delivery approach will allow customers to access bundled services of energy-saving opportunities, installation services and grid services, and receive program incentives. By emphasizing partnerships with affordable housing providers and local nonprofits and community action groups with existing strong ties and relationships of trust, the CBEE program is closely integrated with other Accessibility & Affordability efforts.

Comprehensive and Integrated Services

Hawai'i Energy will evolve our existing portfolio of bundled programs to maximize low-income energy efficiency benefits, energy savings and participation and tailored to the needs of local communities. We will leverage outreach tools and technologies to achieve greater awareness of the financial, economic and environmental benefits and opportunities while realizing greater energy and financial savings.



Energy Smart 4 Homes installation

This may include a comprehensive package of engineering services, financing and financial incentives, and other informational resources tailored to individual organizational or household needs. The Program will seek out low-income (LI) households, including renter/owner-occupied units and single/multi-family buildings, and target existing and upcoming projects in transitional, affordable, and other subsidized housing. Hawai'i Energy will coordinate delivery of programs with other organizations with existing relationships to LI and harder to penetrate markets to best align and scale programs impacts and energy literacy.

Addressing Split-Incentives

Hawai'i Energy will enhance existing direct install and bulk purchase programs by increasing alignment with the replacement cycle for appliances in sub-metered rental units. We will connect with landlords and property managers to support their investments in high-efficiency appliances, even when the tenant pays the energy bill.

Build Energy Literacy

Community Action Group (CAG) Partnerships

Energy savings is an important component to financial literacy, and Hawai'i Energy is exploring how to leverage partner organizations to help educate and provide solutions to Hawai'i's ALICE residents. The Program will foster long-term relationships with high-performing CAGs that have built-in communication channels and relationships with households, building owners, and small businesses to expand access to energy literacy workshops, services and clean energy products.

We will also increase partnerships to enhance and streamline distribution of energy efficient products with public and private human services entities, health organizations, churches, food banks, and other non-profit agencies.

Focus on Tenant Behavior

Hawai'i Energy will engage renters/tenants in partnership with affordable housing providers to increase energy awareness and action through a campaign that takes advantage of a number of behavioral insight best practices to overcome known barriers in this hard-to-reach and underserved market area. These likely include trusted messaging, social incentives and feedback norms, salient prompts, and data analysis to validate and communicate results.

Hawai'i Energy will explore new programs focused on alleviating renter/tenants' energy usage and bills, with a possible grant program offered.

Track Data and Demographics

Leverage Existing Data and Refine Accessibility and Affordability Zip Codes: As data continues to be updated and gathered around customer energy burden, income level, etc., Hawai'i Energy will complete a yearly review of existing sources of data, as well as enhance our current program definitions of our HTR zip-code attributions.

Demographic Data for Program Evaluation: Hawai'i Energy will collect participant demographic data on program participation to evaluate program impact, level of service and design of programs.

Energy- and Non-Energy Metrics to Inform Effective HTR Programming: We will assess energy and non-energy program metrics that best achieve desired outcomes for low-income and HTR customers through Hawai'i Energy clean energy program services.

2.2.3. Incentive Offers

The following initiatives will leverage the strategies outlined above to go deeper with customers:

Targeted Single & Multi-Family Direct Install

The Program will continue with the current multi-family/single-family direct installation service package targeting HTR communities and publicly funded housing programs, such as rural communities in Maui and Hawai'i counties and the Section 8 Hawai'i housing voucher program. Hawai'i Energy also plans on keeping the Energy Smart 4 Homes self-certification process to reach customers who continue to experience financial burdens.

Appliance Trade-Up and Comprehensive Building Retrofits

Expand measures to include water heating, replacement of window air conditioners, smart appliances, building controls, EV charging and other common area upgrades. Hawai'i Energy partners with community-based organizations to recruit participants for these programs in targeted areas with a high monthly bill average. In an effort to support the partner's time investment, Hawai'i Energy agrees to pay an application processing fee.

As already mentioned, inflation continues to reduce overall portfolio cost-effectiveness. Similar to CET efforts, Hawai'i Energy has increased estimates in plan on a per unit basis across the portfolio.

Refrigerator delivery to Hana, Maui as part of Appliance Trade-Up program

Heat Pump Water Heating

Water heating is the largest single residential load in Hawai'i households; however, in apartments and other multi-family unit dwellings solar thermal is often not an option. Hawai'i Energy will assess opportunities for centralized and in-unit heat-pump water heaters to provide significant energy savings and address potential market and technology barriers. Under our grid-services program, grid-interactive heat pump water heaters will be installed in historically disadvantaged communities.

2.3. Core Area #3 – Market Transformation and Economic Development

Objective: Strengthen local communities, businesses, and boost Hawai'i's economy.

▶ **Objective 5:** *Influence long-lasting changes through strategic interventions to overcome market barriers.*

▶ **Objective 6:** *Leverage federal, state, and local funding for clean energy technologies and workforce development.*

▶ **Objective 7:** *Enable smart energy choices through increasing energy awareness and literacy.*

Hawai'i Energy's Market Transformation and Economic Development (MT&ED) programs provide strategic interventions in the market to create lasting efficiencies and pave the way for the integration of clean energy solutions. These programs aim to empower consumers with the rationale and tools to be better-educated consumers of energy and implement efficiency at work and home.

Through comprehensive interventions — effective education and training, productive outreach and relationship-building, and strategic partnerships and collaborations — these programs simultaneously remove the barriers and amplify the benefits to empower customers to make smart energy choices that become lasting behavioral changes. Each year, we are succeeding in implementing more methods for evaluating the effectiveness of core offerings and increasing efforts to deepen engagement by participants in our CET and A&A programs.

Hawai'i Energy approaches Market Transformation (MT) program design as a close complement to A&A. We will target those households, businesses, geographies or sectors for whom these economic and social benefits will make the biggest difference, including lower energy costs for LMI residents and small businesses, increased opportunities for disadvantaged local workers to obtain high-paying jobs, and strengthening existing and generating new economic activity in underserved communities. Creating efficiency programs focused on these goals can have multiple benefits beyond saving energy that ripple throughout the economy, help address inequality and accessibility, build stronger local communities, and improve economic competitiveness.

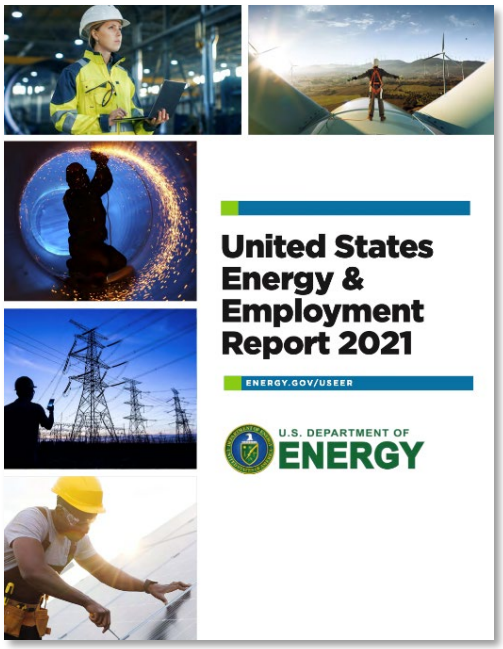
We do not expect any significant changes in our overall MT&ED approach over the next three years. The Program will conduct the activities listed below to track and report the value generated from MT efforts, align the organization with national best practices, and provide the flexibility needed to grow and expand in ways that best suit its needs. We will focus on refining our MT&ED program design and implementation and scaling efforts through partnerships in order to increase participation and help to drive long-term, deep savings in energy use.

The following are the new or expanded themes for this timeframe:

- **Increase Pilot Opportunities:** Over the next three years, Hawai'i Energy will expand our efforts in MT by creating an additional pathway for energy savings, carbon savings and/or grid benefits while testing a new program framework. This framework will assess the viability and acceptance of an MT pilot, align with national best practice, and create robust partnerships aimed at maximizing Hawai'i's ratepayer funds while prioritizing equity and HTR communities. This work will focus on the following key areas and objectives over the next three years:
    - ***Stakeholder Engagement & Support*** – Establish a shared definition of market transformation and partnership development through stakeholder collaboration
    - ***Market Transformation Discovery and Exploration*** – Explore the viability of emerging national and regional market transformation programs
    - ***Pilot Development*** – Develop a market transformation pilot and measurement approach that leverages the shared definition of MT. The team will identify, assess and design an MT pilot after creating a potential portfolio of 3-5 technologies such as heat pumps, which are viable locally for the pilot.
- **Outcome-Based Metrics:** Continue implementation of new **commercial kitchen equipment instant rebates (midstream)** and **refrigeration** efficiency initiatives using outcome-based metrics developed with feedback from the EEM. As part of the August 20, 2020 Order No. 37272 – *Approving the Hawai'i Energy Program Revised Triennial Plan for Program Years 2019-2021* – the PUC highlighted the need to continue to work in collaboration with the Commission Staff, EEM team, and other entities to develop, improve and propose new metrics in both the EOI and MTED areas. Subsequently, Hawai'i Energy proposed potential enhanced metrics in the last quarter of 2020 and worked with the EEM throughout 2021 to define the initial plan for PY21 outcome metrics reporting. After launching the new commercial kitchen instant rebate program and refrigeration efficiency initiatives in PY21 and reporting on the proposed PY21 outcome metrics plan, Hawai'i Energy revisited the outcome metrics with further improvements given lessons learned during PY21 implementation. Hawai'i Energy has established the following two Market Transformation initiatives to focus on in accordance with the guidance from these ongoing discussions.
    - ***Commercial Kitchen Equipment Instant Rebate (Midstream) Program*** - This initiative's outcome metrics are focused on building an engaged distributor network that actively promotes energy-efficient equipment to Hawai'i customers. The Hawai'i Energy team has decided to migrate to a midstream rebate channel for commercial kitchen equipment with the following targets in mind:

        - Increasing the number of commercial kitchen equipment suppliers/distributors enrolled in Hawai'i Energy's commercial kitchen equipment instant rebate program
        - Increasing the total incentives paid through the commercial kitchen equipment instant rebate program by 5% year over year
        - Increasing the number of individuals on the distributor sales teams providing commercial kitchen equipment instant rebates to customers by 5% year over year
    - ***Refrigeration Efficiency*** - This program's outcome metrics are focused on building an engaged refrigeration contractor network to increase customer reach with refrigeration efficiency improvements. The Hawai'i Energy team has decided to focus on this effort with several targets in mind:
        - Increasing the total energy and peak demand savings resulting from refrigeration efficiency projects by 5% year over year
        - Increase the number of unique refrigeration vendors or contractors that support a refrigeration project by 5% year over year
        - Increasing the number of customers participating in a refrigeration efficiency project by 5% year over year
    - **Medium- to long-term goal for both initiatives** – Assessing program and market opportunities to incentivize equipment utilizing natural or low Global Warming Potential (GWP) refrigerants. This proposed shift to low GWP refrigerants will support an accelerated path to the State of Hawai'i decarbonization goals.

- View market transformation from an **economic development** lens by broadening partnerships and working with allied organizations to co-create workforce development initiatives that prepare workers for new or advanced careers in efficiency. According to "The 2021 U.S. Energy & Employment Report" jointly published by the National Association of State Energy Officials (NASEO) and Energy Futures Initiative (EFI),[15] energy efficiency employed 2.1 million Americans in whole or in part in the design, production and installation of energy efficiency products and services. This represents a drop of 11% over 2019, with much of the loss due to COVID-19 impacts. However, the demand for efficient technology and building upgrades has driven expansion among many traditional industries, including construction, energy-efficient appliance manufacturing, building materials, lighting, and other energy-saving goods and services.



It is clear that more investments and better policies that encourage job growth would pay dividends — energy jobs are more likely to be unionized, and a recent report found that energy jobs pay about a third higher wages on average than the median pay across all U.S. industries. The program will explore partnerships with Hawai'i public high school career initiatives and academies, as well as assess the market for workforce education and training around home energy scores and green labeling.

- Leverage federal funding for clean energy technologies, in particular the Infrastructure Investment and Jobs Act and its provision for supporting residential and commercial energy training certificates.

[15] *"2021 U.S. Energy and Employment Report,"* Energy Futures Initiative, July 1, 2021.

The following are successful core activity areas which will continue:

- **Behavioral change** initiatives targeted to specific sectors with an emphasis on accessibility and affordability and youth audiences
- **Clean Energy Ally** support
- **Establishing comprehensive professional development & technical training** for Clean Energy Allies, energy managers, facility operators who buy and/or operate equipment, educators, and others who influence decision making
- **Energy in decision making** via our Strategic Energy Management (SEM) program that supports specific communities and large energy users in developing comprehensive energy management strategies to incorporate into business practices
- **Codes & Standards support** to drive energy savings in both public and private sectors
- **Developing a clean energy solutions innovation hub** for the **design and prototyping of innovative emerging technologies and services**; in coordination with the utilities, the PUC and other public and private stakeholders

2.3.1. Behaviorial Change (Clean Energy Literacy)

Increased Community, Low-Income and Hard-to-Reach Focus

The nucleus of energy literacy continues to be community and youth engagement, especially in HTR populations (refer to *Section 2.2.2 Accessibility and Affordability - Residential*). Starting in 2020, we increased collaboration between our A&A and MTED staff to coordinate programs, such as pairing workshops, appliance trade-ups or other community-based initiatives with enhanced engagement.

Hawai'i Energy will target communities and organizations where multiple, routine engagements are available to increase brand awareness, trust, and reinforce behavior change seeded in the literacy programming. When executed effectively, these efforts motivate participants while creating "sticky," lasting behavior change and establishing a shared sense of purpose in reaching a common goal.

STEM-based Youth Education

Hawai'i Energy understands Science, Technology, Engineering, (Art) and Math (STEM/STEAM) education is a critical component in preparing the next generation of students with the knowledge and skills to needed solve complex programs and pursue STEM careers that will help Hawai'i achieve its 100% clean energy goal. STEM/STEAM initiatives will continue for youth education including incorporating energy-specific curriculum into K-12 classrooms and working with key stakeholders to equip educators with project and inquiry-based learning tools. The Program continues to provide financial and logistic support for student energy summits, design challenges and STEM conferences.

2.3.2. Professional Development & Technical Training

Clean Energy Ally (CEA) Support

While the Hawai'i Energy program supports Clean Energy Allies (CEA) through its market transformation and economic development program offerings, the impact of the Clean Energy Allies on our CET programs makes the program a unique point of emphasis. The CEA program serves as a force multiplier for participation in our portfolio, supporting and leveraging our relationships with architects, engineers, contractors, manufacturers, and distributors to increase program participation from both commercial and residential customers. CEAs play an important role in helping residential, commercial and industrial customers to implement energy efficiency projects and leverage available Hawai'i Energy rebates and program offerings. Currently, over 350 companies participate in our Clean Energy Ally program.

Over the next three Program Years, we will:

- Re-introduce "Cup of Joe Coffee" sessions to deepen relationships and engagement with Clean Energy Allies (public health mandates permitting)
- Continue the enhancement of the new Clean Energy Ally portal with program resources, such as a calendar for MT technical trainings and incorporation of feedback from users for future refinement

CEAs as Market Multipliers

CEAs help build and support a strong delivery market infrastructure to best serve Hawai'i ratepayer needs with energy efficiency options. During the pandemic, Hawai'i Energy sought to support CEAs with informational resources and limited-time incentives to drive business. Now that the industry is opening back up and projects are escalating, we anticipate an increase in coordinated efforts in the next performance period.

An important objective of our CEA program is to remove barriers to program participation by recruiting and motivating allies to become active participants in Hawai'i Energy programs. We currently offer benefits including:

- Co-op funding for advertising, trainings and events
- Access to technical support
- Invitations to networking events
- Educational opportunities such as technical trainings and professional development courses augmented with professional sales tools

Deepening Industry Engagement

Hawai'i Energy relies on CEA feedback to help inform and improve program design to increase program participation. In the coming program years, we intend to continue recruiting new Allies to align with the program's new initiatives as well as deepen relationships and engagement with existing Allies through expanded and improved program offerings:

- Creating an **"enhanced" tier for contractors** that meet a higher level of requirements, a program strategy modeled after the successful Energy Advantage program. The program would expand this to be able to bundle solutions to make the process easier and more accessible to commercial customers.
- Expanding the **"Energy Insiders" rewards** program to provide additional benefits, incentives, and a contractor bonus program to drive projects for high-performing contractors.
- Expanding and promoting the successful **co-op advertising and co-op event** subsidies to enhance networking and business opportunities and leverage industry partners to offer co-branded advertising opportunities and events to the CEAs.
- Continuing support of **training and development courses** to support workforce development and expand technical training of CEAs on selling energy efficiency to customers, emerging energy efficiency technologies and innovative financing options.
- Completing the revamp of the **CEA online search portal** so customers can do advanced and targeted searches for contractors, as well as help CEAs generate business leads and find value in the Hawai'i Energy website.

- Offering CEA benefits at our signature **Innovation Symposium** event, including enhanced sponsorship/exhibit opportunities for CEAs and recognition of top performing CEAs at the event.
- Continuing the **monthly CEA newsletter** to include information on Hawai'i Energy programs, and trainings, networking events, featured Insider Rewards CEAs, market trends and marketing and promotional opportunities.
- Collaborating with manufacturers regarding **emerging and rapidly advancing technologies** such as lighting controls and building automation systems and) for continuous commissioning. This includes staff training sessions on new technologies and attendance at industry trade shows.
- Expanding the **Green Real Estate CEA program** to engage with those agents who have taken the free (Program-subsidized) National Association of Realtors (NAR) Green® Designation course. Real estate agents are perceived as a trusted source of information for buyers and sellers and could potentially be a source of information about efficient home upgrades and their benefits. As a result of trainings in PY18-20, Hawai'i is currently #5 in state rankings nationally for green designees.

  We will encourage Green designees to take supplementary courses on efficient accessory dwelling/'*ohana* units, residential solar, and marketing their Green practice. Additionally,

  - The **new quarterly e-newsletter**, targeted to Green realtors, will cater specifically to the needs and interests of them and their clients, incuding home efficiency tips and links to rebates.
  - Green designees who have taken an additional topical course will be eligible to apply to join a limited cohort that offers **one-on-one coaching** with our partner consultant and to receive valuable feedback on incorporating energy efficiency into their real estate practice and a special project of their choosing.

Targeted Ally Training Opportunities

The foundation of an energy independent Hawai'i will be dependent upon the skill set and knowledge of the workforce capacity in energy efficiency and conservation. To best support this, one of the main goals of the CEA program is to increase the base of qualified contractors and augment the skill sets to implement clean energy and energy efficiency projects, products and services.

As in previous years, we will focus on providing educational opportunities to Allies through technical trainings, Continuing Education Credits, and professional sales and financing training. These initiatives will allow CEAs to gain a competitive edge by staying abreast of market trends and obtaining knowledge, resources and credentials that enable them to deepen their service offerings and customer base. Professional Development and training efforts will include the following:

Professional Development & Training Opportunities	
Offering specialized training for refrigeration trade allies:	The Program will draw upon our collaboration with VEIC to offer more sessions in our refrigeration technical and financial training series. We will continue to engage this sector with the goal of driving companies joining as trade allies in the Refrigeration category and adding more projects to the resource acquisition portfolio.
Promoting Efficiency in Residential New Construction:	In an effort to advance energy efficiency for new construction in the residential sector, Hawai'i Energy will collaborate with state government agencies on affordable housing projects and pursue efficiency criteria development during the developer application and through the design process. Developers and home builders will be apprised of energy-efficient opportunities in master planned communities and single home-builds (including major remodels) that will be incentivized beyond the current energy code.
IECC 2018 Outreach & Training:	Following the county adoption of IECC 2018, we will continue to provide outreach and education to the CEA community.
Emerging Technologies Technical Trainings:	Hawai'i Energy will also continue to expand the focus of technical trainings to match evolving Program scope and emerging technologies (i.e., battery storage, demand response).

Real Estate Education and Certification:	The Program will continue to train licensed real estate professionals to increase their knowledge around sale, purchase and valuation of energy and resource-efficient homes. Courses such as the aforementioned NAR Green® Designation, Accredited Green Appraiser (AGA) and shorter topical courses will provide a robust knowledge base. Attendees will be invited to join the Clean Energy Ally subspecialty for Green Real Estate. These trainings will help facilitate the enhanced valuation of such properties through awareness of the hidden benefits to the homeowner over time. 

Targeted Participant Training Opportunities

As we look to build capacity amongst trade allies so they can sell efficiency projects, we also recognize that decision-makers and professionals in the facilities and design and construction fields must have the skill sets to design, scope, approve, procure and manage energy-saving projects. Training will focus on both technical and business skills and includes:

Certifications	
Certified Energy Manager (CEM):	This Association of Energy Engineers' (AEE) national certification is a well-regarded credential in the energy industry. Topics include energy auditing, energy codes and standards, building energy use and performance, energy accounting, rate structures, economic analysis methods, life cycle cost accounting, maintenance, lighting, HVAC systems, controls, insulation, and third-party building certifications.
Building Operator Certification (BOC) Levels I and II:	The Northeast Energy Efficiency Council's (NEEC) Building Operator Certification (BOC®) program is a comprehensive, nationally recognized energy efficiency training and certification in commercial building operations and maintenance and includes topics, such as measuring and benchmarking energy performance, efficiency in HVAC and lighting systems, indoor environmental quality, and building scoping for operational improvement.
Other Certifications and Trainings:	The Program will explore offering other certifications and trainings, such as the Certified Energy Auditor (CEA) and Building Performance Institute (BPI)'s home energy training, particularly in the context of leveraging federal COVID era funding.

Non-credit Workshops and University of Hawai'i Partnerships	
Non-Credit Certificate in Energy Efficiency:	The Program will build on our positive relationship with the University of Hawai'i to create a non-credit certificate in energy efficiency. We will include perennial offerings and incorporate new courses deemed important for professionals in this space, based on research and feedback from stakeholders and participants.
Training for Architecture and Engineering Students on Energy Efficiency in Front-End Design:	Hawai'i Energy will work with the University of Hawai'i's Environmental Research Design Lab, School of Architecture and College of Engineering to train architecture and engineering students in codes and standards and software for energy and daylight modeling to transform the integrated design process. The goal is to shape a mindset toward energy efficiency as a foundational element and is less likely to be value-engineered out. We will increase our partnerships with key leaders in academia to inform students of training opportunities and professional certifications around energy.
Benchmarking – ENERGY STAR Portfolio Manager:	Hawai'i Energy will provide training support to the City and County of Honolulu on its Benchmarking ordinance, which was signed into law in July 2022. The ordinance requires energy benchmarking for large commercial and multifamily buildings over 25,000 square feet on O'ahu.

2.4. Energy in Decision Making

Strategic Energy Management (SEM)

Hawai'i Energy's SEM efforts are detailed in section *2.1.1.1 Business Energy Advising* under the *Energy Advisory Incentive Offers* heading. We will promote behavioral and organizational culture around energy through educational workshops for business teams.

Rural Water and Wastewater Support

As defined in *Section 2.1.1.1* under *Business Energy Advising*, Hawai'i Energy will continue to advance efficiency in the water-energy nexus with the following activities:

- Providing training for new water-saving technologies as applicable
- Developing and implementing strategies with municipal water and wastewater organizations to overcome barriers to implementing efficiency measures
- Deepening relationships with contractors working in the water-energy nexus to increase awareness of energy-efficient options, from design through implementation

2.5. Codes & Standards

The Hawai'i Energy Code for buildings at the state and county level have seen greater consideration with the adoption of the 2018 International Energy Conservation Code (IECC) at the state level and the mandatory adoption for counties by January 2023. The City and County of Honolulu has dedicated itself to revamping the code adoption cycle for building codes to include mechanical, electrical, etc., with other counties following suit.

Hawai'i Energy continues to work with stakeholders to support this process and provide feedback where possible. The program will continue to dedicate staff time and budget towards the awareness of energy codes by the public as well as efforts to increase compliance by easing barriers along with co-sponsoring trainings for the IECC codes. Through our collaboration with HSEO and building design community, we will raise the bar beyond baseline code minimums, advocating for stretch codes and zero-net energy new construction.

Hawai'i Energy will expand our collaborative role with HSEO and the Blue Planet Foundation to increase code training, advocacy and engineering support for county and state-level code and stretch code advancement. We will identify and enhance rebates for targeted equipment (e.g. multifamily electric vehicle chargers) to reduce barriers to future code changes. We will work with the EEM to deem code attribution savings in PY22 and beyond for past and ongoing investments.

Historically, these efforts and activities were not associated with energy savings. However, new to the program is the attribution of savings from activities that increase compliance to code as well as activities for the adoption of standards such as appliance standards. For budget allocations specific to Codes & Standards efforts see Market Transformation Budget in Appendix C.

Codes & Standards	
Appliance Standards Advocacy:	The Program will continue to advocate for the adoption of appliance standards which will play an important role in reaching the state's EEPS goal in a very cost-effective manner. Hawai'i is not alone in adopting appliance standards, as over a dozen states have some form of appliance standards in place for various equipment, with California paving the way. Appliance standards enable Hawai'i consumers to make the best energy, water and financial choice over the lifetime of the equipment and protect our consumers from manufacturers "dumping" inefficient products in markets where standards do exist.
Energy Attributed Savings from Increasing Energy Code Compliance:	As outlined in the beginning of this section, Hawai'i Energy will track and count savings from activities, such as advocacy and further training and education in the design/development community, as well as code compliance and appliance standards adoption.
Professional Development to Address Codes & Standards:	Hawai'i Energy will support architect and building contractor professional trainings and engineering support services to address market barriers for building compliance with the county-level adoption of the 2018 IECC. In PY20, over 750 participants statewide attended trainings held by HSEO, which we co-sponsored and participated in the workshops' design. We will also continue to provide trainings to the counties' building departments and other officials to help with understanding and enforcement of the code.

New Construction:	Hawai'i Energy will expand our technical assistance throughout the design, construction and post-construction of new buildings through our New Construction/Major Renovation program. Early incentives have proven effective at building a more robust pipeline of new construction leads as they encourage the design industry to incorporate EE into project design and influence developers and building owners to invest in EE and green building practices. They are also needed to ensure that high efficiency equipment is not value engineered out of the project. The Program will continue to encourage and incentivize a whole-building approach, with mandatory building energy modeling and special design team and energy modeling bonuses to reward integrated design and the sharing of knowledge around systems selection.
Voluntary Energy Performance Specifications:	Hawai'i Energy will develop aggressive voluntary energy performance specifications to stretch state and local energy codes and standards for equipment and "EV-/PV-/Storage-ready" buildings.

2.6. Clean Energy Solutions Innovation Hub

The Program will focus on developing innovative projects and incorporating emerging technologies with public and private entities to assess the potential for market adoption and to design future program initiatives.

Leveraged Partnerships and Funding Resources

Hawai'i Energy will continue to expand and leverage partnerships with utilities, EEx, and federal, state and county agencies for identifying and deploying new clean energy collaboration efforts. As part of these partnerships, the Program will leverage external funding to build out the speed and scale for evaluating emerging technologies and services.

Our partnership with EEX leverages their due diligence process to identify companies from their annual cohort application process that align with our Program goals. This multi-year collaboration framework provides an innovation arm for Hawai'i Energy to outline and facilitate program support needs, build pipeline, perform company due diligence and monitor project deployment. This collaboration has so far resulted in the identification of partner companies like Pono Home and Shifted Energy, and we are targeting connecting with 60 additional qualified startups that could make a positive impact in Hawai'i.

New in PY21 and expected to continue is EEx's support of the Program's A&A efforts. EEx will leverage its resources and funding to support critical assistance to LMI households, small businesses and other HTR customer segments, and help us understand how technology serves communities most vulnerable to climate change.

2.6.1. Data-Driven Strategic Planning

Ongoing Strategic Program Design	
Individual and Group Stakeholder Feedback to Inform Program Effectiveness:	Building upon the robust stakeholder engagement sessions conducted as part of the 10-Year Strategic Roadmap development process, we will continue to engage and provide a feedback loop with key allies and stakeholders as our strategic plan is released and later operationalized.
Continuous PUC and Energy Efficiency Manager (EEM) Team Input:	To ensure alignment with other policy objectives and docket proceedings, Hawai'i Energy will engage with the PUC and EEM teams – consisting of 2050 Partners and the associated EM&V contractor – throughout the triennial program period. These engagements will allow for additional input around all areas of the program, particularly, with the newer initiatives laid out in this plan. In the areas where the program offering has inherent complexity in either the implementation or performance evaluation, or is likely to intersect significantly with other dockets, we will actively seek input from this team. Beyond alignment, the intent of this ongoing collaboration is to provide opportunities for input on program design and evaluation metrics that can easily scale up for broader implementation in future years.

Data & Analytics Platforms	
Data Analytics for Evaluating Program Impact and Informing Target Program Technologies and Design:	As benchmarking data comes online from those required to publicly report, Hawai'i Energy's engineering team will analyze the information, such as Energy Use Intensity by sector and building type to recognize leaders in efficiency and better inform new or modified incentives and targeted technical assistance.

Hawai'i Energy

MARKETING & COMMUNICATIONS

OPERATIONAL SUPPORT PRIORITIES

BRAND AWARENESS & POSITIONING

Triennial Plan

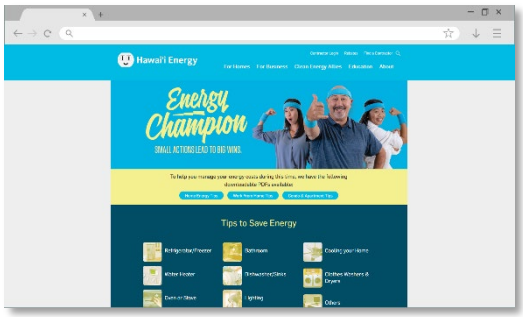
3. MARKETING & COMMUNICATIONS

3.1. Operational Support Priorities

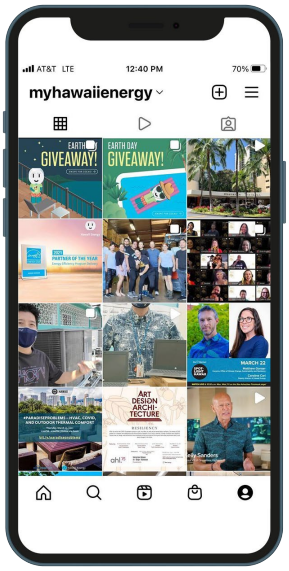
A large share of marketing and communications efforts for the Program is generating awareness about and participation in incentive offerings. Whether it involves the launch of a new offering or a strategy to promote current offerings, the team can rely on any number of tactics – developed with input from Energy Advisors, Clean Energy Allies and customers – to distribute information to all parts of the supply chain and where possible, target specific demographics primed for participation.

Currently successful distribution tactics include the following, which can be refined as needed to support overall operational goals:

- **Hawai'i Energy website**



- **Email marketing** – monthly newsletters, contractor/retailer communications, and event recruitment utilizing targeted distribution lists based on participant data
- **Social media** – prioritizing Facebook, Instagram (*pictured right)*, LinkedIn and YouTube, and developing content strategies that maximize engagement, drive users to our website, and collect first-party data through special promotions
- **News releases & media coverage** – pitching stories to reporters to garner media coverage for Hawai'i Energy initiatives and positioning pieces for team leadership
- **Printed collateral pieces** – brochures, informational sheets, utility bill inserts, store signage



- **In-person outreach events** – trade shows/expos, informational booths, workplace presentations by Energy Advisors, and the annual Innovation Symposium
- **Cross-promotion** by other organizations to increase awareness of services, such as chambers of commerce, Hawai'i Restaurant Association, etc.

- **Clean Energy Ally network support** – co-op advertising reimbursements, marketing trainings, co-branding opportunities, features in Hawai'i Energy marketing materials
- **Paid advertising (when appropriate)** – targeted ads designed specifically to promote rebate programs

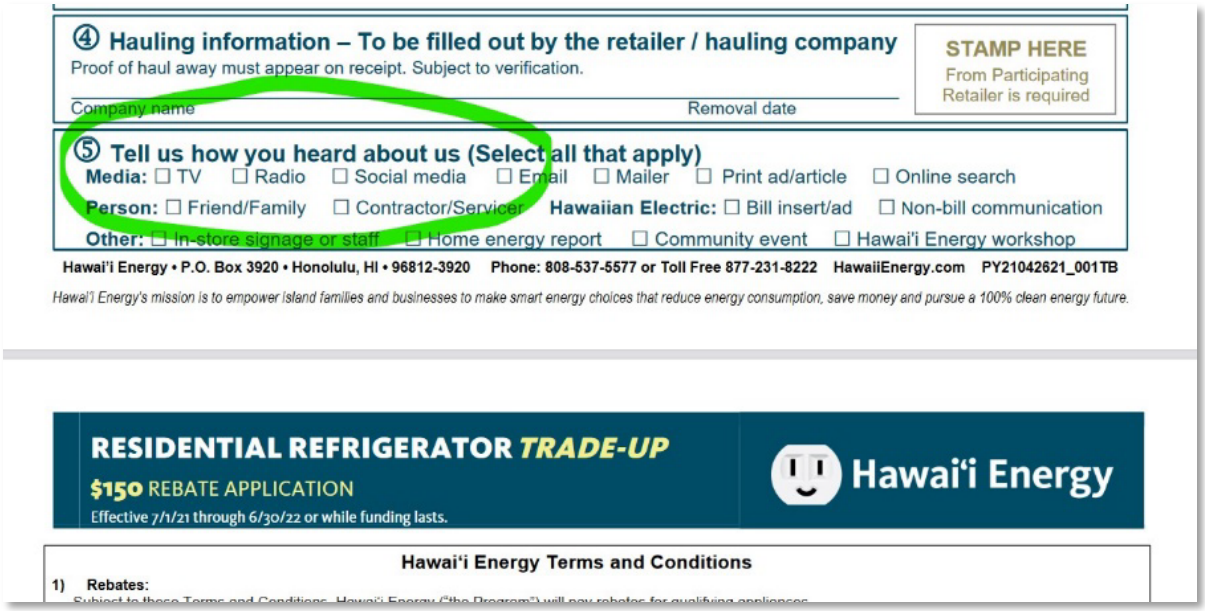
Over the next few years, the Program seeks to build its marketing & communications strategy in support of the following operational priorities:

3.1.1. Priority #1: Research and develop new lead funnels

The pandemic changed the way customers view and prioritize efficiency projects. The soaring costs of goods and shipping delays have lessened the value of rebates, and as a result, efficiency programs have had to adapt and find new ways to market to and persuade customers. This is why the Program will commit to a marketing strategy that supports the research, development and implementation of new lead funnels over the next few critical years.

Application & Intake Process Refinement

The pandemic heavily impacted the way brands and consumers exchange information. On one hand, it led the Program to lean more on digital tactics and content and prioritize those for the near future. On the other hand, an increase in digital commerce and information exchange has also brought to light the public's concerns about (and subsequently, regulations on) how customer data is collected and used by companies. The Program looks at the latter as an opportunity to refine data collection methods in the near-term, which will ultimately benefit marketing plans – allowing for more accurate targeting of ideal participants, and better forecasts of marketing outcomes.



In line with strengthening the pipeline of project leads, the Marketing & Communications team will work to refine the rebate application and customer intake process to better collect the customer data needed to target specific demographics and track marketing's impact for more informed strategizing. We will explore and implement ways to automate and tailor customer communications during the rebate/participant process, with the goal of recommending certain services and events and capitalizing on actions customers are more likely to take based on their participant history.

One particular focus area for expansion will be within the community-based energy efficiency pilots for HTR communities. Having completed appliance trade-ups in several larger communities in PY21, we can now explore ways to streamline getting participants to engage with other Hawai'i Energy services after their initial appliance is received. Actions for this particular customer group could include:

- Working with community partners to include marketing effectiveness tracking into the intake or application process through a "how did you hear about us?" question
- Incentives to sign up for email communications at point of application
- Immediate follow-up communications recommending additional free programs, such as ES4H
- Special, exclusive discounts (beyond normal rebates) or rewards for providing feedback via surveys

We also intend to build upon already successful methods of measurement, such as using promotional codes, analyzing data from "how did you hear" fields on applications, and exploring new opportunities within call center tracking and customer relationship management systems.

Business Customer Referral Program

We will finalize the deployment of a small business referral program, with the intent to scale it to include all business customers by PY24. The referral program, which has been in development since PY21, will begin by offering EA participants with the opportunity to receive a $100 gift card for every business they refer that completes an Energy Advantage project. We are already considering scaling measures and options for other incentives (such as contractor bonuses and coupons toward future projects) should the small business referral program proves worthwhile.

Increase Residential Retailer Engagement

Building off of successful outreach conducted in PY21, the Program will increase its residential retailer engagement efforts with the goal of building stronger relationships with store managers and marketing staff and increasing staff and customer literacy around energy-efficient products. Initial feedback collected by the Marketing & Communications team in 2022 indicated that this is a prime growth opportunity, with room to further understand product display processes, collaborate on improved signage and educational material placements, consistently train floor staff on Hawai'i Energy rebates, and encourage store-affiliated installers to apply for the Clean Energy Ally program. Additionally, with marketing staff regularly present in-store, it could also help facilitate operational follow-ups with floor staff when needed.

3.1.2. Priority #2: Improve online user experience & customer journey [PY22-23]

Improving the Program's external-facing online customer experience goes hand-in-hand with all of the above and is of utmost importance in planning for the next few years. Marketing technologies evolve as the market does, and after over a decade of interfacing with customers through somewhat manual methods, the Program is primed to update and streamline the user experience to match what customers are already doing.

Integration of New Marketing Capabilities

Work will be done to compliment the transition of the downstream rebate application process to an online form and submission model in PY22. The Hawai'i Energy website will undergo a refresh to ensure that access to the online portal is seamless, and the team will assemble a campaign (which could include pop-up "apply on site" events at retailers, email messages, and more) to announce the change and get customers to try the new format.

Furthermore, the planned integration of new marketing capabilities in PY22 has tremendous potential to improve the user experience even further. By integrating new marketing capabilities with AMPLIFY, we can gain visibility into each individual customer's experience and design communications to inform their unique "journey" as they go from initial interaction to participating in a service, and beyond – tailoring recommendations based on their own trends and likely behaviors. This integration will also replace the external software platforms currently being used for online event registrations, email marketing, and social media management, and

provide centralized, connected analytics that can be compared and integrated easily with AMPLIFY data.

Leaning in to "self-service" content demands

Many customers tend to research and compare energy-efficient products heavily before ever setting foot inside a store or meeting with a contractor, and data from recent market research indicates that customers are now more likely than ever to turn online (and in many cases, to Hawai'i Energy) to find the educational/technical information that can help guide their purchase decisions.

We will continue to make refinements to the content and layout of the Hawai'i Energy website, social media channels, and marketing emails in response to the demand for more of this "self-service" information. (As an example, Hawai'i Energy's "Understanding Your Solar Water Heater Timer" video on YouTube has over 34,000 views and counting, despite being over nine years old.) This will include a heavier focus on making simplified educational and technical content available via infographics, how-to videos, and the like. While this type of content takes more time to produce, it will also help position Hawai'i Energy as a trusted technical resource, a place where the everyday person can receive easy-to-understand, relatable guidance.

3.2. Brand Awareness & Positioning

In addition to supporting operational goals, the Program's marketing & communication strategy will include initiatives to further raise brand awareness and keep energy efficiency top-of-mind for the general public. Branding efforts help to clear a pathway for easier customer participation and boost the overall knowledge of clean energy topics amongst the public. The Program has made substantial headway in the last contract cycle in both raising brand awareness and positioning ourselves as a key leader in clean energy initiatives, and this has built a solid foundation on which we can provide trusted commentary and support to the public and the media.

A key priority for PY22 will be to continue seeking out and responding to opportunities that can highlight energy efficiency as a critical component of climate action. With all that has happened in recent current events and knowing that the 2022 election will likely impact the next few years of clean energy policy, social conversations on energy are evolving, and we anticipate that our biggest branding challenges heading into the next few years will be: 1) a misconception of efficiency benefits

(as compared to other clean energy sources) at a political level, and 2) a general deprioritization of energy efficiency amongst all the other ways to "save the planet."

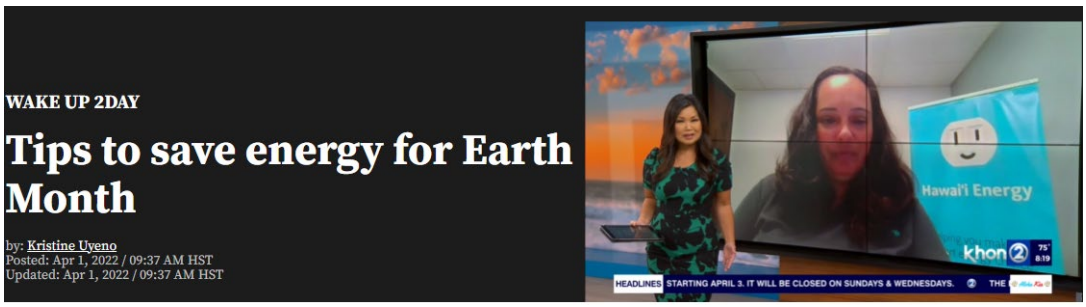
Yet, many residents and businesses are now hyper-focused on energy issues because of the pandemic, the situation in Russia and Ukraine, and the growing climate action movement. So, it is imperative that we not waste the opportunity to speak and act when so many are turning to us for solutions. In partnership with our public relations firm, we will continue to build strong relationships with the media, offering Hawai'i Energy leadership for dependable, intelligent, and practical commentary on local energy issues; and educate the public about the benefits of energy efficiency and its importance in the climate action fight.

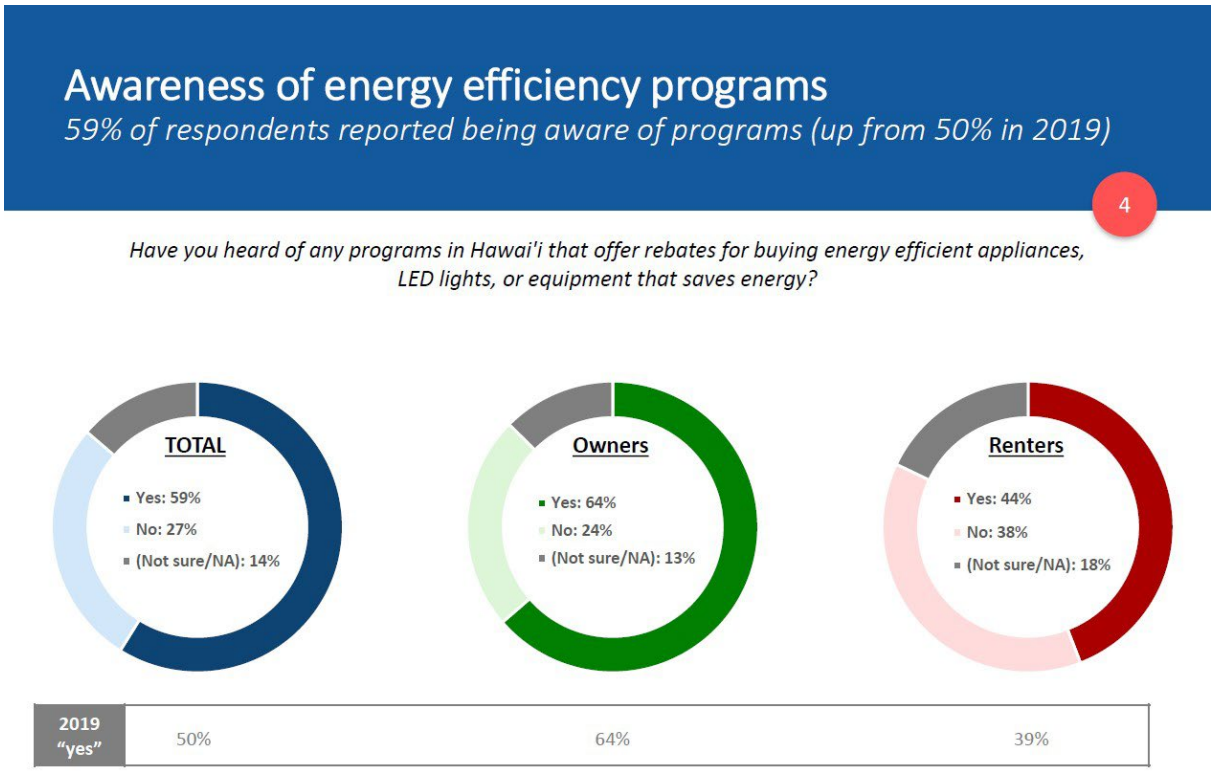
More frequent strategic advertising and public relations

In line with the above, the Program feels strongly that increasing our media presence and frequency will go a long way in helping to combat misinformation about energy efficiency, alleviate customer concerns with purchasing energy-efficient products, and help to highlight the incredible financial benefits. This especially is needed in a time where load shifting efforts will become a higher priority due to scheduled coal plant retirements.

Top: Executive Director Caroline Carl (center) shared energy-saving tips on Hawai'i News Now's Sunrise show with HECO on April 26, 2022

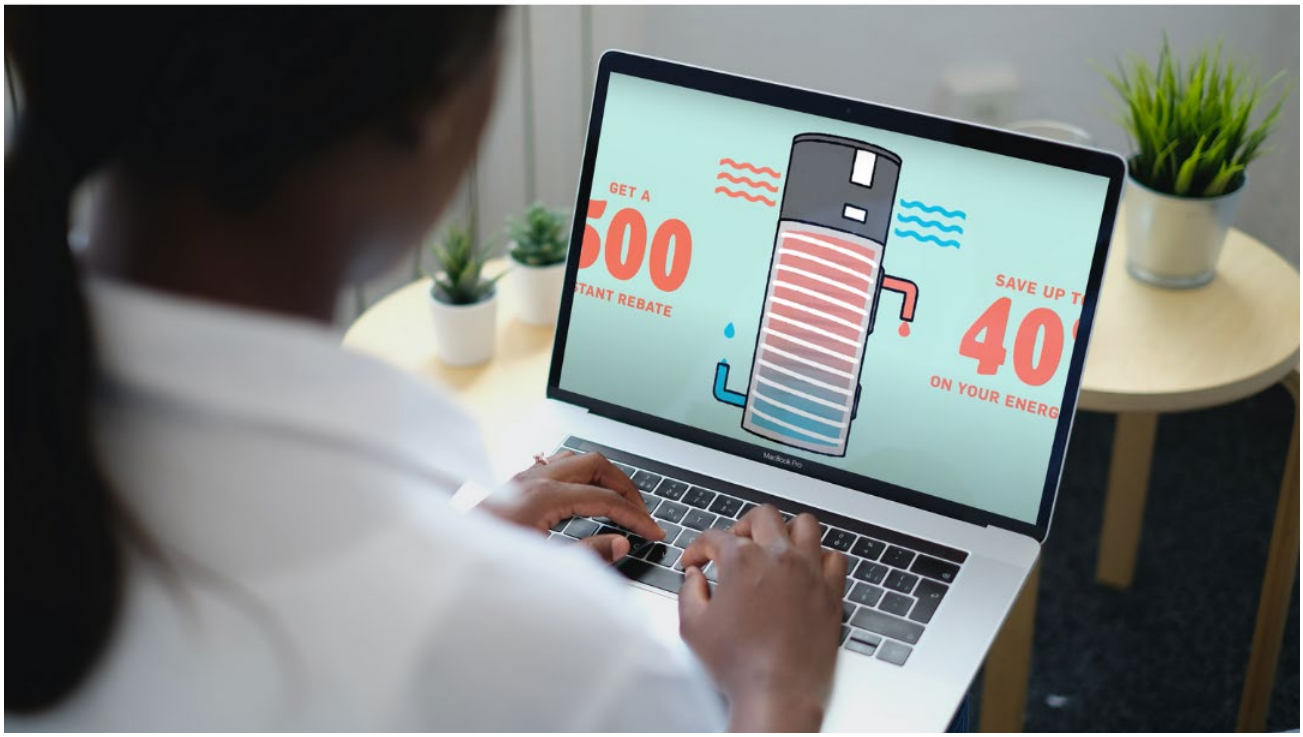
Bottom: Deputy Director Mireya Norman shared tips for Earth Month on KHON 2 News' morning show on April 1, 2022.





Annual market research has shown that increasing our frequency of advertising has made steady impacts on brand awareness. Industry trends also show that sustainability metrics are becoming more important to businesses as climate-focused customers make purchase decisions that include considerations of companies' environmental track records. As these companies look to make energy efficiency commitments, increasing awareness of Hawai'i Energy's mission can lead to important collaboration with facility managers on their way to achieving their goals.

Constant advertising, particularly on TV and digital video platforms (the most effective in the Hawai'i market) would allow for much deeper brand awareness than the Program has ever had. Purchasing a larger amount of advertising up-front would also allow for the flexibility to plan out various messages and calls to action throughout the year (rather than ramping up and ramping down multiple times within a year), and the increased brand awareness can support future opportunities to collaborate with other organizations and content creators on non-traditional platforms, such as through events, social media brand partnerships, and more.



Hawai'i Energy

BUDGET

PROGRAM BUDGET

Triennial Plan

4. BUDGET

Hawai'i Energy Efficiency Program Budget Updates - PY22-PY24 Triennial Plan	PY22	PY23	PY24	Total Budget
Residential Programs				
Clean Energy Technologies (CET) Planning & Implementation				
REEM	1,210,968.00	1,212,744.00	1,218,441.00	3,642,153.00
CREEM	40,167.00	40,805.00	41,460.00	122,432.00
RESM	436,377.00	437,334.00	438,317.00	1,312,028.00
RGRID	43,57300	44,745.00	45,948.00	134,266.00
Subtotal CET Planning & Implementation	1,731,085.00	1,735,628.00	1,744,166.00	5,210,879.00
Residential Market Evaluation	12,018.00	12,337.00	12,665.00	37,020.00
Residential Outreach	703,435.00	715,159.00	651,998.00	2,070,592.00
Total Residential CET Non-Incentive	*2,446,538.00*	*2,463,124.00*	*2,408,829.00*	*7,318,491.00*
Hard-to-Reach Planning & Implementation				
RHTR	*370,796.00*	*379,158.00*	*387,735.00*	*1,137,689.00*
RHTR Outreach	*253,821.00*	*241,305.00*	*223,430.00*	*718,556.00*
Total Residential Hard-to-Reach Non-Incentive	*624,617.00*	*620,463.00*	*611,165.00*	*1,856,245.00*
Total Residential Non-Incentive	3,071,155.00	3,083,587.00	3,019,994.00	9,174,736.00
Residential Incentives & Technical Assistance				
Direct Incentives				
REEM	5,246,440.00	5,068,745	4,979,475.00	15,294,660.00
CREEM	55,000.00	55,000.00	55,000.00	165,000.00
RESM	825,000.00	860,000.00	869,750.00	2,554,750.00
RHTR	2,852,853.00	3,007,379.00	2,993,248.00	8,853,480.00
RGRID	100,000.00	100,000.00	100,000.00	300,000.00
Subtotal Residential Incentives	9,079,293.00	9,091,124.00	8,997,473.00	27,167,890.00
Technical Assistance	874,846.00	882,884.00	891,118.00	2,648,848.00
Total Residential Direct Incentives & Technical Assistance	*9,954,139.00*	*9,974,008.00*	*9,888,591.00*	*29,816,738.00*
Residential Transformational	1,112,416.00	1,112,416.00	1,112,416.00	3,337,248.00
Total Residential Incentives	11,066,555.00	11,086,424.00	11,001,007.00	33,153,986.00
Total Residential Programs	**14,137,710.00**	**14,170,011.00**	**14,021,001.00**	**42,328,722.00**

Business Programs				
Clean Energy Technologies (CET) Planning & Implementation				
BEEM	770,810.00	731,142.00	692,546.00	2,194,498.00
BET	-	-	-	-
CBEEM	742,418.00	747,307.00	769,674.00	2,259,399.00
BESM	51,179.00	57,490.00	72,387.00	181,056.00
BGRID	59,165.00	48,611.00	49,925.00	157,701.00
Subtotal Business Programs	1,623,572.00	1,584,550.00	1,584,532.00	4,792,654.00
Business Evaluation	181,201.00	185,985.00	190,895.00	558,081.00
Business Outreach	522,357.00	531,832.00	509,375.00	1,563,564.00
Total Business CET Non-Incentive	*2,327,130.00*	*2,302,367.00*	*2,284,802.00*	*6,914,299.00*
Hard-to-Reach Planning & Implementation				
BHTR	*566,794.00*	*581,643.00*	*605,459.00*	*1,753,896.00*
BHTR Outreach	*167,264.00*	*169,735.00*	*156,226.00*	*493,225.00*
Total Business Hard-to-Reach Non-Incentive	*734,058.00*	*751,378.00*	*761,685.00*	*2,247,121.00*
Total Business Non-Incentive	3,061,188.00	3,053,745.00	3,046,487.00	9,161,420.00

Hawai'i Energy Efficiency Program Budget Updates - PY22-PY24 Triennial Plan	PY22	PY23	PY24	Total Budget
Business Programs (cont'd)				
Business Incentives & Technical Assistance				
Direct Incentives				
BEEM	4,366,311.00	3,944,311.00	3,822,311.00	12,132,933.00
BET	-	-	-	-
CBEEM	4,935,703.00	5,045,501.00	5,549,580.00	15,530,784.00
BESM	436,750.00	472,000.00	522,000.00	1,430,750.00
BHTR	3,686,150.00	3,933,928.00	3,969,194.00	11,589,272.00
BGRID	2,189,000.00	806,250.00	432,625.00	3,427,875.00
Subtotal Business Incentives	15,613,914.00	14,201,990.00	14,295,710.00	44,111,614.00
Technical Assistance	1,164,423.00	1,112,647.00	1,139,364.00	3,416,434.00
Total Business Direct Incentives & Technical Assistance	16,778,337.00	15,314,637.00	15,435,074.00	47,528,048.00
Business Transformational	1,068,732.00	1,068,732.00	1,068,732.00	3,206,196.00
Total Business Incentives	17,847,069.00	16,383,369.00	16,503,806.00	50,734,244.00
Total Business Programs	**20,908,257.00**	**19,437,114.00**	**19,550,293.00**	**59,895,664.00**
Support Services				
General & Administrative	1,083,187.00	1,106,135.00	1,129,669.00	3,318,991.00
IT & Data Management & Visualization	721,300.00	731,389.00	741,743.00	2,194,432.00
Branding	240,548.00	244,380.00	247,899.00	732,827.00
Total Support Services	**2,045,035.00**	**2,081,904.00**	**2,119,311.00**	**6,246,250.00**
Infrastructure/Facility Fee				
Infrastructure/Facility Fee	547,865.00	547,865.00	547,865.00	1,643,595.00
Total Infrastructure/Facility Fee	**547,865.00**	**547,865.00**	**547,865.00**	**1,643,595.00**
	-	-	-	-
Subtotal Non-Incentive (Prior to Tax)	8,725,243.00	8,767,101.00	8,733,657.00	26,226,001.00
Total Tax on Non-Incentive	411,133.00	413,106.00	411,530.00	1,235,769.00
Performance Amount (Inclusive of Tax)	750,000.00	750,000.00	750,000.00	2,250,000.00
Subtotal Non-Incentive Billed	*9,886,376.00*	*9,930,207.00*	*9,895,187.00*	*29,711,770.00*
Subtotal Residential + Business Customer Incentives & Technical Assistance	*26,732,476.00*	*25,288,645.00*	*25,323,665.00*	*77,344,786.00*
Subtotal Transformational Incentives	*2,181,148.00*	*2,181,148.00*	*2,181,148.00*	*6,543,444.00*
Subtotal Customer and Transformational Incentives	*28,913,624.00*	*27,469,793.00*	*27,504,813.00*	*83,888,230.00*
Total Estimated Contractor Costs	**38,800,000.00**	**37,400,000.00**	**37,400,000.00**	**113,600,000.00**

% Splits	PY20	PY21	PY22	Total
Incentive	75%	73%	74%	74%
T&M	25%	27%	26%	26%
Residential	40%	42%	42%	41%
Business	60%	58%	58%	59%
G&A as a % of Budget	4.4%	4.6%	4.7%	4.6%
Hard-to-Reach	25%	27%	28%	27%
Clean Energy Technologies	69%	66%	66%	67%
Transformational	6%	6%	6%	6%

Note: Technical Assistance HTR Values are as follows:

- PY22: $ 807,516.00
- PY23: $ 822,866.00
- PY24: $ 838,597.00
- Total: $ 2,468,979.00

Hawai'i Energy

PERFORMANCE METRICS

PERFORMANCE INDICATORS

PROPOSED PERFORMANCE AMOUNT, MECHANISM, METRICS AND ASSIGNED WEIGHTING

SUMMARY OF PROGRAM IMPACTS & LEVELIZED COST OF SAVED ENERGY

Triennial Plan

Performance Indicators													Metrics
						Minimum	Target	Fraction of Award	Target Award	PY22 Award Billing	PY23 Award Billing	PY24 Award Billing	Metrics
	KEY FOCUS AREAS	PY22 Target	PY23 Target	PY24 Target	Total Target	90%	100%	70%	$ 1,575,000	$ 525,000.00	$ 525,000.00	$ 525,000.00	
Clean Energy Technologies	**Energy Efficiency & Conservation**												
	• First Year Energy Reduction	89,807,910	87,993,581	93,252,434	271,053,925	243,948,532	271,053,925	15%	$ 337,500	$ 112,500	$ 112,500	$ 112,500	kWh
	• Lifetime Energy Reduction	1,227,351,042	1,195,399,370	1,267,379,893	3,690,130,306	3,321,117,275	3,690,130,306	15%	$ 337,500	$ 112,500	$ 112,500	$ 112,500	kWh
	• Peak Demand Reduction	17,605	14,210	14,526	46,341	41,707	46,341	20%	$ 450,000	$ 150,000	$ 150,000	$ 150,000	kW
	• Total Resource Benefit	$155,921,667	$148,429,952	$156,344,422	$460,696,041	$414,626,437	$460,696,041	15%	$ 337,500	$ 112,500	$ 112,500	$ 112,500	$
	• Grid Services Ready	2,200	1,400	1,100	4,700	N/A	4,700	5%	$ 112,500	$ 37,500	$ 37,500	$ 37,500	projects/ demand management
	• Demand Flexibility (new)	3,500	1,500	1,500	6,500	N/A	6,500	0%	$ -	$ -	$ -	$ -	products installed or customers served potential or additional load flexibility from grid service ready technologies (kW)
	• Greenhouse Gas Emissions/Barrels of Oil	63,659/146,887	62,372 /143,920	66,100 /152,521	192,131/443,328	N/A	192,131/443,328	0%	$ -	$ -	$ -	$ -	GHG Tons / Barrels based on HECO generation composition (annual) with EIA GHG per resource type
								70%	$ 1,575,000	$ 525,000	$ 525,000	$ 525,000	
						Minimum	Target	Fraction of Award	Target Award	PY22 Award Billing	PY23 Award Billing	PY24 Award Billing	Metrics
	KEY FOCUS AREAS	PY22 Target	PY23 Target	PY24 Target	Total Target	N/A	100%	20%	$ 450,000	$ 150,000	$ 150,000	$ 150,000	
Accessibility & Affordability	**Economically Disadvantaged**												
	• Business A&A (Energy Advantage, Energy Relief Grant)	550	550	550	1,650	N/A	1,650	2%	$ 45,000	$ 15,000	$ 15,000	$ 15,000	Customers served
		$1,754,612	$1,755,940	$1,757,269	$5,267,820	N/A	$5,267,820	2%	$ 45,000	$ 15,000	$ 15,000	$ 15,000	Customer bill savings
	• Residential A&A (Single & Multifamily Direct Install, Water Heating Direct Install, Bulk Appliance, Maintenance)	1,800	1,800	1,800	5,400	N/A	5,400	2%	$ 45,000	$ 15,000	$ 15,000	$ 15,000	Customers served
		$2,631,891	$2,631,891	$2,631,891	$7,895,673	N/A	$7,895,673	2%	$ 45,000	$ 15,000	$ 15,000	$ 15,000	Customer bill savings (Lifetime)
	• Community Based Energy Efficiency	4	4	4	12	N/A	12	2%	$ 45,000	$ 15,000	$ 15,000	$ 15,000	Number of communities served
	Island Equity												
	• County of Hawaii	13%	13%	13%	13%	N/A	13%						Target spend must be met in Hawaii &
	• County of Maui	13%	13%	13%	13%	N/A	13%	10%	$ 225,000	$ 75,000	$ 75,000	$ 75,000	Maui Counties for Milestone and Target
	• City & County of Honolulu	74%	74%	74%	74%	N/A	74%						Award
								20%	$ 450,000	$ 150,000.00	$ 150,000	$ 150,000	
						Minimum	Target	Fraction of Award	Target Award	PY22 Award Billing	PY23 Award Billing	PY24 Award Billing	Metrics
	KEY FOCUS AREAS	PY22 Target	PY23 Target	PY24 Target	Total Target	N/A	100%	8%	$ 180,000	$ 60,000	$ 60,000	$ 60,000	
Economic Development & Market Transformation	**Behavior Change**												
	• Workshops and Presentations												
	STEM based student workshops	1200	1200	1200	3,600	N/A	3,600	1%	$ 22,500	$ 7,500	$ 7,500	$ 7,500	Number of participant-hours of Training
	Adult learning	2500	2500	2500	7,500	N/A	7,500	1%	$ 22,500	$ 7,500	$ 7,500	$ 7,500	
	• Gamification Campaigns and Competitions	700	700	700	2,100	N/A	2100	0%	$ -	$ -	$ -	$ -	Number of Participants
	Professional Development & Technical Training												
	• Clean Energy Ally Support												
	• Targeted Ally Training Opportunities												
	• Targeted Participant Training Opportunities	7,000	7,000	7000	21,000	N/A	21,000	5%	$ 112,500	$ 37,500	$ 37,500	$ 37,500	Number of participant-hours of training
	• Educator Training and Grants												
	• Degree Program Support												
	• Vocational Training												
	Codes and Standards					N/A		1%	$ 22,500	$ 7,500	$ 7,500	$ 7,500	
	• Advocacy	7	7	7	21		21						Advocacy Events
	• Improving Code Compliance	1	1	1	3	N/A	3	Must meet all					Research on compliance and savings attr
	• Code-Related Training	150	150	150	450		450						Number of participant-hours of Training
	Clean Energy Innovation Hub												
	• Innovation and Emerging Technologies	1	1	1	3	N/A	3	0%	$ -	$ -	$ -	$ -	companies supported
	Outcome Metrics (new)	5% Increase	5% Increase	5% Increase	N/A	N/A	N/A	0%	$ -	$ -	$ -	$ -	Increase in High Efficiency Equipment Adoption
								8%	$ 180,000	$ 60,000.00	$ 60,000	$ 60,000	
	KEY FOCUS AREA					Minimum	Target	Fraction of Award	Target Award	PY22 Award Billing	PY23 Award Billing	PY24 Award Billing	Metrics
					Total Target	N/A	100%	2%	$ 45,000	$ 15,000	$ 15,000	$ 15,000	
Customer Satisfaction	• Application Processing Customer Experience - Commercial				>9.0	N/A	>9.0	1%	$ 22,500	$ 7,500	$ 7,500	$ 7,500	Overall customer satisfaction score
	• Application Processing Customer Experience - Residential				>9.0	N/A	>9.0	1%	$ 22,500	$ 7,500	$ 7,500	$ 7,500	Overall customer satisfaction score
								2%	$ 45,000	$ 15,000	$ 15,000	$ 15,000	
TOTAL PERFORMANCE AWARD								100%	$ 2,250,000	$ 750,000	$ 750,000	$ 750,000	

5. PERFORMANCE METRICS

5.1. Proposed Performance Amount, Mechanism, Metrics and Assigned Weighting

The performance award structure remains unchanged from the previous triennial cycle and the target performance award amount each year is the same as the PY21 award (the annual performance award was adjusted in PY20 in response to the pandemic). The actual performance award each year will be determined as part of the annual verification process and paid after the annual verification report is complete and approved by the PUC. In PY24, the final year of the contract cycle, the final payment will be adjusted accordingly ("trued-up") based on triennial goal achievement.

5.1.1. Overview of Performance Indicators – Metrics and Assigned Weighting

As we enter into the new performance period, the performance metrics and assigned weighting have been updated to align with the Core Program Goals – **Clean Energy Transition (70%), Accessibility & Affordability (20%), and Market Transformation & Economic Development (8%)**. We have also maintained the **Customer Satisfaction (2%)** metric category.

CLEAN ENERGY TECHNOLOGIES – 70%

Within Clean Energy Technologies, **first-year energy reduction, lifetime energy reduction, peak demand reduction, total resource benefit and grid services ready** metric categories remain consistent with previous years. The weighting for these metrics is 15%, 15%, 15%, 20%, and 5%, respectively. The targets have been established based on the goals for the overall three-year term, with adjustments only applied as a result of updates to other variables like avoided cost, system loss factor and net-to-gross values. **For first-year energy reduction, lifetime energy reduction, peak demand reduction and total resource benefit metrics, the proposed minimum target threshold 90%. The Program recognizes that this lower than the currently approved 95% threshold for the PY19 to PY21 triennial performance goals.**

Consistent with previous years, a metric (non-compensable) for **first-year and lifetime greenhouse gas impact is also included. A demand flexibility metric (non-compensable) has also been added to track additional potential for load flexibility.** Hawai'i Energy will work to quantify the potential or additional load flexibility available from grid service ready technologies installed. These new tracking metrics are intended to be future compensable metrics and Hawai'i Energy is committed to spearheading the development of measurement techniques and frameworks needed to support them.

ACCESSIBILITY & AFFORDABILITY – 20%

Hawai'i Energy remains committed to ensuring that resources are distributed equitably across geographies and socio-demographics. Consistent with previous years, we have maintained performance award allocation for economically disadvantaged and island equity.

Economically Disadvantaged (10%)

- The targets for Business A&A relate to the **Energy Advantage and the Energy Relief Grant** programs. They include both unit counts and first-year customer bill savings. These dual metrics were developed to ensure a broader base of participation is coupled with meaningful customer bill impact. The Energy Advantage targets have been set to reach 1,500 businesses and achieve $3,720,111 in first-year kWh customer bill savings over the three years. Customer bill savings will be determined based on calculated energy savings and the utility effective rate. Combined these metrics are weighted at 4% of total performance award (2% each).
- The targets for Residential A&A relate to the **Single and Multifamily Direct Install, Water Heating Direct Install, Bulk Appliance and Maintenance** programs. They include unit counts and customer bill savings over the lifetime of the measures. The overall unit count has stayed mostly consistent with previous years, where we have seen the O'ahu market nearing saturation for Multifamily Direct Install properties and a shift to the hard-to-reach single family market. Lifetime customer bill savings will be calculated based on deemed energy savings, the measure useful life and the utility effective rate for the property. These metrics are also weighted at 4% of total performance award (2% each).
- Consistent with previous years, a performance indicator for **Community-Based Energy Efficiency**, which will target number of communities reached, is also included. Community-based energy efficiency is a focus area intended to assess the energy efficiency needs of a particular hard-to-reach segment. This is 2% of total performance award.

Island Equity (10%)

- Island equity targets are set based on the proportion of PBF collections from the HECO, HELCO and MECO.

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT – 8%

Market Transformation and Economic Development programs make up 8% of the overall performance award value. This was developed in proportion with the percent of incentive dollars allocated to these programs. Each year, Hawai'i Energy takes a close look at our individual market transformation programs in order to incorporate lessons learned, market insight and

stakeholder feedback. As we improve our transformational program offerings, we strive to evolve our performance metrics in order to more accurately evaluate success. The descriptions below highlight the proposed PY22-24 metrics.

Behavior Change (2%)

- Targets for participation metrics for community workshops and presentations for STEM students and adults were maintained from PY21.
- Targets for participation metrics for gamification campaigns and competitions were maintained from PY21.

Professional Development (5%) - Targets for professional development and technical training metrics were maintained from PY21.

Codes & Standards (1%) – Targets for advocacy and code-related training metrics were increased from PY21 based on positive trends in these areas. The target for improving code compliance was maintained from PY21. The codes & standards team will continue to advocate for code adoption, assist in improving code compliance, and provide a forum for dialogue around leading-edge strategies through the energy code process.

Clean Energy Innovation Hub

- Hawai'i Energy will work closely with clean energy stakeholders like EEx to identify and support lead-edge technologies and companies.

Outcome-Based Metrics

- As part of the August 20, 2020 Order No. 37272 – *Approving the Hawai'i Energy Program Revised Triennial Plan for Program Years 2019-2021* – the PUC highlighted the need to continue to work in collaboration with the Commission Staff, EEM team, and other entities to develop, improve and propose new metrics in both the EOI and MTED areas. Subsequently, Hawai'i Energy proposed potential enhanced metrics in the last quarter of 2020 and worked with the EEM throughout 2021 to define the initial plan for PY21 outcome metrics reporting. After launching new commercial kitchen instant rebate program and refrigeration efficiency initiatives in PY21 and reporting on the proposed PY21 outcome metrics plan, Hawai'i Energy revisited the outcome metrics with further improvements given lessons learned during PY21 implementation. Hawai'i Energy has established the following two Market Transformation initiatives to focus on in accordance with the guidance from these ongoing discussions.

- ***Commercial Kitchen Equipment Midstream Program*** - This initiative's outcome metrics are focused on building an engaged distributor network that actively promotes energy-efficient equipment to Hawai'i customers.
- ***Refrigeration Training*** - This program's outcome metrics are focused on building an engaged refrigeration contractor network to increase customer reach with refrigeration efficiency improvements.

CUSTOMER SATISFACTION – 2%

Customer satisfaction is measured through online surveys that evaluate the customer application experience.

5.2. Summary of Program Impacts & Levelized Cost of Saved Energy

PY22		Total Program	w/o Trans	w/o HTR	w/o Trans & HTR
Discount Rate	A	6%	6%	6%	6%
Estimated Program Savings Life	B	14.0	14.0	14.0	14.0
Total Program Budget Less Direct Install Programs	C*	$ 28,913,623	$ 26,732,475	$ 21,567,104	$ 19,385,956
Annual kWh Saved at Customer Level	D	109,870,422	109,870,422	98,890,874	98,890,874
$Capital\ Recovery\ Factor = \frac{A \times (1+A)^B}{(1+A)^B - 1}$	A * (1 + A)^B	0.135	0.135	0.135	0.135
	(1 + A)^B - 1	1.256	1.256	1.256	1.256
	Capital Recovery Factor	0.108	0.108	0.108	0.108
$Levelized\ CSE\ in \frac{\$}{kWh} = \frac{C \times (Capital\ Recovery\ Factor)}{D}$	C	$ 28,913,623	$ 26,732,475	$ 21,567,104	$ 19,385,956
	Capital Recovery Factor	0.108	0.108	0.108	0.108
	D	109,870,422	109,870,422	98,890,874	98,890,874
PY16 Levelized Cost of Saved Energy (CSE)		**$ 0.0284**	**$ 0.0262**	**$ 0.0235**	**$ 0.0211**

PY22		
Measure life	14.0	
	Budget	**Cust. Lvl kWh**
Total budget (w/Plus up)	$ 28,913,623	109,870,422
Transformational	$ 2,181,148	-
RHTR	$ 3,191,678	3,762,639
BHTR	$ 4,154,841	7,216,910

PY23		Total Program	w/o Trans	w/o HTR	w/o Trans & HTR
Discount Rate	A	6%	6%	6%	6%
Estimated Program Savings Life	B	13.9	13.9	13.9	13.9
Total Program Budget Less Direct Install Programs	C*	$ 27,469,794	$ 25,288,646	$ 19,712,871	$ 17,531,723
Annual kWh Saved at Customer Level	D	107,096,552	107,096,552	95,848,703	95,848,703
$Capital\ Recovery\ Factor = \frac{A \times (1+A)^B}{(1+A)^B - 1}$	A * (1 + A)^B	0.135	0.135	0.135	0.135
	(1 + A)^B - 1	1.244	1.244	1.244	1.244
	Capital Recovery Factor	0.108	0.108	0.108	0.108
$Levelized\ CSE\ in \frac{\$}{kWh} = \frac{C \times (Capital\ Recovery\ Factor)}{D}$	C	$ 27,469,794	$ 25,288,646	$ 19,712,871	$17,531,723
	Capital Recovery Factor	0.108	0.108	0.108	0.108
	D	107,096,552	107,096,552	95,848,703	95,848,703
PY16 Levelized Cost of Saved Energy (CSE)		**$0.0278**	**$ 0.0256**	**$ 0.0223**	**$ 0.0198**

PY23		
Measure life	13.9	
	Budget	**Cust. Lvl kWh**
Total budget (w/Plus up)	$ 27,469,794	107,096,552
Transformational	$ 2,181,148	-
RHTR	$ 3,345,099	3,873,414
BHTR	$ 4,411,824	7,374,435

PY24		Total Program	w/o Trans	w/o HTR	w/o Trans & HTR
Discount Rate	A	6%	6%	6%	6%
Estimated Program Savings Life	B	13.8	13.8	13.8	13.8
Total Program Budget Less Direct Install Programs	C*	$ 27,504,812	$ 25,323,664	$ 19,703,773	$ 17,522.625
Annual kWh Saved at Customer Level	D	112,990,972	112,990,972	100,757,644	100,757,644
$Capital\ Recovery\ Factor = \frac{A \times (1+A)^B}{(1+A)^B - 1}$	A * (1 + A)^B	0.134	0.134	0.134	0.134
	(1 + A)^B - 1	1.238	1.238	1.238	1.238
	Capital Recovery Factor	0.108	0.108	0.108	0.108
	C	$ 27,504,812	$ 25,323,664	$ 19,703,773	$ 17,522,625
$Levelized\ CSE\ in \frac{\$}{kWh} = \frac{C \times (Capital\ Recovery\ Factor)}{D}$	Capital Recovery Factor	0.108	0.108	0.108	0.108
	D	112,990,972	112,990,972	100,757,644	100,757,644
PY16 Levelized Cost of Saved Energy (CSE)		**$ 0.0264**	**$ 0.0243**	**$ 0.0212**	**$ 0.0189**

PY24

Measure life	13.8	
	Budget	**Cust. Lvl kWh**
Total budget (w/Plus up)	$ 27,504,812	112,990,972
Transformational	$ 2,181,148	-
RHTR	$ 3,344,506	4.615.639
BHTR	$ 4,456,533	7,617,689

Hawai'i Energy

CONCLUSION

Triennial Plan

6. CONCLUSION

Hawai'i Energy is excited to launch the programming for Program Years 22-24 with our ongoing objective to make it easier for everyone in Hawai'i to participate in the clean energy movement. To help with this, we will continue to encourage and reward practical, everyday decisions around energy efficiency and clean energy. In doing so, we can collectively help businesses and residents save money, grow our economy, and reduce the demand for electricity and foreign imports.

While there are significant headwinds facing the program, energy efficiency still remains the most cost-effective resource to achieve the State's clean energy and carbon neutral goals.

The increase in cost is a result of high inflationary pressures, supply chain issues, as well as the need to accelerate adoption of kW reducing technologies in the very near term, all while reducing investment and savings from lighting.

As noted earlier in the plan, the levelized cost of saved energy is $.028 for the total program and $.020 for just Clean Energy Technologies (not inclusive of Accessibility & Affordability or Market Transformation & Economic Development programs), which allows the programs to be the lowest cost option compared to generation.

Hawai'i Energy recognizes the proposed increase in budget has implications which are not taken lightly. Based on past participation data, residential customers participating in the programs received in incentives about six times more than what they contributed from the public benefits fee and when you factor in energy savings, this increases to over 13 times when you factor in the energy savings of the equipment installed. This doesn't include all of the additional benefits from operational savings that occur as Hawai'i's residents increase their energy literacy, in part due to investment from the Program.

Hawai'i Energy also recognizes that hard-to-reach markets are named appropriately because participation is typically low within these groups. The mindset needs to change in a way that programs are easily accessible. This is precisely why Hawai'i Energy proposes to increase investment into our Accessibility and Affordability Core Area by 62% over the last program year. It is important these groups participate in our programs and realize the benefits and savings associated with smart energy choices.

As Hawai'i Energy prepares for this new performance period, we intend to continue building and fostering relationships with community partners, energy stakeholders, and the residents and businesses of Hawai'i. We are dedicated to our mission and prepared to do all we can to deliver best-in-class program offerings to help save money, save energy, and pursue a 100% clean energy future.

Mahalo for your continued interest and support of the Hawai'i Energy programs.

Hawai'i Energy

APPENDIX A

BUDGET CATEGORY ACRONYMS

Triennial Plan

INCENTIVES

	Focus Area	Budget Category	Measures		Description
BUSINESS	Clean Energy Transition	Custom Business Energy Efficiency Measures	CBEEM	Custom calculated savings for not-prescriptive projects for equipment including lighting, HVAC, controls, pumps, motors water heating	Direct incentives to customers and trade allies.
	Clean Energy Transition	Business Energy Efficiency Measures	BEEM	Prescriptive lighting, HVAC, motors, pumps, transformers etc.	Direct incentives to customers and trade allies.
	Clean Energy Transition	Business Energy Services and Maintenance	BESM	Whole building assistance, energy audits, retro-commissioning, technical support, energy-water nexus, metering and monitoring, strategic energy management	Direct incentives to customers and trade allies. Technical services including project scoping, audits, energy modeling, customer data analytics via regression models, ongoing commissioning work, customer-sited staffing support, code compliance studies, appliance standards education.
	Clean Energy Transition	Business Grid Services Ready	BGRID	Technical support and incentives for IDSM technologies that include DR capabilities and/or energy storage	Direct incentives to customers and trade allies. Technical services including field work, support for installations and inspections.
	Access and Affordability	Business Hard to Reach	BHTR	Access & Affordability programs such as small business direct install, commercial kitchen, hard to reach grid services	Direct incentives to customers and trade allies. Technical services including field work, installations, bulk purchases, hauling, recycling and inspections.
	Market Transformation	Business Transformational	BTRAN	Market transformation programs: professional development and technical training, codes and standards, clean energy innovation	Program services and subcontracted work focusing on identifying needs and coordinating technical and professional development training for customers and contractors (CEA's) to elevate expertise and further economic development.
RESIDENTIAL	Clean Energy Transition	Custom Residential Energy Efficiency Measures	CREEM	Custom whole home services and retrofits, new construction programs and emerging tech	Direct incentives to customers and trade allies. Technical services including field work, installations, bulk purchases, hauling, recycling and inspections.
	Clean Energy Transition	Residential Energy Efficiency Measures	REEM	Prescriptive lighting, appliances, water heating, electronics and bounty programs	Direct incentives to customers and trade allies.
	Clean Energy Transition	Residential Energy Services and Maintenance	RESM	Residential AC and solar water heating tune-ups, audits, technical support and appliance standards savings	Direct incentives to customers and trade allies. Technical services including field work, installations, bulk purchases, hauling, recycling and inspections.
	Clean Energy Transition	Residential Grid Services Ready	RGRID	Technical support and incentives for IDSM technologies that include DR capabilities and/or energy storage	Direct incentives to customers and trade allies. Technical services including field work, installations and inspections.
	Access and Affordability	Residential Hard to Reach	RHTR	Access & Affordability programs including multi- and single-family direct install, community bulk purchase programs and direct install water heating	Direct incentives to customers and trade allies. Technical services including field work, installations, bulk purchases, hauling, recycling and inspections.
	Market Transformation	Residential Transformational	RTRAN	Market transformation programs: behavior change, outreach and education, energy literacy, workforce training, professional development and technical training, codes and standards and clean energy innovation	Program services and subcontracted work focusing on improving energy literacy through training and community engagement to help families make smart energy choices and reduce their energy usage.

NON-INCENTIVES

	Focus Area	Budget Category	Measures		Description
BUSINESS	Clean Energy Transition	Custom Business Energy Efficiency Measures	CBEEM	Custom calculated savings for non-prescriptive projects for equipment including lighting, HVAC, controls, pumps, motors water heating	Program implementation services including planning, coordination, and collaboration tasks that occur after identifying a customer or community to be served. (e.g. customer support and advising, bill analysis, reviewing equipment specifications, site visits).
	Clean Energy Transition	Business Energy Efficiency Measures	BEEM	Prescriptive lighting, HVAC, motors, pumps, transformers etc.	
	Clean Energy Transition	Business Energy Services & Maintenance	BESM	Whole building assistance, energy audits, retro-commissioning, technical support, energy-water nexus, metering and monitoring, strategic energy management	
	Clean Energy Transition	Business Grid Services Ready	BGRID	Technical support and incentives for IDSM technologies that include DR capabilities and/or energy storage	
	Clean Energy Transition	Business Market Evaluation	Business Market Evaluation	All Clean Energy Transition Measures	Services associated with evaluation tasks such as Annual Report, EM&V Support, TRM, TRB, metric calculation questions. Also includes overall program reporting, such as Annual Plan.
	Clean Energy Transition	Business Outreach	Business Outreach	All Clean Energy Transition Measures	Services associated with community/sector outreach support for all clean energy transition measures. Tasks include community event/trade show support, marketing collateral materials, advertising, and overall measure specific strategic marketing activities.
	Access and Affordability	Business Hard to Reach	BHTR	Access & Affordability programs such as small business direct install, commercial kitchen, hard to reach grid services	Program implementation services including planning, coordination and collaboration tasks (e.g. rebate processing, customer support and advising, forecasting, project lead generation).
	Access and Affordability	Business Hard to Reach Outreach	BHTR Outreach	Access & Affordability programs such as small business direct install, Empower non-profit program, commercial kitchen, hard to reach grid services	Services associated with community/sector outreach support for all Business Hard to Reach measures. Tasks include community event/trade show support, marketing collateral materials, advertising, and overall measure specific strategic marketing activities.

NON-INCENTIVES

	Focus Area		Budget Category	Measures	Description
RESIDENTIAL	Clean Energy Transition	CREEM	Custom Residential Energy Efficiency Measures	Custom whole home services and retrofits, new construction programs and emerging tech	Program implementation services including planning, coordination, and collaboration tasks that occur prior to identifying a customer or community to be served. (e.g. forecasting, project lead generation, standard rebate processing)
	Clean Energy Transition	REEM	Residential Energy Efficiency Measures	Prescriptive lighting, appliances, water heating, electronics and bounty programs	
	Clean Energy Transition	RESM	Residential Energy Services and Maintenance	Residential AC and solar water heating tune-ups, audits, technical support and appliance standards savings	
	Clean Energy Transition	RGRID	Residential Grid Services Ready	Technical support and incentives for IDSM technologies that include DR capabilities and/or energy storage	
	Clean Energy Transition	Residential Market Evaluation	Residential Market Evaluation	All Clean Energy Transition Measures	Services associated with evaluation tasks such as Annual Report, EM&V Support, TRM, TRB, metric calculation questions. Also includes overall program reporting, such as Annual Plan.
	Clean Energy Transition	Residential Outreach	Residential Outreach	All Clean Energy Transition Measures	Services associated with community/sector outreach support for all clean energy transition measures. Tasks include community event/trade show support, marketing collateral materials, advertising, and overall measure specific strategic marketing activities.
	Access and Affordability	RHTR	Residential Hard to Reach	Access & Affordability programs including multi- and single-family direct install, community bulk purchase programs and direct install water heating	Program implementation services including planning, coordination and collaboration tasks (e.g. rebate processing, customer support and advising, forecasting, project lead generation).
	Access and Affordability	RHTR Outreach	Residential Hard to Reach Outreach	Access & Affordability programs such as small business direct install, Empower non-profit program, commercial kitchen, hard to reach grid services	Services associated with community/sector outreach support for all residential hard to reach measures. Tasks include community event/trade show support, marketing collateral materials, advertising, and overall measure specific strategic marketing activities.
SUPPORT SERVICES	ALL	General & Administrative Support	General & Administrative Support	ALL	Program administration costs which include accounting and billing, procurement and purchasing, contracting, subcontractor and client invoicing.
	ALL	IT & Data Management & Visualization	IT & Data Management & Visualization	ALL	Services and expenses related to data transfers from the utility, energy savings and financial reporting and tracking, program related software and applications for program and contractor participation, and program (not customer-specific) data analytics for program planning and targeting purposes.
	ALL	Branding	Branding	ALL	Overall program branding and marketing, including branding campaigns, advertising, and market surveys.
INFRA-STRUCTURE	ALL	Infrastructure/ Facility Fee	Infrastructure/ Facility Fee	ALL	Fixed fee to cover infrastructure costs associated with the program. These expenses include but are not limited to office lease, IT and communications infrastructure, equipment and furnishings. Cost escalation increases are risk to Leidos.

Hawai'i Energy

APPENDIX B

PROGRAM DELIVERY STRATEGIES "BLUE PAGES"

Triennial Plan

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CLEAN ENERGY TECHNOLOGIES & ENERGY OPTIMIZATION

BUSINESS PROGRAM

BUSINESS PROGRAM

Whole Building Assistance

Program Category	**Clean Energy Technologies - Business Program** **Business Energy Advising** *Energy Advisory Incentive Offers*
Description	**Energy Audits** Overcoming the customer barrier of lack of information in helping to identify and quantify the impact of efficiency projects, the Program will provide incentives to complete an energy audit. Incentivizing the installation of equipment with a short-term payback may be a strategy employed to drive action from the information garnered through the audit. **New Construction Energy Modeling** The energy modeling incentive encourages building owners, developers, and architects to conduct a holistic analysis of a building's design performance to leverage the interactive efficiency effects to various systems during the design development stage and ultimately move forward with a design that exceeds energy code requirements. This offer creates a pathway for Hawai'i Energy to join conversations early in the commercial new construction design process, allowing the Program to be a trusted resource to the developer/building owner as they make design decisions that affect energy performance. Once construction is complete, a new construction incentive may be awarded for the efficiency measures installed. **Retro-Commissioning and Re-Commissioning** The recommissioning and retro-commissioning measure incentivizes building owners to evaluate and/or periodically re-evaluate the effectiveness and efficiency of current building systems for optimal performance. Savings are achieved by optimizing building systems and assemblies to operate as efficiently as possible based on design criteria, data evaluation, and operational parameters. These savings opportunities will likely be a combination of no and low-cost operational adjustments and sequencing, low-cost equipment optimization, and capital improvement projects, such as: • Implementation of an automated building management system to control lighting and HVAC schedules and setpoints. • An education and training component for building operations personnel on how to operate the building efficiently, focusing particularly on operations and maintenance changes implemented during retro-commissioning • Inspecting HVAC duct work for leaks and damage • Identifying peak load shaving options • Documenting findings and develop an action plan to implement recommended measures that reduce electricity usage • Reducing energy consumption in commercial and industrial facilities by incentivizing energy conservation measures through the customized incentive program. **Metering and Monitoring**

	Advanced submetering and energy monitoring can help customers gain crucial insight into when, where, and how much energy is being used within their facility. This information is valuable when determining areas for energy efficiency improvements. Like retro-commissioning, metering and monitoring can be used to determine the effectiveness and efficiency of current building systems for optimal performance. Where building systems are not preforming optimally, data from metering and monitoring can be used to fine tune those systems and verify savings from any operational changes to those systems.
Target Audience	• Work with developers, property managers, facilities directors, chief engineers and governmental facilities departments, electrical and mechanical contractors • Customer types include: office buildings, hotels, hospitals, multifamily, and large commercial facilities
Barriers & Risks	• Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products • Trust and creditability of technology providers • Unaware of business benefits of reducing exposure to cost of energy changes • Access to and/or understanding of financing
Implementation Strategy	Deeper engagement with electrical and mechanical engineering firms, commissioning professionals, large customers with identified energy teams or with a defined strategic energy plan.
Cost	Total Direct Incentives Budget for PY22-24: **$1,356,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **179,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **--**

BUSINESS PROGRAM

Submetering

Program Category	**Clean Energy Technologies - Business Program** **Business Energy Advising** *Energy Advisory Incentive Offers*
Description	Submetering is designed to assist master-metered condominiums and their Association of Apartment Owners (AOAO) to install billing submeters for their units and common areas to drive energy conservation and ensure equity and fairness in allocating energy costs to tenants and/or owners of their condominium units. The knowledge of personal energy usage and the responsibility to pay for it can result in energy usage behavior modification and reward those making investments in energy-efficient equipment. The combination of billing submeters, along with education, peer group comparisons and special equipment offerings, will assist the owner or tenant to achieve significant energy conservation and efficiency.
Target Audience	Commercial property owners and condominium owners
Barriers & Risks	• High Initial first cost. • Lack of familiarity with availability of energy-efficient technology and the vendors offering these services and products • Unaware of behavioral changes made possible through unit level metering • Rigid administrative requirements, such as AOAO board approval process
Implementation Strategy	Close collaboration with vendors and building owners as well as leveraging memberships in professional organizations to raise awareness and generate project leads.
Cost	Total Direct Incentives Budget for PY22-24: **$367,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **1,393,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **221**

BUSINESS PROGRAM

Strategic Energy Management

Program Category	**Clean Energy Technologies - Business Program** **Business Energy Advising** *Energy Advisory Incentive Offers*
Description	While SEM may identify the need for efficient energy upgrades like equipment replacement or capital upgrades, the framework places greater emphasis on how and why energy is used in the processes that comprise today's businesses and organizations, who uses it, why they need to reduce consumption, and what tools are available to help them along the way. At its heart an SEM program is a data-driven institution-wide learning experience that is reinforced by a behavioral science curriculum and robust advanced savings analysis (M&V). It focuses on teaching "how-to knowledge/tools" to participants that help them identify and intentionally build an effective and supportive energy management culture across their organization. Separately, by helping participants to identifying quick cost-and carbon saving opportunities through the "Treasure Hunt" process, a SEM program also looks to build enthusiasm and buy-in to the SEM approach and ensure commitment at senior levels to embed and align energy management with sustainability efforts, GHG goals and other initiatives. Major components of an SEM program include assisting customers with the creation of an energy master plan, forming an energy team, attending formal trainings, participating in peer-to-peer learning opportunities, conducting an energy Treasure Hunt and implementing energy savings measures, and creating activities to engage employees in energy management. The goal of any SEM conversation is to help customers think about how they can proactively manage their energy consumption, and waste, and as an account management tool, SEM helps to establish and frame a lasting partnership with the customer that is focused on facilitating conversations around continuously improving energy performance, increasing operational competencies and cost savings year after year. Similarly, the Energy Treasure Hunt helps to engage customers directly in identifying and prioritizing energy reduction efforts, from low-and no-cost opportunities to larger capital projects. Supported by robust data and savings analysis alongside engineering and technical insights, it also helps to further build trust with customers and generating leads for more traditional resource acquisition projects, alongside energy savings that are achieved through sustained organizational change (behavior and work processes). When integrated alongside SEM training curricula that introduce the concepts of organizational energy management systems and best practices, customers are also taught how to champion their own sustainability goals and meet other evolving energy and environmental regulations and requirements at the local and national level.
Target Audience	Targeting participation from state and county governments, hospitals, hotels, large customers with MV90 data, industrial facilities.

Barriers & Risks	• Facilities staff time and leadership buy-in is required to engage the customer in driving organizational change • Customer organization needs commitment and an identified energy champion to ensure the team stays on task • Quantifying savings or benefits is challenging without interval energy data
Implementation Strategy	• Consultations with VEIC, Leidos as well as using ENERGY STAR® resources • Collaborate with U.S. Department of Energy's Better Buildings Challenge to implement best practices and facilitate Hawai'i businesses in becoming Better Buildings Partners • Collaboration with Hawai'i State Energy Office • Partnering with federal organizations deploying ISO 50001 • Develop customer- and tool-specific workshop materials
Cost	Direct incentives for projects that may result from SEM-related customer engagement are included under the relevant business program measure budgets.
Benefits	Energy and demand savings are claimed under the associated program for the measures implemented.

BUSINESS PROGRAM

Energy-Water Nexus

Program Category	**Clean Energy Technologies - Business Program** **Business Energy Advising** *Energy Advisory Incentive Offers*
Description	Support for water and wastewater utilities can take the form of financial incentives for technologies such as leak detection loggers and energy-efficient equipment upgrades that reduce water loss which leads to direct energy savings. Other support may include incentives for repair kits for leak detection loggers, energy studies to explore efficiency opportunities, as well as programmatic support for training utility operators on energy conservation methods and technologies.
Target Audience	Water and wastewater utilities on Hawai'i, Honolulu, and Maui counties
Barriers & Risks	• Limited customer staff capacity to focus on energy projects • Energy and flow data availability
Implementation Strategy	Work with potential partners, including Department of Water Supply (Hawai'i, Maui County), Board of Water Supply (Honolulu County), City & County of Honolulu Environmental Services Division, Hawai'i Rural Water Association, American Water Works Association – Hawai'i Section
Cost	Total Direct Incentives Budget for PY22-24: **$75,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **118,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **12**

BUSINESS PROGRAM

Building Envelope

Program Category	**Clean Energy Technologies - Business Program** **Business Energy Advising** *Energy Advisory Incentive Offers*
Description	The Building Envelope incentive offers customer rebates for purchase and installation of window tinting and will continue in the next triennial to promote market uptake of this technology by reducing first costs. Window tinting can save energy by reducing heat gain through windows as well as preventing lowering of temperature setpoints by occupants near the windows. Modern tints can provide the rejection of infrared energy while not blocking visible light. This expands tinting opportunities in view sensitive locations such as hotel and office buildings.
Target Audience	• Large and small commercial facility customers doing building improvement projects • Work with Property Managers, Facilities Directors, Chief Engineers, and design professionals
Barriers & Risks	• High cost as a standalone measure • Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products
Implementation Strategy	The program is delivered to customers by CEAs encouraging customer participation and assisting with application submittal.
Cost	Total Direct Incentives Budget for PY22-24: **$38,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **382,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **11**

BUSINESS PROGRAM

ENERGY STAR® Commercial Kitchen Equipment

Program Category	**Accessibility & Affordability – Business Program** *Incentive Offers*
Description	**Measures** • Kitchen Exhaust Hood Demand • Ventilation • Commercial Ice Machine • Commercial Electric Steam Cooker • Commercial Electric Griddle • Commercial Fryer • Commercial Hot Food Holding Cabinet • Commercial Combination Oven • Commercial Convection Oven • Commercial Reach-In Refrigerator • Commercial Reach-In Freezer • Commercial Dishwasher • Commercial Low Flow Spray Nozzle • Commercial Steam Cooker
Target Audience	Restaurants and commercial kitchens
Barriers	• Traditionally low customer participation and low saturation rate of high efficiency equipment • Lack of time and/or expertise to engage in areas not directly related to their core business • Lack of access to capital, smaller profit margins • Difficulties in scheduling capital improvements due to long hours of operation • Global supply chain delay impacts • Increase in material and freight cost
Implementation Strategy	**Staffing** Business team – staff member hired that is dedicated to implement • Implement incentive programs • Provide Commercial Kitchen training, etc. • Transformational team – tracking of workshop/training hours • Marketing & Communications – lead generation, relationship building, strategic marketing **Third-Party Contractors**

	• Equipment distributors, installers, Clean Energy Ally network **Other** • Implement use of online portal system to create transparency and easier navigation for distributors
Cost	Total Direct Incentives Budget for PY22-24: **$616,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **3,081,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **568**

BUSINESS PROGRAM

HVAC

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*
Description	**Guest Room Energy Management Systems (EMS)** Hotel guest room HVAC can be left to run all day and night if left on. Installing guest room energy management systems that sets back the thermostat while guests are out by way of occupancy sensors can save a significant amount of energy. With demand response capabilities enabled, this technology may be deployed for peak demand load shedding if the customer participates in a utility demand response program. **Package and Split Units** The air-cooled package units are most often found in small commercial facilities as they are least first-cost and maintenance intensive of HVAC options to this market. The units are often roof-top mounted and feed constant volume distribution systems. The most cost effective opportunity to reduce energy consumption in these units are to replace them with the highest efficiency unit available and potentially convert at the same time to a VAV distribution system to increase both comfort and reduce cooling loads. A higher cost option is to convert to VRF split systems. **Inverter Driven Variable Refrigerant Flow (VRF)** Inverter driven variable refrigerant flow (VRF) air conditioning systems are direct expansion AC systems that utilize variable speed evaporator/condenser fans, and a combination of fixed and variable speed compressors along with most often multiple individual zone evaporators to provide the ability to more closely match the AC system's output with the building's cooling requirements. A potential of 20 to 35% energy savings come from: • Part Load Efficiencies: Increased part-load efficiency operation • High Efficiency Motors: Many systems use ECM motors • Higher Room Temperatures: The capacity matching allows for better humidity control through longer cooling operation. • Reduction of Distribution Losses: Duct losses are reduced with DX systems. This may be offset by dedicated outside air distribution systems when needed. **Variable Frequency Drives (VFD)** The use of variable frequency drives to vary motor speeds to control flow in response to changes in loads provides significant savings in HVAC applications of supply, return and exhaust fans as well as chilled water and condenser water pumps.
Target Audience	• Large commercial facility customers with existing chillers including centrifugal, screw, scroll and reciprocating approaching the end of their useful life

	• Small commercial facilities customers with existing rooftop package units, or splits systems approaching the end of their useful life. • Work with property managers, facilities directors, mechanical contractors, mechanical engineers
Barriers & Risks	• High initial cost • Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products
Implementation Strategy	To be eligible, chiller efficiency must exceed IECC 2015 code (consistent with ASHRAE 90.1-2016) code, Path A or Path B, by 10% or more. The following chiller retrofits should be evaluated as custom projects: water-cooled chillers larger than or equal to 600 tons, air-cooled chillers larger than or equal to 300 tons, and any chiller part of a larger, multi-system plant. In addition, a custom approach should be used for early retirement chiller projects and chillers installed in industrial or cold storage applications.
Cost	Total Direct Incentives Budget for PY22-24: **$4,854,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **20,685,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **3,535**

BUSINESS PROGRAM

Lighting

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*

Description	**Measures**
	• LED
	  ○ Linear T8 to Linear LED Tube: w/ Integrated Driver - Plug & Play (Type A)
	  ○ Linear T12/T8 to Linear LED Tube: w/ Remote Driver (Type C)
	  ○ Omni-Directional (Screw-In & Pin)
	  ○ Specialty (Screw-In & Pin)
	  ○ LED HID Replacements
	  ○ LED Flat Panel Drop-In Replacements
	  ○ LED Refrigerated Case Lighting
	  ○ LED Exit Signs
	• LED Troffer (fixture replacement or retrofit kit)
	  ○ 1ft x 4ft
	  ○ 2ft x 2ft
	  ○ 2ft x 4ft
	• Occupancy Controls, Sensors & Timers
	• Delamping
	  ○ Delamping with Reflector Kit (2, 4 & 8 ft. lamp)
	  ○ Delamping Only (2, 4 & 8 ft. lamp)

Target Audience	• Work with property managers, facilities directors, chief engineers, governmental facilities departments, electrical engineers, contractors • All commercial facilities
Barriers & Risks	• Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products • Trust and creditability of technology providers • Unaware of non-energy benefits • Access to and/or understanding of financial options • Split-incentive between tenants and building owners
Implementation Strategy	Incentive for efficient lighting measure will be offer in two ways. The first is through our traditional trade ally provided program, where electrical contractors provide the lighting upgrades to our customer and the customer submits an application for a rebate for the lighting upgrade. The second way incentive will be offered to our customer is instantly at the point of purchase through our midstream lighting program. This program has proven to be the most cost-effective way to deliver a lighting incentive program to the local

	market, and the program makes it easy for customers to participate. By offering the incentive at the point of purchase and without requiring applications, Hawai'i Energy simplifies program participation resulting in more customers benefitting from the program. Further, by concentrating multiple customer transactions into a single data exchange between the distributor and Hawai'i Energy, we leverage the tracking and sales software of our partnering distributors to reduce the cost to process customer transactions. To be eligible, lighting measure have to be either Energy Star or Design Lights Consortium (DLC) certified. Implement with electrical contractors and lighting distributors.
Cost	Total Direct Incentives Budget for PY22-24: **$5,351,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **36,839,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **6,682**

BUSINESS PROGRAM

New Construction & Major Renovation

Program Category	**Clean Energy Technologies** **Business Program** **Supply Chain Engagement** **Equipment Incentive Offers**
Description	New construction and major renovation incentives incentivize incorporating energy-efficient features into building designs and exceeding building code requirements. The incentives awarded upon construction are based on one of the following approaches: **Energy Modeling Approach** An energy model, typically completed at the design stage, takes into account building loads, schedules, settings, renewable generation systems along with system interactions to simulate building energy performance. The simulated performance can be compared against energy code, and new construction incentive awarded upon construction is based on the difference between the building's modeled energy use and code-required performance. **Systems Approach** If the building design is already in place, owners and developers can seek incentives for the energy-efficient equipment installed that meet Hawai'i Energy's minimum requirements or if the equipment specifications exceed code-requirements.
Target Audience	• Work with building owners, developers, architects, facilities directors • New commercial and multifamily buildings
Barriers & Risk	• High initial first cost • Lack of familiarity with availability of high efficiency technology and the vendors offering these services and products • Difficulty obtaining required equipment information and documentation
Implementation Strategy	Close collaboration with building owners, developers, and property managers is needed for industry awareness around incentives available and the steps to apply. To gain traction around affordable housing new construction incentives, the Program will also need to collaborate with state and local agencies that function within the affordable housing spaces such as Hawai'i Housing Finance and Development Corporation, the City and County of Honolulu Office of Housing.
Cost	Total Direct Incentives Budget for PY22-24: **$1,824,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **13,216,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **1,589**

BUSINESS PROGRAM

Pumps and Motors

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*
Description	**Variable Frequency Drives (VFDs) for Domestic Water Booster Pumps** Pool pumps often run much longer than necessary. A variable speed commercial pool pump motor in place of a standard single speed motor can save energy and maintain a comfortable swimming pool temperature and chemical circulation by using a smaller, higher efficiency pump and by operating it less. **Variable Frequency Drives (VFDs) Pool Pump Packages** There is an opportunity to save energy with motors designed to utilize less power for the same horsepower of work. Motors in many applications (Water pumping and air handing) have long operational hours and are often out of sight and mind until they fail. Motor must meet minimum efficiency requirement above NEMA Premium Efficiency which is now considered the base standard. Incentive levels will be based on the size, in horsepower, of the motor. **EC Motors for Fan Coil Units** There is an opportunity to save energy with EC motors that have higher electrical efficiency (electronically commutated motor, 70 percent efficient or more) than PSC (permanent split capacitor, 49 percent efficient) or shaded pole (32 percent efficient). In addition, "cooler" motor operation creates less heat load on the conditioned space. **Premium Efficiency Motors** For HVAC applications such as supply fans, return fans, exhaust fans, chilled water pumps, and boiler feed water pumps, facilities can find energy savings with premium efficiency three phase Open Drip Proof (ODP) and Totally Enclosed Fan-Cooled (TEFC) motors.
Target Audience	• Work with property managers, facilities directors, chief engineers and governmental facilities departments mechanical contractors and VFD pump package suppliers. • Apartments, office buildings, hotels, hospitals, and commercial buildings with swimming pools
Barriers & Risk	• High initial first cost • Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products • Trust and creditability of technology providers • Unaware of business benefits of reducing exposure to cost of energy changes • Access to and/or understanding of financial options • Rigid administrative requirements, such as AOAO board approval processes

Implementation	Close collaboration with mechanical engineering firms and contractors, and electrical equipment distributors to overcome customer barriers
Cost	Total Direct Incentives Budget for PY22-24: **$300,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **3,643,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **369**

BUSINESS PROGRAM

Refrigeration

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*
Description	**Evaporator Fan Motor Controls and Floating Head Pressure Controls** Controls on refrigeration equipment can lead to incremental savings by automatically adjusting to conditions read from other parts of the system. **Electronically Commutated (EC) Motors for Refrigeration, High Efficiency Condensing Units and Evaporators** Retrofitting standard shaded pole motors with EC motors that have integrated controls can lead to significant energy savings in walk-in coolers/freezers and cold storage applications. High efficiency evaporators (HEEvaps) and high efficiency condensing units (HECUs) are ideal for walk-in coolers and freezers. A retrofit rebate requires the use of EC motors. **Refrigerated Case Night Covers and Adding Doors** The installation of retractable aluminum woven fabric covers for open-type refrigerated display cases, where the covers are deployed during the facility's unoccupied hours in order to reduce refrigeration energy consumption. Adding doors to refrigerated cases make it easier for the system to maintain the temperature set point and increases the life of the system. **Refrigerated Case Anti-Sweat Heater Controls** Refrigerated case doors contain electric heaters that run 24/7 to reduce moisture build-up. Anti-sweat heater controls regulate these heaters so that they will turn off when they are not needed. ASH controls can also extend condenser life. **Refrigerated Case Lighting** LEDs for refrigerated cases emit less heat than fluorescents.
Target Audience	• Work with building owners, property managers, facilities directors, chief engineers • Customers include grocery, cold storage, restaurants, retail stores
Barriers & Risk	• High initial first cost • Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products • Trust and creditability of technology providers • Unaware of business benefits of reducing exposure to cost of energy changes
Implementation	Investing in educating refrigeration contractors and customers about refrigeration efficiency is the first step to increasing market adoption of energy-efficient refrigeration equipment. The Program can target customers with significant refrigeration loads and offer one-on-one technical assistance such as energy

	walkthroughs and energy data analysis in addition to direct incentives to help develop projects.
Cost	Total Direct Incentives Budget for PY22-24: **$792,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **3,545,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **398**

BUSINESS PROGRAM

Smart Devices

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*
Description	The smart device incentive supports installation and provision of hardware and software that tracks customer energy use and makes it easier to manage. These energy management systems are typically installed in small-to medium-sized businesses that have HVAC or refrigeration loads that can be monitored and controlled. Beyond traditional energy efficiency, the system has demand response capability if the customer chooses to enroll in a utility program in the future.
Target Audience	• Work with smart device system vendors, small business owners, property managers • Customers include restaurants, convenience stores, retail stores, grocery
Barriers & Risk	• Lack of familiarity with the technology • Trust and credibility of vendors • Unaware of business benefits of energy management systems
Implementation	Collaboration with the vendors is needed to market the smart device program and educate small- and medium-sized businesses about the energy savings potential of these systems. It has seen most success with chain stores and restaurants that can pilot the technology in a few locations, measure success, then deploy it across all their locations. It is likely that these types of customers will continue to have the highest rates of installation.
Cost	Total Direct Incentives Budget for PY22-24: **$688,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **606,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **374**

BUSINESS PROGRAM

Industrial Equipment (Transformers)

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*
Description	Transformers take the high voltage from the incoming line and step it down to a voltage that is usable by the facility's equipment. As a result, the transformer is running 24/7 and thus incurring core loss at all times. The use of better materials and engineering design can help to minimize these losses and produce higher efficiency transformers. This program seeks to offset some of the capital cost of purchasing these premium transformers in order to maximize efficiency and reduce wasted energy.
Target Audience	• Work with property managers, facilities directors, chief engineers and governmental facilities departments, electrical contractors • Customers include office buildings, universities, hotels, hospitals, large commercial facilities
Barriers & Risk	• High initial first cost • Replacement typically occurs at end of life or later • Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products • Trust and creditability of technology providers • Access to and/or understanding of financial options
Implementation Strategy	• Work with electrical and mechanical engineering firms and contractors • Targeted outreach in close collaboration with transformer distributors
Cost	Total Direct Incentives Budget for PY22-24: **$489,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **2,646,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **251**

BUSINESS PROGRAM

Water Heating

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*
Description	Commercial solar water heaters can provide a renewable energy source of water heating. The systems can reduce electrical consumption for water heating by providing supplemental pre-heating all the way to 100% of the water heating needs limited by the hot water demand characteristic and the site's physical constraints on storage tank and panel locations. **Commercial Solar Water Heaters** • Electric resistance • Heat pump **Heat Pumps** • Conversion from standard electric resistance
Target Audience	• AOAOs, Property Managers, Governmental Facilities Departments, Mechanical Contractors and Plumbing Suppliers. • Apartments, Hotels, and Government Housing
Barriers & Risk	• High initial first cost • Sufficient roof space for the installation • Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products • Trust and creditability of technology providers • Unaware of business benefits of reducing exposure to cost of energy changes • Access to and/or understanding of financial options
Implementation Strategy	Work with AOAO's, town home HOA's, solar water heating contractors, mechanical engineering firms and contractors, and plumbing equipment distributors
Cost	Total Direct Incentives Budget for PY22-24: **$377,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **3,678,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **2,122**

BUSINESS PROGRAM

Customized Projects

Program Category	**Clean Energy Technologies - Business Program** **Supply Chain Engagement** *Equipment Incentive Offers*
Description	This program provides for incentives for all energy-savings measures that are not already covered by the prescribed incentives. Custom incentives will not be limited to a certain list of measures. **Customized Project Criteria** • Payback of greater than one year or 6 months for LED projects. • Pass the utility benefit-cost test, Total Resource Cost Ratio (TRC) based on the value of the utility avoided demand (kW) and avoided energy (kWh) that the project produces • Incentive rate will not exceed 50 percent of incremental cost of the energy efficiency improvement unless otherwise approved by the Program
Target Audience	• Work with property managers, facilities directors, chief engineers and governmental facilities departments, mechanical engineers and contractors • Customers include all commercial facilities
Barriers & Risk	• Market acceptance of new technologies • High initial first cost • Risk avoidance • Lack of familiarity with availability of energy efficient technology and the vendors offering these services and products • Trust and creditability of technology providers • Unaware of business benefits of reducing exposure to cost of energy changes • Access to and/or understanding of financial options
Implementation Strategy	There is a pre-approval process for customers to receive incentives for installing non-standard energy efficiency technologies which does not include lighting and transformers for which there is precedence for savings calculations. The intent of this structure is to enable customers to invest in energy efficiency processes and technology measures that may require calculations of energy savings for unique applications. Incentive awards will be based on calculated savings that ensure program cost-effectiveness. The customer must submit a brief proposal that describes the project and includes estimates of energy savings and payback. • Engineering calculations are required and may be reviewed either internally and/or with a third-party engineering firm • Program provide feedback on the project to clarify if needed

	• In some case pre-installation and post installation metering may be required to verify savings Potential collaborators include electrical and mechanical engineers and contractors.
Cost	Total Direct Incentives Budget for PY22-24: **$15,531,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **85,564,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **9,271**

CLEAN ENERGY TECHNOLOGIES & ENERGY OPTIMIZATION

RESIDENTIAL PROGRAM

RESIDENTIAL PROGRAM

Upstream Lighting

Program Category	**Clean Energy Technologies – Residential Programs** **Direct Consumer Purchases**
Description	Lighting rebates are offered upstream through manufacturer direct incentives which are provided as point-of-sale cost reductions. The objective of the lighting program is to increase market demand for high efficiency LED lighting options by lowering product prices and increasing efficient product availability. Hawai'i Energy's lighting program has seen continued success since 2009, and these upstream rebates are critical in ensuring that Hawai'i residents choose ENERGY STAR® LEDs, rather than inefficient halogen bulbs or low-quality LED products that remain prevalent on retailer shelves. In addition, point of sale delivery offers a cost-effective implementation strategy for promoting high-volume, efficient product options and opens the door for prime placement of quality products on retail shelves and end caps. As the technology evolves and prices for standard A19s have decreased, the program will be significantly reducing incentives and targets for A19s, focusing more on **specialty lighting (including PARs, MR16s, decorative lights, security lighting and smart lamps)** which provide a potential additional grid service with controllability. In addition to the retail channels for lighting, Hawai'i Energy will also focus on replacing bulbs in existing sockets throughout homes across the islands, via a direct installation program such as the Energy Smart 4 Homes program. Hawai'i Energy will also continue to expand our current partnerships with Foodbanks across the islands, offering no-cost LED bulbs to our most underserved customers seeking food assistance through organized food distribution events.
Target Audience	• Residents – single family and multifamily dwellings • Manufacturers, Distributors, Dealers and Retailers
Barriers & Risk	• Lack of understanding about how energy is used in the home • Lack of understanding as to which technology is the most appropriate for existing fixtures • Product availability of specialty and dimmable LEDs within the customer shopping area
Implementation Strategy	• Distributors, retailers, and manufacturers complete a program application in which they commit to advertising and promotion for instant rebates for the LEDs sold to customers. • Participating retailers agree to display signage showing the rebate has been provided by the program, provide assistance in ordering and stocking qualifying products, and provide sales staff training. • Retailers agree to promote consumer education, undergo staff training and follow proper procedures.

	• Manufacturers provide accurate, timely data on point of purchase information by store by SKU for rebate reimbursement. • Rebates are administered to manufacturers and expected to reduce the retail price of the lighting. • Replace bulbs in existing sockets via direct installation through Energy Smart 4 Homes Program.
Cost	Total Direct Incentives Budget for PY22-24: **$3,705,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **13,068,400** Total 1st Year Peak Demand Savings (kW) for PY22-24: **2,037**

RESIDENTIAL PROGRAM

Online Energy Marketplace

Program Category	**Clean Energy Technologies – Residential Programs** **Direct Consumer Purchases**
Description	Hawai'i Energy will continue to offer customers pre-incentivized energy saving measures through its online store, called "Energy Marketplace", in which customers can purchase individual measures (**LEDs, advanced power strips, water conservation devices, etc.**) depending on their needs. Combined with promotional "kits" offered through temporary campaigns throughout each program year, Hawai'i Energy's online offerings provide customers a quick, easy way to access quality energy efficiency measures at a reduced price. In addition to our current selection of offerings, Hawai'i Energy will also seek to expand to grid-interactive measures, as available.
Target Audience	Residents – single family and multifamily dwellings Manufacturers, Distributors, Dealers and Retailers
Barriers & Risk	• Lack of understanding about how energy is used in the home • Lack of understanding as to which technology is the most appropriate for home • Shipping costs to Hawai'i reduce cost-effectiveness of promotions
Implementation Strategy	The online store presents an additional delivery mechanism to ensure that Hawai'i Energy's programs reach a diverse set of customers. With many customers favoring online commerce over brick-and- mortar stores, Hawai'i Energy's online presence plays an increasingly important role in program awareness, participation and new technology adoption. Other measures, such as smart thermostats, grid-interactive water heating controls, or occupancy sensors may be introduced to the Energy Marketplace.
Cost	Total Direct Incentives Budget for PY22-24**: $318,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **388,500** Total 1st Year Peak Demand Savings (kW) for PY22-24: **56**

RESIDENTIAL PROGRAM

Retail Clean Energy Products

Program Category	**Clean Energy Technologies – Residential Programs** **Direct Consumer Purchases**
Description	This program provides prescriptive incentives to residential customers who purchase and install energy efficiency measures that meet or exceed ENERGY STAR® standards. The program objective is to increase the market for high efficiency appliances, electronics and residential equipment, as well as to reduce use of inefficient refrigerators, freezers and room air conditioners. The Retail Clean Energy Products program continues to evolve similarly to the ENERGY STAR Retail Products Platform (ESRPP), a collaborative midstream initiative of ENERGY STAR, energy efficiency program sponsors, retailer partners, and other key stakeholders, facilitated by the U.S. Environmental Protection Agency. In the long term, these efforts are expected to offer a gateway for energy efficiency programs to capture energy savings in the growing "miscellaneous/plug load" product categories at a significantly lower cost than current programs incur. Incentive dollars are used to influence product placement and signage or applied to instant rebates to customers, depending on the retailer's program preference. **Customer Mail-in Rebates:** • Refrigerators • Garage Refrigerator / Freezer Recycle Only • Refrigerator (with recycling of old) • Pool VFD-Controlled Pumps **Midstream Incentives:** • Televisions • Sound Bars • Clothes Washers • Clothes Dryers • Air Purifiers • Dehumidifiers • Heat Pumps • Window Air Conditioners • Smart Thermostats • Occupancy Controls, Sensors & Timers
Target Audience	• Residents – single family and multifamily dwellings • Manufacturers, Distributors, Dealers and Retailers

Barriers & Risk	• Lack of understanding about how energy is used in the home • Lack of understanding as to which technology is the most appropriate for home
Implementation Strategy	Hawai'i Energy partners with multiple retailers across the islands, including local stores unique to each island and national big box retailers. Some products will continue to be offered as a mail-in (downstream) rebate, while others will be incorporated into a midstream arrangement. The delivery strategy includes: The customer purchases a qualified high efficiency appliance. For Refrigerator with Recycling, the customer may apply online or obtains an application through the Program's website, hard copy from Hawai'i Energy, or through point of sale retailer displays. For Hawai'i Energy's "Rid-A-Fridge" program, Hawai'i Energy coordinates the pick-up of refrigerators and freezers through local recycling companies, distributing incentives to both the customer and the recycler. For a high efficiency window AC purchase, the customer will receive an instant rebate at the point-of-sale that is immediately deducted from the price. No application or mail-in rebate is required. For some products including high efficiency clothes washers and dryers, electronics including televisions and sound bars, smart thermostats, as well as air purifiers and dehumidifiers, Hawai'i Energy offers midstream incentives to encourage retailers to stock and sell only the most efficient models on their floors. Moving rebates upstream streamlines the rebate process and helps reduce supply barriers in a market restricted by distributer and retailer stocking decisions.
Cost	Total Direct Incentives Budget for PY22-24: **$3,443,700**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **13,067,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **1,567**

RESIDENTIAL PROGRAM

High Efficiency Water Heating

Program Category	**Clean Energy Technologies – Residential Programs** **CEA Enhanced Offerings**
Description	Hawai'i Energy's Clean Energy Allies (CEA) help drive participation in resource acquisition programs and amplify the connection of the Program with the customer. The residential clean energy ally network has had an established mature, long-lasting relationship with the solar contractor industry for the past decade. Hawai'i Energy intends to build a similar network of contractors for HPWH installs, offering a comprehensive water heating approach that reduces energy use and contributes to grid services by viewing the water heater tank as a thermal storage battery. We intend to introduce a HPWH tune-up program, as well as continue with our support of Grid Interactive Electric Water Heater program with the utility. Heat Pump Water Heaters • Heat Pump Water Heater (HPWH) • Grid interactive Heat Pump Water Heaters (*see Demand Response*) • Heat Pump Water Heater Tune-up Solar Water Heaters • Solar Water Heater (SWH) • PV Direct Water Heater • Solar Water Heater Interest Buy Down • Solar Water Heater Tune-Up Grid Interactive Electric Water Heaters (*see Demand Response*)
Target Audience	• Residents – single family and multifamily dwellings • Clean Energy Allies, Manufacturers and Distributors
Barriers & Risk	**Solar Water Heating** • Large up-front cost • Strong demand for PV • Supply-chain inventory issues / inflation **Heat Pump Water Heating** • Trust and credibility of technology • Low awareness of cost-effective HPWHs • Supply-chain inventory issues / inflation • Small network of Clean Energy Ally Installers • Technology limitations – i.e. small spaces in Hawai'i don't always allow for HPWHs to be installed, etc.

	• Operational knowledge and maintenances of technologies
Implementation Strategy	**Heat Pump Water Heaters** *Installations* Hawai'i Energy will continue to accelerate heat pump water heater (HPWH) adoption with increased incentives and added bonuses for controls. HPWH rebates are offered as an instant rebate for the customer at the point-of-sale at select retailers, no application required. Hawai'i Energy will continue this program, while simultaneously offering contractors and / or distributors an additional bonus to increase market adoption. *Tune-Up* In year PY23, Hawai'i Energy will introduce the Heat Pump Water Heater Tune-Up program, providing an incentive to residential customers for the maintenance and tune up of an existing heat pump water heater by participating contractors. The program aims to demonstrate the benefits of tune-ups, educate customers of potential savings and system longevity. Like the system installations, tune-ups will be subject to random inspections for quality assurance. *Grid interactive Heat Pump Water Heaters* see *Demand Response Ready in Energy Optimization Initiatives* **Solar Water Heating** *Solar Water Heater (SWH) & PV Direct Water Heater System Installations* The Program provides a rebate for Solar & PV hot water systems installed by qualified participating contractors. Contractors will provide an instant rebate to the customer at the point of sale, and submit an application directly to Hawai'i Energy for reimbursement. A portion of post-installation inspections is conducted to ensure specification compliance. *Solar Water Heater Interest Buy Down* The Program works with participating lending institutions to provide an incentive to buy down the interest charges for loans made on solar hot water systems that are installed by qualified participating contractors. The customer works with a participating contractor to complete the standard installation process. *Solar Water Heater Tune-Up* The Solar Water Heater Tune-Up program provides an incentive to residential customers for the maintenance and tune up of an existing solar water heater by participating contractors. The program aims to demonstrate the benefits of tune-ups, educate customers of potential savings and system longevity. Like the system installations, tune-ups will be subject to random inspections for quality assurance. **Grid Interactive Electric Water Heaters** see *Demand Response*
Cost	Total Direct Incentives Budget for PY22-24: **$5,946,250**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **9,020,400** Total 1st Year Peak Demand Savings (kW) for PY22-24: **1,325**

RESIDENTIAL PROGRAM

Household Air Conditioning

Program Category	**Clean Energy Technologies – Residential Programs** **CEA Enhanced Offerings**
Description	The residential clean energy ally program has embraced residential HVAC contractors as programs have evolved to drive further market adoption. We will continue to build relationships with manufacturers, distributors and dealers by offering workshop and events to train Allies on Hawaii Energy's offerings and processes while seeking input on how to create additional offerings and refinements to existing programs. We will also use industry working groups as a resource to identify appropriate efficiency standards, such as ACEEE, ASHRAE and ENERGY STAR when qualifying technologies to be incentivized. **Fans** • Solar Attic Fans • Whole House Fans **Window AC *(see Midstream)*** **VRF Split System AC** • VRF Split System • Residential AC Tune-Up **Central Air Conditioner** • Central AC Retrofit • Residential AC Tune-Up
Target Audience	• Residents – single family and multifamily dwellings • Clean Energy Allies, Manufacturers and Distributors
Barriers & Risk	• Large up-front cost • Trust and credibility of technology providers • Quality of system design, equipment and installation • Operational knowledge and maintenances of technologies • Supply chain issues & inventory shortages
Implementation Strategy	**Whole House and Solar Attic Fans** As an alternative to HVAC, Hawai'i Energy offers incentives for passive cooling with fans, either whole house or solar attic fans. We will continue our work with our Allies to make this option available to customers and reduce active HVAC loads where feasible. **HVAC Retrofits – Central AC and VRF** Hawai'i Energy will continue its air conditioning retrofit offering, which will incentivize

	the retrofit of an old, inefficient central AC or VRF unit with a new, higher model SEER rating. As with other Clean Energy Ally provided measures, a portion of Hawai'i Energy's tune up and retrofit rebates will be subject to inspection for the purpose of quality assurance. **Residential AC Tune Up** This measure includes the completion of a multipoint checklist on both indoor and outdoor units for central and split air conditioners. Hawai'i Energy works directly with contractors to ensure program awareness and quality assurance.
Cost	Total Direct Incentives Budget for PY22-24: **$3,491,850**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **20,933,300** Total 1st Year Peak Demand Savings (kW) for PY22-24: **1,545**

RESIDENTIAL PROGRAM

Whole Home Retrofits

Program Category	**Clean Energy Technologies – Residential Programs** **CEA Enhanced Offerings**
Description	The program will take a comprehensive approach to residential energy efficiency by assisting customers in understanding home energy use, identifying areas to increase energy performance, improving health & comfort, and lowering utility bills. The program will provide home audit services with customized recommendations to deliver whole-house solutions. **Whole Home Energy Assessment** • Audit Services **Whole Home Retrofits** • Appliance, electronics, and equipment upgrades • Tune-up services for HVAC and solar water heating equipment • Building systems and envelope recommendations • Emerging technology deployments • Direct Install measures: LED light bulbs, faucet aerators, showerheads, advanced power strips **Emerging Technologies** • Home Energy Monitors
Target Audience	• Residents – single family • Clean Energy Allies
Barriers & Risk	• Lack of understanding about how energy is used in the home • Lack of understanding as to which technology is the most appropriate for home • Quality of system design, equipment and installation • Trust and credibility of providers • Operational knowledge and maintenances of technologies
Implementation Strategy	Utilizing internal resources and our CEAs, Hawai'i Energy will guide the process for the customer to implement energy retrofits and other improvements, such as installation of energy-efficient products, appliance and equipment replacements, building envelope upgrades, and grid services, as appropriate. A step-wise process will be developed to establish service relationships, create certification programs, and provide third-party verification of CEA performance.
Cost	Total Direct Incentives Budget for PY22-24: **$797,544**
Benefits	Energy and demand savings are claimed under the associated program for the measures implemented.

RESIDENTIAL PROGRAM

Residential New Construction & Retrofits

Program Category	**Clean Energy Technologies – Residential Programs** **CEA Enhanced Offerings**
Description	The Residential New Construction program incentivizes builders, architects, and/or developers to exceed code compliance and prioritize energy efficient design and whole house energy performance in the construction of new housing. Engineering design support will be offered to incorporate EV charging, connected appliance and energy storage, where applicable. **New Construction Measures** • Lighting • HVAC • Appliances • Building Envelope • Energy Storage • Connected Devices / Appliances • EV Chargers
Target Audience	• Developers - single family and multifamily • Architects and engineers • Clean Energy Allies
Barriers & Risk	• Lack of understanding about how energy is used in the home • Lack of understanding as to which technology is the most appropriate for home • Quality of system design, equipment and installation • Trust and credibility of providers • Operational knowledge and maintenances of technologies
Implementation Strategy	Utilizing internal resources and our CEAs, Hawai'i Energy will guide the process for the customer to implement energy retrofits and other improvements, such as installation of energy-efficient products, appliance and equipment replacements, building envelope upgrades, and grid services, as appropriate. A step-wise process will be developed to establish service relationships, create certification programs, and provide third-party verification of CEA performance.
Cost	Total Direct Incentives Budget for PY22-24: **$285,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **676,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **64**

CLEAN ENERGY TECHNOLOGIES & ENERGY OPTIMIZATION

ENERGY OPTIMIZATION INITIATIVES – Business Program

ENERGY OPTIMIZATION INITIATIVES – Business Programs

Demand Response Ready

Program Category	**Clean Energy Technologies – Business Programs** **Energy Optimization Initiatives** *Demand Response Ready*
Description	**Guest Room Energy Management Systems** Guest room energy management systems use sensors to adjust the air conditioning in a room when guests are away, effectively saving energy and reducing load. Hotel guest rooms operate at 100 percent coincidence with the utility peak, making them an ideal target for peak demand reduction and demand response. They are also relatively lower cost when compared to other HVAC measures so Hawai'i Energy incentives have a significant impact on buying power. With over 30,000 hotel rooms in Waikiki alone, this program remains a key focus. **Smart Devices** The Smart Device program promotes the installation of smart building controls that optimize HVAC and refrigeration for energy efficiency and peak demand reduction at small and medium businesses. These installations provide data analytics on both energy efficiency savings and potential demand response capacity. GridPoint estimates their small and medium commercial buildings can provide between 4kW and 50kW of on-demand capacity per site for up to four-hour long curtailment events.
Target Audience	• Hotels • Small and medium businesses with air conditioning or refrigeration load such as restaurants, convenience stores, grocery, and retail
Barriers & Risk	• Complexity and confusion in demand response programs • Customer confusion over who is responsible for demand response and energy efficiency programs • Lack of awareness and understanding of the existing programs, cost to participate, and/or savings potential
Implementation Strategy	Hawai'i Energy will continue to refine equipment requirements to ensure smart devices and guest room controls are best suited to enroll into future demand response programs. One of the vendors for a PY20 hotel guest room controls incentive project has already initiated conversations to explore a connection with the utility. We will continue to monitor the results of this effort and incorporate lessons learned for future projects. We are currently working with the Hawaiian Electric Customer Energy Resources (CER) team to provide the data from installed smart devices and further explore how they might fit into a future emergency demand response program. We plan to scale these efforts (with GridPoint and other vendors) to maximize energy savings and support these customers' participation in emergency demand response programs as they become available.

	Key collaborators on demand response include: • Hawaiian Electric Companies • Demand response aggregators • Smart device vendors • Installation contractors
Cost	Total Direct Incentives Budget for PY22-24: **$960,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **1,058,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **441**

ENERGY OPTIMIZATION INITIATIVES – Business Programs

Customer-Sited Energy Storage Systems

Program Category	**Clean Energy Technologies – Business Programs** **Energy Optimization Initiatives** *Customer-Sited Energy Storage Systems ("Power Move")*
Description	Energy storage is becoming a vital way to integrating renewable energy into our island grid. Of the various storage technologies, battery storage can be used to provide a variety of services at the bulk system, transmission, and distribution as well as behind the meter. Some of the customer benefits include emergency back-up, utility load peak shaving and capturing excess PV generation for on-site use or grid export. Hawai'i Energy began exploring incentive program design for customer sited energy storage at the initiation of the PY19-21 Triennial plan in recognition of the many benefits distributed deployment can bring for both customers and the grid. The *Commercial Energy Storage* program under *Power Move* launched in February 2022 to support enrollment in HECO's Battery Bonus program by incentivizing commercial battery storage installations on Oahu to reduce load during evening peak (5-9pm) with enhanced incentives for load reduction between 6-8:30pm.
Target Audience	Commercial energy storage will be projects installed at facilities with commercial rate schedules (i.e. 'G', 'J' 'P', etc.),
Barriers & Risk	Cost, although batteries have come down in price, remains cost prohibitive (long payback period) based on existing rate schedules and programs. Permitting delays.
Implementation Strategy	The main objectives of the program are: • Reduce utility peak demand (5-9pm) throughout the period of the AES coal plant retirement with specific priority for 6-8:30pm period. • Target commercial storage opportunities as commercial customers remain an underrepresented market in existing demand response programs while possessing significant load shifting potential. Some commercial customers already voluntarily reduce their peak when called upon by HECO, but for planning purposes ensuring and increasing load shift potential though storage is critical. • Utilize enhanced incentives to support commercial customer enrollment in HECO's Battery Bonus (and future phases - Bring Your Own Device programs) • Keep program design simple to deploy funds to accelerate projects and maximize peak load reduction. • Stack projects with additional energy efficiency upgrades wherever possible use data to inform long term energy planning
Cost	Total Direct Incentives Budget for PY22-24: **$3,050,000**

Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **--** Total 1st Year Peak Demand Savings (kW) for PY22-24: **7,107**

CLEAN ENERGY TECHNOLOGIES & ENERGY OPTIMIZATION

ENERGY OPTIMIZATION INITIATIVES – Residential Program

ENERGY OPTIMIZATION INITIATIVES – Residential Program

Demand Response Ready

Program Category	**Clean Energy Technologies – Residential Programs** **Energy Optimization Initiatives** *Demand Response Ready*
Description	Hawai'i Energy is committed to providing foundational incentives to promote grid service capable technologies that can be installed today, so that they are advanced enough to adapt to future utility programs and optimize customer savings while minimizing negative impact to the grid. It is important that programs help prepare customers for future programs offered by the utility, particularly when customers are making purchasing decisions on equipment with a long lifetime that can run 10 to 20 years. The Program has developed targeted initiatives to increase the penetration of **water heating controls and smart devices** to provide customer benefits and support grid services.
Target Audience	• Residents – single family and multifamily dwellings • Residents in geographies with specific grid needs • Clean Energy Allies
Barriers & Risk	• Limited penetration of controlled technologies in households • Lack of interval data • Lack of understanding as to which technology is the most appropriate for home
Implementation Strategy	**Grid-Interactive Water Heaters:** Hawai'i Energy will continue to support targeted grid-interactive water heaters installations through Hawaiian Electric's Grid Service Purchase Agreement (GSPA). The overall water heating strategy will be implemented in collaboration with utility demand response initiatives and aggregators to ensure alignment with grid service objectives. **Heat Pump Water Heaters (HPWH):** Utilizing local partnerships, Hawai'i Energy will continue to drive adoption of heat pump water with load controls to help scale demand side management programs. After identifying qualified customers in our HTR communities, Hawai'i Energy will fully-fund the install of HPWHs with CTA-2045 Controllers added on. This controller will not only help with load reduction, load build, and emergency demand response, but also help with leak detection, thermostat/element failure, and identify degradations in local power quality.
Cost	Total Direct Incentives Budget for PY22-24: **$1,187,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **234,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **35**

ENERGY OPTIMIZATION INITIATIVES – Residential Program

Customer-Sited Energy Storage

Program Category	**Clean Energy Technologies – Residential Programs** **Energy Optimization Initiatives** *Customer-Sited Energy Storage*
Description	Energy storage penetration in the residential sector has increased dramatically over the last five years with over 90% of PV systems currently being installed with battery attachments. Residential storage is also a main focus area for HECO's Battery Bonus scheduled dispatch program. While single family residents continue to see increased penetration, the same cannot be said for residents in townhomes. This is largely due to difficulty with the permitting process. Hawai'i Energy will explore opportunities to pilot a battery storage rebate specifically for townhome residents to help offset the additional cost burden incurred through the permitting process. The hope is that it will further adoption and provide more access to otherwise underserved residents. With geographic, social equity and resilience aspects in mind, these incentives will be designed to align customer and grid benefits.
Target Audience	• Residents – Town Homes and multifamily dwellings • Residents in geographies with specific grid needs • Clean Energy Allies
Barriers & Risk	• Cost • Permitting and interconnection delays
Implementation Strategy	Pilot programs will reference battery incentive programs in operation in other jurisdictions, including: Massachusetts, Sacramento Municipal Utility District (SMUD), California Self-Generation Incentive Program, and NV Energy.
Cost	Total Direct Incentives Budget for PY22-24: **$150,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **--** Total 1st Year Peak Demand Savings (kW) for PY22-24: **--**

ACCESSIBILITY AND AFFORDABILITY

BUSINESS PROGRAM

BUSINESS PROGRAM

Energy Advantage

Program Category	**Small & Medium-Sized Businesses -** *Energy Advantage program*
Description	Small to medium size businesses make up a large percentage of any utility's customer base, and the same is true in Hawai'i. According to a study by PG&E in 2016, small customers dominated the office, retail, and restaurant sectors. Moreover, the American Council for and Energy-Efficient Economy, states that small-to-medium commercial customers represent 90% of US businesses and consume about 20% of US energy. The Energy Advantage program is designed to address some of the key barriers to small business participation by providing the following: • A simplified offering through direct installation of energy efficient equipment (LED Lighting, potential expansion to HVAC and/or other upgrades); • Enhanced rebates from traditional commercial program offerings to improve the ROI; • Development of specific contractor base that understands the target customers and effectively markets to this group; • Recruitment of contractors that can market to specific cultures in their native language; • Significant reduction in upfront capital required by the customer as their cost to the contractor is net of the rebate. In some cases, the contractor will spread that upfront capital amount over several months to address this barrier; and • Ongoing training from Hawai'i Energy to help these contractors communicate the value of energy efficiency to key decision makers in a way that addresses their pain points and priorities.
Target Audience	The Energy Advantage program targets the following customer base: • Schedule G – 47,000+ small commercial rate schedule customers (defined by the Hawaiian Electric Companies) • Master-metered small businesses less than 5,000 sq. ft. • Restaurant customers under any rate schedule • Common areas for multifamily hard-to-reach properties • Organizations that serve Hawai'i's hard-to-reach communities **Restaurants** This sector has a low participation rate, low saturation of high efficiency equipment and high potential for energy savings. The Small Business Direct Installation (SBDI) method has shown to be effective to get attention and participation with the ability to then gather information on the restaurant equipment and operations that can lead to greater energy savings through other programs such as the ENERGY STAR® Kitchen equipment program.

	Landlords The landlord/tenant relationship provides challenges to making energy efficiency capital investments in properties and operations such as air conditioning and lighting upgrades. This funding is to create a program that works with landlords that are taking tax credits. This program will be targeted to provide landlords of small business schedule "G" customers with comprehensive audit, RFP and other support for energy saving projects that will drive down the energy cost of their tenants. **Multifamily Hard-To-Reach** Common areas for multifamily hard-to-reach properties have historically low participation in traditional rebate programs. This sector was added to the Energy Advantage portfolio in PY18 to aid in alleviating financial and organizational barriers that may exist. In addition, opportunities in some multifamily facilities will overlap with the residential Energy Smart 4 Homes program (ES4H), providing a unified residential and commercial offering to a single facility. **Organizations Serving Hard-To-Reach Communities** The Energy Advantage program is also designed to be flexible as needed to qualify projects for the program for organizations that do not necessarily meet the standard program requirements, but can demonstrate their ongoing mission to serve Hawai'i's hard-to-reach communities.
Barriers & Risks	• Lack of time and/or expertise to engage in areas not directly related to their core business • Split-incentives between tenant and landlord make it difficult to motivate customers to implement energy efficiency projects • Multiple levels of decision makers (landlords, property managers, resident managers etc.) delay project progress • Projects often have a longer Return on Investment (ROI) due to shorter operating hours • Lack of access to capital - Customers lack capital for energy efficiency investments and often prioritize non-energy projects or energy projects with shorter term paybacks over more comprehensive upgrades
Implementation Strategy	**<u>Required Infrastructure</u>** **Staffing** • Business Team – Energy Advantage processes, contractor management • Marketing & Communications – lead generation, website design/development/maintenance, collateral, audio/visual support **IT Systems** The Energy Advantage program in PY21 fully transitioned its two systems – AMPLIFY and Salesforce – into one: Salesforce. Further updates and improvements will be necessary going forward to allow continued improvement of the user experience for both Hawai'i Energy staff and Energy Advantage contractors, as well as continued streamlining of the project creating and rebate process. IT staffing and additional funding is required for expanded functionality in Salesforce, i.e.

	additional energy efficiency measures (HVAC), integrated control systems, streamlining rebate application process, and maintenance of current functionality. **Third-Party Contractors** Clean Energy Allies – Energy Advantage approved Participating Contractors **Application Process** Maintenance of Energy Advantage documents (application, commitment letter, etc.)
Cost	Total Direct Incentives Budget for PY22-24: **$7,900,500**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **16,426,000** Total 1st Year Peak Demand Savings (kW) for PY22-24: **2,293**

BUSINESS PROGRAM

EmPOWER Grant

Program Category	*EmPOWER Grant*
Description	Hawai‘i small businesses, not-for-profits, and restaurants often face a unique set of challenges in implementing energy efficiency projects, including a lack of capital, staffing, and technical expertise. These hurdles were only underscored even more during the height of the COVID-19 pandemic, and those effects will likely continue to be felt going forward in the next few years to come. The EmPOWER Grant program seeks to address some of those challenges and make it as easy as possible for qualifying Hawai‘i small businesses, not-for-profits, and restaurants to participate in energy efficiency. The EmPOWER Grant program aims specifically to help qualifying Hawai‘i businesses implement energy efficiency projects at their facilities that will cut back on energy use, increase resiliency, and ultimately, reduce their operating costs. A competitive application and review process ensures that program funds are allocated to the projects that will have the most impact on the hard-to-reach communities which the Accessibility & Affordability programs target, and to organizations who demonstrate they are most likely to be able to see an awarded project through to completion. By combining any awarded grant with the appropriate standard existing rebate for the project specific equipment, the EmPOWER Grant program is able to greatly reduce – if not eliminate entirely – the cost of project implementation for the grant recipient. From start to finish, the EmPOWER Grant program provides grantees with comprehensive assistance (and funding) to maximize the chances of projects actually being implemented. Namely, this assistance includes access to Hawai‘i Energy’s EmPOWER Grant program staff – each project is assigned to a dedicated Hawai‘i Energy advisor – to support with planning, communications (including assistance with interacting with vendors and contractors), and other project feedback. **Key Offer Components:** • Assistance with developing a Request For Proposal for services • Pairing participants with local contractors (Clean Energy Ally network) • Eligible project costs that can be covered by a grant include, but are not limited to: qualifying new energy efficient equipment, parts & materials, shipping, labor, and taxes.
Target Audience	• Hawai‘i-based small businesses that: • Possess tax-exempt, 501(c)(3) status; • Are a small business with an electric rate Schedule “G”; • Are a small business with a less than 5,000 sq. ft. facility; and/or • Are a restaurant
Barriers & Risks	• Limited budgets for upfront costs • Grants (and any accompanying rebates) are distributed as a reimbursement after projects are completed

	• Lack of "bandwidth" for applicants to dedicate the time required to put together a complete grant application, find a Clean Energy Ally contractor, and meet the application deadline • Lack of awareness about the EmPOWER Grant program's existence and availability paired with a limited window for applications • Lack of customer technical expertise
Implementation Strategy	**<u>Required Infrastructure</u>** **Staffing** • Business Team – project & contractor management • Marketing & Communications – program launch outreach, website design/development/maintenance, collateral, audio/visual support **IT** Salesforce updates & support **Third-Party Contractors** CEAs are needed to bid for and implement projects **Application Process** Maintenance of application, selection rubric, staffing to select grantees **<u>Scale</u>** • Several options for scaling outlined below: • Increase number of participating organizations (grow steadily over 3 years) • Maintain relatively steady budget and planned participation over 3 years • Consider program design changes (i.e. expanding eligible equipment types) on a year-to-year basis. All options dependent on staffing and budget.
Potential Partners	• Clean Energy Allies • Additional funding partners • Nonprofit "hubs" (membership) • Hawai'I Association of Nonprofit Organizations (HANO) • Aloha United Way (AUW) • Hawai'I Community Foundation • Media Partners (TV, Radio, Print, News)
Reference Programs	• Grant funding and post-reporting is typical of other nonprofit program structures • Energy Outreach Colorado: Nonprofit Energy Efficiency Program (NEEP) https://www.energyoutreach.org/programs-for-organizations/non-profit-energy-efficiency/ ○ Project management, energy audits, management of contractor quotes, navigation of rebates/funding sources, energy conservation education,

	equipment replacement (lighting, insulation, HVAC, low-flow fixtures, etc.) Nonprofit Programs: • EmPOWER Maryland: BGE Smart Energy Savers Program https://bgesmartenergy.com/business/business-sectors/nonprofit • Lighting retrofits, personal occupancy sensors and power strips, HVAC equipment, building tune-up services on existing HVAC and controls • Community Foundation for Greater Atlanta: Grants to Green http://cfgreateratlanta.org/nonprofits/available-grants/grants-to-green/ • Funding for labor costs association with implementation, HVAC, water-efficient fixture replacement, lighting retrofits, building envelope improvements (air sealing, insulation), solar energy projects, new construction on a per case basis
Cost	Total Direct Incentives Budget for PY22-24: **$2,099,000**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **--** Total 1st Year Peak Demand Savings (kW) for PY22-24: **--**

ACCESSIBILITY AND AFFORDABILITY

RESIDENTIAL PROGRAM

RESIDENTIAL PROGRAM

Residential Community-Based Energy Efficiency

Program Category	Residential Community-Based Energy Efficiency
Description	The Community-Based Energy Efficiency (CBEE) program provides a holistic framework for residential communities to access bundled services of energy-saving opportunities, installation services, grid services, and access to program incentives with a turn-key delivery approach. The objective of CBEE is to increase adoption of energy efficiency solutions in hard-to-reach communities. **Community Collaboration Strategy** The foundation of CBEE will be the collaborative efforts reaching across public/private entities and community groups. The program will listen to and engage local organizations and agencies to evaluate the appropriate services, supply chain management logistics, and measures to implement in the community. In addition to energy savings opportunities, the program will deliver market transformation efforts in education, outreach, and workforce development to further define a community's needs through energy literacy events and enhanced engagement initiatives (refer to sections in *Economic Development & Market Transformation*). **Hard-to-Reach Housing Strategy** *Multifamily & Single Family Direct Installation Services* This program will expand the traditional multifamily-centric direct installations into more single family retrofit services. The program will continue turn-key installation of energy-saving technologies, such as high efficiency light bulbs, showerheads, faucet aerators and advanced power strips for energy management. Also, while providing the in-unit installations, a home energy audit will be completed to find additional energy savings and split incentive opportunities. This includes properties with individually-metered residential accounts and commercial master-metered accounts. The program will continue to work with trade ally (channel partners) to deliver the services. All measures will be installed with no customer co-pay. *Bulk Purchase* The program will enhance existing bulk purchase programs by increasing alignment with the replacement cycle of inefficient appliances. Hawai'i Energy will continue to offer bulk purchase of ENERGY STAR appliances (with trade-in and recycling) for refrigerators, efficient clothes washers, dryers, and air conditioners to hard-to-reach customers at a significantly reduced price to increase affordability for hard-to-reach customers. *Water Heating Direct Install* Water heating is typically largest residential load in Hawai'i households. Through audit services and CEA involvement, the program will identify and assess opportunities for solar thermal and heat pump water heaters, both centralized and in-unit systems, to afford significant energy savings and address potential market and technology barriers. **Data Services** Data may be collected on participant demographic to evaluate program impact, level of service, and design of custom programs. Metrics will be developed

	measuring energy and non-energy program benefits that best achieve desired outcomes for low-income and HTR customers. The data may also be utilized to inform systems mapping of the high-performing community action groups and service providers. **Participation & Incentive Strategy**: Participation and unit incentives are detailed in Appendix C.
Target Audience	**Low-income and hard-to-reach communities, typically the following:** • Households located within ALICE® (Asset-Limited, Income-Constrained, Employed) identified communities according to the United Way, which include those at or below poverty-level • Rural communities • Senior/elderly community (kupuna), military, transitional, and other underserved, vulnerable populations • Communities identified as hard-to-reach as determined by Hawai'i Energy's zip code attributions
Barriers & Risks	• Split incentives where tenants benefit from energy efficiency measures whose costs are born by the landlord • Lack of awareness of the financial and environmental benefits of energy efficiency among the LI/HTR communities • Lack of awareness of I Hawai'i Energy's services • Insular communities that are suspicious of external organizations and services • Competing needs for household and business time and budget (basic necessities) • Slow development of relationships with related community action organizations and with hard-to-reach residents and business

Implementation Strategy	**<u>Required Infrastructure</u>**
	
	Budget allocated will fund direct incentives and technical assistance for the following measures:
	
	• Multifamily & Single Family Direct Install
	• Tier I (master device) Advanced Power Strips
	• Water Efficiency Devices
	  ○ Bathroom Faucet Aerator
	  ○ Kitchen Faucet Aerator
	  ○ Low Flow Showerhead (Fixed)
	  ○ Low Flow Showerhead (Handheld)
	• LED
	  ○ A19
	  ○ B11 Candelabra
	  ○ G25 Globe
	  ○ Other Specialty Lamps, as appropriate
	• Project Direct Cost (Installation Cost & Site Visit Fee)

	Bulk-Purchased Appliances • Refrigerator (with recycling of old) • Freezers • Clothes Washers • Clothes Dryers • Window AC with Recycling • Air Purifiers • Dehumidifiers **Water Heating Direct Install** • Solar Water Heating • Heat Pump Water Heating **Home Energy Audit Services** **Market Transformation** • Community Energy Literacy Workshops • Youth Education Workshops • Enhanced Engagement efforts through surveys and gamification learning environments • Research/studies and strategic planning on low-income and hard-to-reach communities
Benefits / Projected Impact	Accounting for non-energy benefits (NEBs) allows for the full value of energy efficiency to be captured. The benefits accrues to the utility, energy efficiency project and its program participants, and to society at large. Regulators seek to ensure that energy efficiency programs are cost-effective and therefore compare the benefits of EE programs against the cost of delivering the programs. Examples of NEBs include: **To the utility:** • Reduced shut-offs/reconnections, carrying cost of arrearages, bad debt, collection costs, and ancillary services costs • Improved power quality and reliability • Lower transmission and distribution costs **To the program participants:** • Empowered control over electricity and water bill savings and energy decisions • Fewer shutoffs and reconnections • Improved indoor air quality, improved health, reduced absenteeism at work and school • Improved comfort • Improved property values, aesthetics and appearance • Lower operating and maintenance costs • Improved employee productivity and retention

	• Reduced tenant turnover **To society-at-large:** • Economic development benefits, e.g., stronger local economy, jobs creation, increased personal income and savings, and state GDP benefits • Preservation of affordable and low-income housing • Improved air quality, reduced healthcare costs • Environmental impact mitigation • Attract businesses in clean energy, efficiency sectors • Increased energy security • Increased partnerships, cross-collaboration, and mutual benefits among like-missioned organizations
Cost	Total Direct Incentives Budget for PY22-24: **$3,730,500**
Benefits	Total 1st Year Energy Savings (kWh) for PY22-24: **2,151,900** Total 1st Year Peak Demand Savings (kW) for PY22-24: **422**

TECHNICAL ASSISTANCE

TECHNICAL ASSISTANCE

Technical Support

Program Category	**Technical Support**
Description	Technical Assistance is customized work associated with the support of identified customers, communities, and/or organizations and includes a variety of services provided by Hawai'i Energy staff, subcontractors, and partners.
Target Audience	All customers and Clean Energy Allies seeking technical support in energy management and/or pursuing energy optimization for their facilities.
Implementation Strategy	Technical Assistance can include but is not limited to detailed customer billing analysis, treasure hunts, audit support, energy modeling, customized integration into programs, code compliance review, and grid services analysis.
Cost	Total Technical Assistance Budget for PY22-24: BUSINESS CET **$1,799,000** RESIDENTIAL CET: **$1,470,00** BUSINESS A&A **$440,000** RESIDENTIAL A&A: **$318,000** BUSINESS EOI: **$1,188,000** RESIDENTIAL EOI: **$862,000**
Benefits	The energy and demand savings are associated with the directly incentivized measures.

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

Outcome-Based Metrics

FOCUS AREA:	**Outcome-Based Metrics**
Description	As part of the August 20, 2020 Order No. 37272 – *Approving the Hawai'i Energy Program Revised Triennial Plan for Program Years 2019-2021* - the Hawai'i Public Utilities Commission highlighted the need to continue to work in collaboration with the Commission Staff, EEM team, and other entities to develop, improve and propose new metrics in both the EOI and MTED areas. After launching new commercial kitchen instant rebate program and refrigeration efficiency initiatives in PY21 and reporting on the proposed PY21 outcome metrics plan, Hawai'i Energy revisited the outcome metrics with further improvements given lessons learned during PY21 implementation. Hawai'i Energy has established the following two Market Transformation initiatives to focus on in accordance with the guidance from these ongoing discussions. • Commercial Kitchen Equipment Instant Rebate (Midstream) Program • Refrigeration Efficiency
Target Audiences	• Commercial kitchen equipment distributors • The refrigeration supply chain in Hawai'i, including manufacturers, manufacturer representatives, distributors, and contractors that develop, sell, and install efficient refrigeration equipment.
Barriers & Risks	Commercial Kitchen Equipment: • Insufficient data from distributors on their inventory and sales (of efficient equipment versus not efficient) • Limited number of equipment distributor companies servicing Hawai'i • Distributors' level or familiarity with Hawai'i Energy and efficiency rebates • Supply chain limitations and delays Refrigeration: • Continue market characterization efforts and outreach to key entities in this sector • Untapped market potential in this space, limited success in penetrating this sector in past program efforts • Lack of awareness of energy saving measures' impact, payback, and operational benefits • Discussing refrigeration efficiency is not yet a key part of the sales process for local distributors • Supply chain limitations and delays
Implementation Strategy	Commercial Kitchen: • Track distributor instant rebate claims and compare the data on

	• Meet with distributors quarterly, at minimum, to obtain feedback on program delivery, data collection, supply chain or market changes, marketing support needed, training desired, as well as impact of program rebates • After the program builds momentum towards identified objectives, Hawai'i Energy will assess program and market opportunities to incentivize refrigeration equipment utilizing natural or low Global Warming Potential (GWP) refrigerants. Refrigeration: • Continue market characterization efforts and outreach to key entities in this sector • Continue to hold free trainings on topics concerning refrigeration with the intention of increasing sales of efficient refrigeration equipment and educating contractors on new best in class techniques • Continue grocery energy efficiency assessment program • Include refrigeration projects as a key area of Energy Optimization planning efforts • Regularly engage with refrigeration supply chain professionals to understand potential changes their businesses may have in focusing on refrigeration efficiency • In the medium and longer term, recruit all area HVAC+R suppliers to CEA program
Key Partners	• Suppliers, manufacturers, manufacturers, manufacturer representatives, distributors, and contractors that develop, sell, and install efficient refrigeration equipment. • Trade and professional organizations (such as ASHRAE-Hawai'i) that represent industries identified as heavy users of these equipment types including: restaurants, grocery stores, food manufacturers, hotels, universities, hospitals
Costs	Direct incentives for projects that may result from commercial kitchen and refrigeration efforts are included under the relevant business program measure budgets.
Benefits	The energy and demand savings are associated with the directly incentivized measures.

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

Behavior Change

Focus Area	**Behavior Change (Clean Energy Literacy)**
Description	Behavior change programs build energy awareness and education for all residents to create lasting efficiencies and allow for a deeper understanding of energy efficiency and clean energy concepts. The program focuses on strengthening relationships & connections, and transformative messaging especially to hard-to-reach communities in low-income, underserved, vulnerable, and geographically isolated populations. Components and resources to support positive behavior change outcomes include workshops and presentations, science, technology, engineering, and mathematics (STEM) based student workshops and sponsorships, gamification campaigns and competitions, exhibit educational resources, sustained outreach, and behavioral insight interventions. **Workshops and Presentations** *STEM Based Youth and Student Workshops* Hawai'i Energy's investment in youth audiences is fundamental in building a knowledgeable, informed, and empathetic future generation. STEM education is a critical component in preparing the next generation of students with the knowledge and skills needed to solve complex programs and pursue STEM careers that will help Hawai'i achieve its energy efficiency and clean energy goals. Youth and student workshops equip youth-based organizations and students with the knowledge and tools to solve future energy issues. Additionally, Hawai'i Energy supports science, technology, engineering, and mathematics (STEM) events, conferences and forums for youth-based organizations and student groups. *Adult Learning* Teaching energy literacy to relieve the energy burden on underserved, hard-to-reach, and isolated communities is the core of the behavior change focus area. Hawai'i Energy's community workshops and presentations are designed to translate the often-confusing concepts behind energy usage and reduction to the average consumer. **Gamification Campaigns and Competitions** Gamification enhances engagement and creates multiple channels of communication between the customer and Hawai'i Energy. It also fosters interest in energy efficiency concepts and provides both digital and tactile-driven engagement. Gamification campaigns may immerse online participants in real-world scenarios requiring virtual behavior change or more traditional hands-on projects and activities to reduce energy use.

Target Audiences	**Communities needing increased support for Accessibility and Affordability:** • Income constrained households (e.g., Asset-Limited Income-Constrained Employed (ALICE), poverty-level, low income) • Neighbor island & rural communities • Senior/elderly community (kupuna) • Community action groups that reach homeless, transitional, and other underserved, underrepresented, vulnerable populations **Schools and Youth Organizations:** • Hawai'i Department of Education K-12 schools, charter schools, and independent schools • Youth service organizations
Barriers & Risks	• Time constraints and competing priorities to attend events/courses/workshops • Lack of awareness of the financial and environmental benefits of energy efficiency among the hard-to-reach communities • Lack of awareness of Hawai`i Energy's services • Insular communities suspicious of external organizations and services • Challenges in identifying and reaching community organizers and decision-makers • Slow development of relationships with related community action organizations and residents • Challenge in leveraging external funding sources
Implementation Strategies	**Workshops and Presentations** *Adult Learning* Community workshops and presentations are provided in a group setting and delivered using local facilitators and internal resources employing creative presentation styles to teach energy-saving habits in a fun, relatable manner. Ideal audiences include hard-to-reach communities, local community organizations, and employees of businesses. *STEM Based Youth and Student Workshops* Hawai'i Energy and program allies deliver STEM/STEAM workshops in public, charter, and independent schools for students and youth through energy efficiency presentations and workshops. These events are supplemented with continued student-led projects and hands-on activities, such as games, infographics, videos, and social media platforms. Additionally, Hawai'i Energy sponsors large STEM/STEAM based events across the state to promote and advance the importance of energy conservation and efficiency. **Gamification Campaigns and Competitions** Gamification efforts are implemented through digital platforms and face-to-face group interactive settings. Online learning environments, such as microsites, social media, and e-mail marketing platforms reinforce energy efficiency concepts and generate

	'sticky' behavior from campaigns and contests. Group gamification approaches engage adults and youth utilizing both digital and tactile methods to create a fun, participatory learning environment. These tools enable more productive interactions between facilitators and the audience and provide timely feedback on individual or collective progress towards a goal. The microsite was updated in 2022 to include a infographic on the energy system and grid, and the interrelationships between the elements. This will help with messaging around peak demand reduction and time of use.
Benefits / Projected Impact	For residents: • Increased awareness and knowledge of energy efficiency concepts • Increased customer participation in resource acquisition programs • Empowered decision-making in reducing utility bill expenses • Increased economic well-being • Increased Hawai'i Energy brand awareness and strengthened relationship with the customer • Reduced tenant turnover • Increased youth academic achievement and enrollment in STEM degrees Societal benefits: • Increased partnerships, cross-collaboration, and mutual benefits among like-missioned organizations • Economic development benefits, e.g., stronger local economy, jobs creation, increased personal income and savings, and state GDP benefits • Preservation of affordable and low-income housing • Improved air quality, comfort, and reduced healthcare costs • Environmental impact mitigation • Increased energy security and resiliency
Key Partners	• Nonprofits & community action groups • Community leaders • Program allies and subcontractors working on behalf of Hawai'i Energy • Public and private organizations • Educational institutions • Property managers • Retailer partners • Hawaiian Electric Companies • Clean energy allies
Costs	Total Transformational Incentives PY22-24: **$1,350,000**

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

Professional Development & Technical Training

FOCUS AREA:	Professional Development & Technical Training: **Clean Energy Ally (CEA) Program Support**
Program Description	The Clean Energy Ally (CEA) program supports and leverages architects, engineers, contractors, manufacturers, and distributors to increase program participation from both commercial and residential customers. Clean Energy Allies play an important role in helping residential, commercial and industrial customers to implement energy efficiency projects and leverage available Hawai'i Energy rebates and program offerings.
Target Audience	Current Clean Energy Ally network Energy professionals such as architects, engineers, contractors, manufacturers, and distributors who provide energy efficient goods & services Hawaiian Electric ratepayers
Barriers & Risks	Lack of knowledge regarding Hawaii Energy program Additional onboarding and documentation may deter potential allies from participating in program
Implementation Strategy	**<u>Required Infrastructure</u>** **Staffing** • Business Alliances Advisor to oversee CEA program development and program delivery • Program Support Specialist to provide CEA program support • Marketing & Communications to provide marketing collateral, audio, visual support • IT support for CEA portal design/development/maintenance • Business & Technical Team to provide advisory support **CEA Portal** • New CEA registration • Online orientation for new CEAs • Access to marketing material, incentive worksheets and application, co-op advertising and event application and technical training/professional development calendar **Recruit & Motivate Allies** • Recruit energy professionals to register for CEA program • Communication for program updates, upcoming events, and workshops received through monthly CEA newsletter and periodical Green Real Estate CEA newsletter

	• Expand program offerings & bonus/limited-time offers • Enhance CEA Portal and CEA Search portal to increase usability **Marketing & Event Support** • Guidelines and processes for Co-op Advertising and Co-Op Events for CEAs **Networking Opportunities** • Enhance Exhibitor and Sponsorship opportunities at annual Innovation Symposium hosted by Hawaii Energy • Host in-person informal networking events around green real estate trainings for area professionals **Ongoing project-specific advisory support** • Project/Sector-Specific consultation provided by Energy Advisors **Feedback & Acknowledgement** • Expand the Energy Insider Rewards offering to include additional benefits • Recognize top-performing CEAs at the Innovation Symposium
Benefits / Projected Impacts	• Steady stream of program applicants and increased involvement with Program. Allies are well-versed with Program. • CEAs serve as an extension of HE's incentive program and are technically competent regarding energy efficient equipment and practices • Increase lead generation and increase use of co-op advertising/event funding • CEAs view Hawaii Energy as trusted energy advisor • Customers choose to primarily hire allies with "CEA seal" (EIR benefit); increase CEA program participation
Key Partners	Trade organizations such as American Institute of Architects (AIA), U.S. Green Building Council (USGBC), Building Owners and Managers Association (BOMA), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), and Illuminating Engineering Society (IES), Honolulu Board of Realtors (HBR) and neighbor island realtor associations.
Costs	Total Transformational Incentives PY22-24: **$770,000**

FOCUS AREA:	Professional Development & Technical Training: **Clean Energy Ally and Targeted Participant Training**
Description	The foundation of an energy-independent Hawai'i will be dependent upon the skill set and knowledge of the workforce capacity in energy efficiency and conservation. To best support this, one of the main goals of the CEA program is to increase the base of qualified contractors and augment the skill sets to implement clean energy and energy efficiency projects, products and services through technical trainings and vendor presentations. This in turn will help Allies successfully educate and support their customers and improve their energy efficiency operations through energy-saving projects. On the participant side, professional development offerings also target those who are in positions of influence to affect energy decisions in homes and businesses. These include building operations and engineering staff, architects and designers, those entering or currently in the energy workforce, and teachers. The program offers technical trainings, workshops and certifications that advance knowledge of energy efficient technologies as well as provide valuable, portable professional credentials for participants. (Most trainings are attended by a mix of trade allies/contractors and energy professionals). This activity area also includes energy-industry workforce development, including supporting fellowship opportunities for young professionals to enter the field of clean energy. Hawai'i Energy will support architect and building contractor professional trainings and engineering support services to address market barriers for building compliance with county level adoption of IECC 2018. The Program will also co-sponsor trainings to County building departments and other officials to help with understanding and enforcement of the code. Finally, the Program looks to train licensed real estate professionals to increase their knowledge around sale, purchase and valuation of energy and resource-efficient homes. This will help facilitate the enhanced valuation of such properties through awareness of the hidden benefits to the homeowner over time.
Target Audiences	Trade allies who participate in the Clean Energy Ally program or are potential participants. Professionals in the energy efficiency field or with decision-making authority regarding capital improvements and home renovations including building operators, facility managers, engineers, architects, owners, real estate professionals.
Barriers & Risks	• Time and opportunity cost of attending training: Participants attending training during the workday or are giving up personal time (for weekend offerings). • Professional development and training costs and fees are an oft-cited barrier. Though the Program typically sponsors a majority of the training tuition, the co-pay may still be a barrier for small companies or sole proprietor/contractors.

	• Training delivery method may be a barrier for some participants- ie attending an in-person training may be preferable to some, but might represent a barrier for geographically remote locations. • Participants may not be aware of Hawaii Energy's offerings and their value to their staff and operations. • For emerging technologies and practices, participants may feel skeptical of the value of the training or feel that they will wait until the market demand is more established rather than be early adopters or innovators. • Contractor or participants' organization may not be supportive of continuing education or provide opportunities for advancement for those who seek certifications and credentials. • Real estate transaction and process is very time sensitive with competing priorities. Explaining the value of energy efficiency will take a solid knowledge base and sensitivity to client and market.
Implementation Strategy	**<u>Required Infrastructure</u>** • Application process and easy to use registration mechanism for courses • Means for participants to evaluate the course • Means of tracking if the information was implemented in the workplace. • Tracking of participants' names, email addresses and companies; adding participants to databases to inform them of future opportunities. • Ongoing survey and information gathering to assess needs and interests of trade allies and participants so that appropriate workshops and trainings can be designed. **<u>Key Targets for PY22-24</u>** • Continue expanding technical training offerings to Allies across our service areas and utilize technology to make delivery more convenient for geographically hard to reach customers. • Expand real estate trainings to cover all islands and help to create a network of realtors who are knowledgeable about how to implement energy upgrades and market efficient homes as well as appraisers who can accurately represent their value. • Foster a growing core group of industry professionals who look to Hawai'i Energy as the trusted source for professional development and keeping up to date with emerging technology
Benefits / Projected Impacts	• Increased participation (in participant hours) in workshops, certification courses, trainings. • Increased participation (in sectoral and position diversity) in workshops, certification courses, trainings.

	• Increased knowledge of energy efficient technologies and best practices or how to sell these efficient technologies • Increase in number of professionals who are knowledgeable and engaged around clean energy and sustainable facilities management • Career advancement and higher compensation for participants who seek continuing education and professional development.
Key Partners	• University of Hawai'i Mānoa (Outreach College) • University of Hawai'i Maui College (Sustainable Living Institute of Maui) • Hawai'i State Energy Office (State Department of Business, Economic Development, and Tourism) • Association of Energy Engineers (National) • Franklin Energy
Reference Programs	Midwest Energy Efficiency Alliance: http://www.mwalliance.org/initiatives/training-education/commercial-training Northwest Water and Energy Education Institute: https://www.nweei.org/professional-development/
Costs	Total Transformational Incentives PY22-24: **$700,000**

FOCUS AREA:	Professional Development & Technical Training: **Training and Grants – Workforce Development**
Description	The foundation of an energy-independent Hawai'i will be dependent upon the skill set and knowledge of the workforce capacity in energy efficiency and conservation. On the participant side, professional development offerings also target those who are in positions of influence to affect energy decisions in homes and businesses. Hawai'i Energy is collaborating with UH Mānoa Outreach college on a certificate program which will provide structure and a strong foundation for early career and established professionals in the energy field. While other online and in person certificates are available, Hawai'i's unique context: climate, energy infrastructure and building types make a localized offering with area subject experts more valuable.
Target Audiences	Undergraduates, graduate students in engineering, architecture, sustainability or business concentrations; working professionals who are facility managers, contractors, consultants, design professionals, government employees.
Barriers & Risks	Among jobs in the energy sector, energy efficiency jobs were especially vulnerable to the economic downturn experienced nationwide during COVID, and although no local statistics are available, it may be inferred that the workforce has likely declined or stagnated in the past two years. Careful planning is needed ensure that energy and sustainability are woven into the course requirements for a strong foundation.
Implementation Strategy	**<u>Required Infrastructure</u>** • Marketing and outreach to recruit majors into the certificate • Mentorship and internship opportunities • Means of tracking students' career progression and keeping them engaged with the Program when they enter the workforce • Tracking of participants' names, email addresses and companies; adding participants to databases to inform them of future opportunities. • Ongoing survey and information gathering to assess needs and interests of trade allies and participants so that appropriate workshops and trainings can be designed. **<u>Key Targets for PY22-24</u>** Finalize certificate structure i.e. requirements for earning; core course(s) and electives
Benefits / Projected Impacts	• Increase in number of professionals who are knowledgeable and engaged around clean energy and energy-efficient technology and practices. • Career advancement and higher compensation for participants who seek continuing education and professional development.

	• Portability of the certificate and no expiration date
Key Partners	University of Hawai'i – Mānoa Outreach College
Reference Programs	https://online.stanford.edu/programs/energy-innovation-and-emerging-technologies-program https://cepl.gatech.edu/cseem https://www.smc.edu/academics/areas-of-interest/stem/earth-sciences/sustainable-technologies/energy-efficiency.php https://www.eec.org.au/for-energy-efficiency-providers/training-certification/overview-11#/energy-efficiency-certification-scheme
Costs	Total Transformational Incentives PY22-24: **$150,000**

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

Codes & Standards

FOCUS AREA:	Codes & Standards

Program Description	**Building Code Advocacy and Adoption**
	Supporting the State Building Code Council, Hawai'i State Energy Office, County of Honolulu Office of Climate Change, Sustainability and Resiliency and County of Honolulu Department of Planning and Permitting in an ongoing effort speed code adoption cycle and engage stakeholders in the process for better reception and compliance. Main efforts will be directed to the state energy code which is currently based of the International Energy Conservation Code. Activities may include:
	• Promotion of next cycle of IECC or stretch code with partner organizations.
	• Education and outreach through events and workshops targeting design and planning community. Similar to training, industry opposition to rising costs is identified as barrier to adoption of stricter codes.
	Building Code Compliance Enhancement
	• Improve market compliance to energy code through strategic interventions, measured with pre & post energy code compliance studies with expert input. Components of which include:
	• Determining Baseline Compliance Level to energy code
	• Determining Enhanced Compliance Level to energy code
	• Estimate Energy Savings Due to Enhanced Compliance
	• Determine Savings Attributable to Compliance Enhancement Activities. Activities may include:
	  ○ Training for architecture, engineering & construction (AEC) design community
	  ○ Training for permit office plan reviewers
	  ○ Additional resources for plan review for energy code compliance
	  ○ Potential incentives for AEC design community to indicate methods of compliance
	• Collaborate with EM&V to identify and implement evaluation process
	Appliance Standards Adoption
	Collaboration with partner organizations such as Appliance Standards Awareness Project (ASAP) and stakeholders to educate and negotiate the most suitable appliance standards for the state.

Target Audiences	**Code Compliance Enhancement Activities:** The building design & construction community **Appliance Standards:** Appliance retailers

Barriers & Risks	• Raised upfront costs on new construction. • Perception of reduced customer choice for appliance standards • Lack of uniformity among counties and a uniform process across state and counties for adoption • Complexity of new code and the need to train staff accordingly. Loss of expertise as veteran plan reviewers retire; understaffed agencies. • Internal organizational processes that could slow down code adoption cycle in relevant agencies. • Unforeseen complications or delays in code adoption extends timeline and affects program and training design • County amendments may seek to alleviate stricter code provisions to be optional
Implementation	**<u>Required Infrastructure</u>** **Staffing:** Internal Staffing, time spent by external consultants for advice on code related-topics **Program Design:** Consider role of C&S in Program Resource Acquisition for clear tracking and reporting **Tracking and Reporting:** Create C&S savings tracking and reporting scheme within backend systems to match and support EEPS reporting and tracking **Third-Party Contractors:** Experts who can evaluate contribution of Hawai'i Energy to influencing adoption of new codes, raising compliance to new building code. (i.e. TAG) **<u>Key Targets for PY22-24</u>** Offer 100 hours of professional development training in partnership with State Energy Office and others. The program will continue to dedicate staff time and budget towards the awareness of energy codes by the public as well as efforts to increase compliance by easing barriers to compliance along with funding trainings for the IECC codes.Hawai'i Energy will expand our collaborative role with the State Energy Office and Blue Planet Foundation to increase code training, advocacy and engineering support for county and state level code and stretch code advancement. We will identify and enhance rebates for targeted equipment (e.g. multifamily electric vehicle chargers) to reduce barriers to future code changes. We will work with the EEM to deem code attribution savings in PY22 and beyond for past and ongoing investments. Hawai'i Energy will scale up commercial customer support in benchmarking their facilities using ENERGYSTAR® Portfolio Manager—the standard measurement and tracking tool—and conduct additional energy analysis to calculate a facilities energy use intensity (EUI). This is necessary to support compliance with the City and County of Honolulu's pending Bill 22 which will establish the City's Better Building Benchmarking Program.

	The Program will continue to advocate for the adoption of appliance standards which will play an important role in reaching EEPS in a very cost-effective manner. EM&V contractor to evaluate Codes and Standards program attribution of savings.
Benefits / Projected Impacts	**Code Compliance** • Code trainings will increase knowledge base among design professionals, improving compliance and acceptance by the industry for improved standard practices. • Attribution of savings for code compliance enhancement activities through formal or deemed attribution process. This would amount to a portion of savings that are outside savings lost to non-compliance, normal market adoption and new construction. **Appliance Standards** • Protect Hawai'i consumers from inefficient products • Protect renters from 'dumping'
Key Partners	**Code Compliance Enhancement Activities:** Departments of Planning and Permitting (DPP), Office of Climate Change, Sustainability and Resiliency (CCSR), State Energy Office (SEO), Blue Planet Foundation (BPF), External consultants (i.e. Kolderup Consulting, New Buildings Institute (NBI), Vermont Energy Investment Corporation (VEIC), etc.) **Appliance Standards:** Appliance Standards Awareness Project (ASAP), Blue Planet Foundation (BPF)
Reference Programs	DBEDT 2018 Code Compliance study
Cost	Total Transformation Budget for PY22-24: **$220,000**
Benefits	We will not be claiming any savings from our activities completed in PY22-24 – we estimate savings will occur in the PY25-27 cycle. Savings claimed in PY22-24 are the result of attribution from pre-PY19 activities.

MARKET TRANSFORMATION & ECONOMIC DEVELOPMENT

Clean Energy Solutions Innovation Hub

FOCUS AREA:	**Clean Energy Solutions Innovation Hub**
Program Description	As the electric industry is undergoing a fundamental transformation due to advances in technology, changing customer preferences, and market developments, technology and innovation continue to help drive this change. As the portfolio continues its transformation away from lighting, Hawai'i Energy seeks to accelerate the adoption of new energy-saving technologies. At a customer level, buildings are becoming smarter and more connected which can help address the increasing need for flexibility in energy demand. As the program also helps reduce GHG emissions from non-renewable generation sources, the rapid growth of distributed energy resources are helping to drive this market transformation and is a growing area for the Hawai'i Energy program. The Clean Energy Solutions Hub is the formalization of Hawai'i Energy's ongoing programmatic efforts to bring innovative projects and emerging technologies to customers in order to assess the potential for market adoption. Emerging technologies are new, energy-efficient technologies, systems, or practices with significant energy savings potential that have not yet, for a variety of reasons, achieved sufficient market share to be considered self-sustaining or commercially viable. Emerging technologies may include prototypes, pre-commercial or recently commercialized equipment, as well as software, design tools, or energy services. In our efforts to build a pipeline of innovative projects incorporating emerging technologies, we will continue our ongoing work with the Elemental Excelerator (EEx). This includes companies targeting increased equity and access, smart grid technology innovations, energy efficiency, demand response, and water and/or agricultural efficiency with energy savings. Our investment will take in various different forms, depending on the maturity of the company and/or technology. We could provide incentive funding for demonstration projects for customers or matching funds for investment into projects from accelerators. The intent of this funding is to be tied less to savings goals and tied more to market transformation to drive innovation as the program seeks solutions that can drive deeper energy savings.
Target Audiences	• Commercial and residential customers • Companies providing innovative customer side solutions • Technology accelerators
Barriers & Risks	• Customer concerns around installation of new technologies • Increased cost of new technology prior to commercialization • Increased risk on energy savings realization

	• Customer confusion and ability to evaluate new technologies • Publicly available information on true performance of technologies • Lack of trusted energy advisor (without Hawai'i Energy participation)
Implementation Strategy	**<u>Key Targets for PY22-24</u>** Hawai'i Energy will work on an annual basis with partners to build a project/company pipeline for projects. This includes exploration of companies meeting ideal innovation profile in categories of distributed energy resources, electrification of transportation, building efficiency and water efficiency/conservation. Hawai'i Energy will discuss emerging technologies being considered by customers and evaluate whether it warrants program investment to encourage evaluation and adoption. Elemental Excelerator's (EEx) support to the Program's A&A efforts is expected to continue into the next triennial period. EEx will leverage its resources and funding to support critical assistance to low-income households, small businesses and other hard-to-reach customer segments and help us understand how technology serves communities most vulnerable to climate change. **<u>Required Infrastructure</u>** • Partnerships • Metering, monitoring, and other data collection requirements to determine performance of new technologies installed • Engineering and R&D support • Increased collaboration • Place to share emerging technology reports/analysis
Benefits / Projected Impacts	• Formalized process for evaluating and integrating emerging technologies into program and portfolio • Network of global partners to support identification of new opportunities and share best practices • Partnerships to evaluate financial viability of proposals. • The multi-year collaboration framework is designed to provide Hawai'i Energy with 60 qualified startups that could make positive impact in Hawai'i.
Key Partners	• Elemental Excelerator • Hawaiian Electric • Ulupono Initiative • University of Hawai'i • Hawai'i based technology start-up accelerators • Hawai'i Natural Energy Institute

Reference Programs	Pilot work with Elemental Excelerator's portfolio companies. Northwest Energy Efficiency Alliance: https://neea.org/our-work/emerging-technologies VEIC: https://www.veic.org/what-we-do/our-expertise/emerging-technologies
Costs	Total Transformation Budget for PY22-24: **$330,000**

Hawai'i Energy

APPENDIX C

INCENTIVE BUDGET AND SAVINGS TABLES

MARKET TRANSFORMATION BUDGET

Triennial Plan

PY22-24
COMPONENT SUMMARY

Program Year 2022

	Budget	Program-lvl kW	Program-lvl kWh	Program-lvl Lifetime kWh	Total Resource Benefit
Business	**$ 17,847,069**	**13,251**	**59,461,825**	**872,342,012**	**$ 111,707,343**
BEEM	$ 4,366,311	4,955	24,502,071	387,904,145	$ 49,359,352
CBEEM	$ 4,935,703	2,911	26,901,196	376,115,928	$ 44,724,352
BESM	$ 1,029,215	144	1,044,353	7,881,766	$ 1,082,718
BGRID	$ 2,292,267	4,203	150,577	1,505,765	$ 4,274,981
BHTR	$ 4,154,841	1,038	6,863,630	98,934,407	$ 12,265,940
BTRAN	$ 1,068,732				
Residential	**$ 11,066,554**	**4,354**	**30,346,084**	**355,009,030**	**$ 44,214,323**
REEM	$ 5,246,440	1,969	16,108,177	235,637,371	$ 28,038,284
CREEM	$ 55,000	17	183,416	1,834,165	$ 228,879
RESM	$ 1,314,036	1,853	10,236,101	71,500,296	$ 10,280,335
RGRID	$ 146,984	-	-	-	$ -
RHTR	$ 3,191,678	515	3,818,390	46,037,199	$ 5,666,825
RTRAN	$ 1,112,416				
Grand Total	**$ 28,913,623**	**$ 17,605**	**$ 89,807,910**	**$ 1,227,351,042**	**$ 155,921,667**

Program Year 2023

	Budget	Program-lvl kW	Program-lvl kWh	Program-lvl Lifetime kWh	Total Resource Benefit
Business	**$ 16,383,369**	**9,943**	**57,985,880**	**848,109,033**	**$ 105,198,195**
BEEM	$ 3,944,311	4,208	22,098,200	352,092,071	$ 44,041,767
CBEEM	$ 5,045,501	3,010	27,737,999	386,994,368	$ 46,061,615
BESM	$ 1,062,399	132	985,660	7,587,425	$ 1,038,823
BGRID	$ 850,602	1,486	150,577	1,505,765	$ 1,627,322
BHTR	$ 4,411,824	1,107	7,013,443	99,929,404	$ 12,428,668
BTRAN	$ 1,068,732				
Residential	**$ 11,086,425**	**4,267**	**30,007,702**	**347,290,337**	**$ 43,231,757**
REEM	$ 5,068,745	1,846	15,567,882	225,369,821	$ 26,749,898
CREEM	$ 55,000	17	183,416	1,834,165	$ 228,879
RESM	$ 1,349,708	1,870	10,322,242	71,806,601	$ 10,328,053
RGRID	$ 148,207	-	-	-	$ -
RHTR	$ 3,352,349	533	3,934,161	48,279,751	$ 5,924,927
RTRAN	$ 1,112,416				
Grand Total	**$ 27,469,794**	**$ 14,210**	**$ 87,993,581**	**$ 1,195,399,370**	**$ 148,429,952**

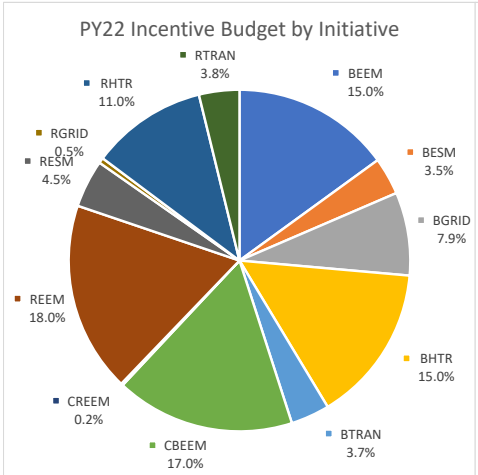
Program Year 2024

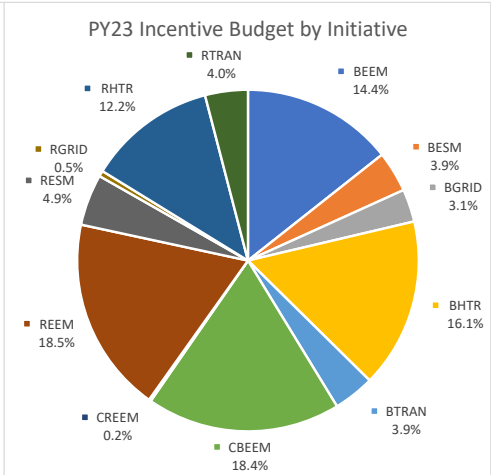
	Budget	Program-lvl kW	Program-lvl kWh	Program-lvl Lifetime kWh	Total Resource Benefit
Business	**$ 16,503,805**	**10,027**	**59,769,205**	**875,843,847**	**$ 108,076,042**
BEEM	$ 3,822,311	3,964	21,329,707	340,810,654	$ 42,345,298
CBEEM	$ 5,549,580	3,351	30,924,989	432,030,858	$ 51,411,578
BESM	$ 1,128,534	-	119,142	357,427	$ 42,716
BGRID	$ 478,115	1,486	150,577	1,505,765	$ 1,627,322
BHTR	$ 4,456,533	1,226	7,244,790	101,139,142	$ 12,649,128
BTRAN	$ 1,068,732				
Residential	**$ 11,001,007**	**4,499**	**33,483,228**	**391,536,046**	**$ 48,268,380**
REEM	$ 4,979,475	1,972	18,289,135	258,222,295	$ 30,402,401
CREEM	$ 55,000	17	183,416	1,834,165	$ 228,879
RESM	$ 1,360,149	1,867	10,300,810	70,636,357	$ 10,209,303
RGRID	$ 149,461	-	-	-	$ -
RHTR	$ 3,344,506	644	4,709,867	60,843,230	$ 7,427,797
RTRAN	$ 1,112,416				
Grand Total	**$ 27,504,812**	**$ 14,526**	**$ 93,252,434**	**$ 1,267,379,893**	**$ 156,344,422**

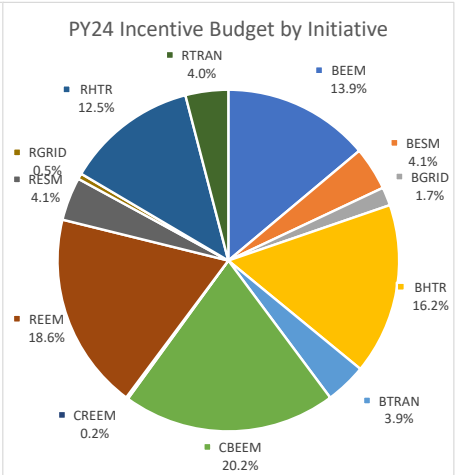
PY22-24
BUDGET BY CATEGORIES

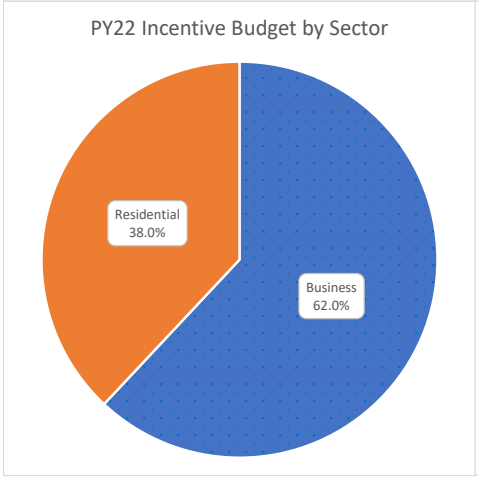
	2022			2023			2024		
	Budget Split	Avg $ / kWh (Program)	Avg $ / Lifetime kWh (Program)	Budget Split	Avg $ / kWh (Program)	Avg $ / Lifetime kWh (Program)	Budget Split	Avg $ / kWh (Program)	Avg $ / Lifetime kWh (Program)
Business	61.73%	$ 0.300	$ 0.020	59.64%	$ 0.283	$ 0.019	60.00%	$ 0.276	$ 0.019
Residential	38.27%	$ 0.365	$ 0.031	40.36%	$ 0.369	$ 0.032	40.00%	$ 0.329	$ 0.028
Overall	**100.00%**	**$ 0.322**	**$ 0.024**	**100.00%**	**$ 0.312**	**$ 0.023**	**100.00%**	**$ 0.295**	**$ 0.022**

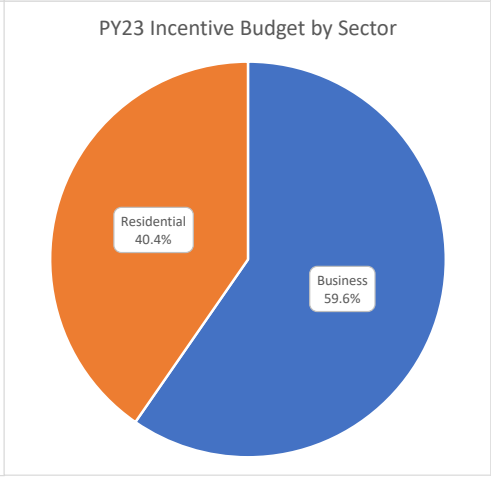
	2022			2023			2024		
	Budget Split	Avg $ / kWh (Customer)	Avg $ / Lifetime kWh (Customer)	Budget Split	Avg $ / kWh (Customer)	Avg $ / Lifetime kWh (Customer)	Budget Split	Avg $ / kWh (Customer)	Avg $ / Lifetime kWh (Customer)
Business	61.73%	$ 0.241	$ 0.016	59.64%	$ 0.227	$ 0.016	60.00%	$ 0.221	$ 0.015
Residential	38.27%	$ 0.308	$ 0.025	40.36%	$ 0.316	$ 0.026	40.00%	$ 0.286	$ 0.024
Overall	**100.00%**	**$ 0.263**	**$ 0.019**	**100.00%**	**$ 0.256**	**$ 0.018**	**100.00%**	**$ 0.243**	**$ 0.018**

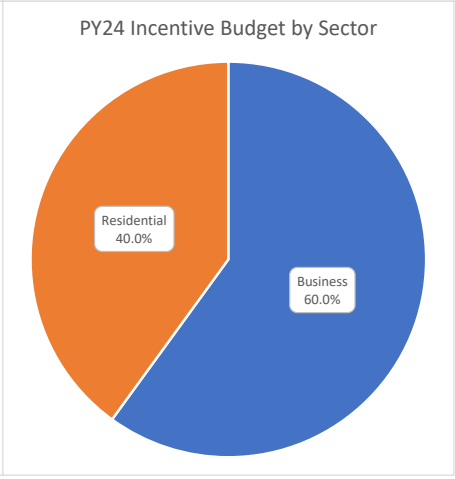












PY22-24
INITIATIVE BY EQUIPMENT GROUP

	2022					2023					2024				
	Budget	Program-level kW	Program-lvl kWh	Program-lvl Lifetime kWh	Total Resource Benefit	Budget	Program-level kW	Program-lvl kWh	Program-lvl Lifetime kWh	Total Resource Benefit	Budget	Program-level kW	Program-lvl kWh	Program-lvl Lifetime kWh	Total Resource Benefit
BEEM	**$ 4,366,311**	**4,955.1**	**24,502,071**	**387,904,145**	**$ 49,359,352**	**$ 3,944,311**	**4,208.0**	**22,098,200**	**352,092,071**	**$ 44,041,767**	**$ 3,822,311**	**3,964.2**	**21,329,707**	**340,810,654**	**$ 42,345,298**
Accounting	$ 154,370	-	-	-	$ -	$ 154,370	-	-	-	$ -	$ 154,370	-	-	-	$ -
Appliances	$ -	-	-	-	$ -	$ -	-	-	-	$ -	$ -	-	-	-	$ -
Building Envelope	$ 12,750	3.6	127,238	1,272,377	$ 144,333	$ 12,750	3.6	127,238	1,272,377	$ 144,333	$ 12,750	3.6	127,238	1,272,377	$ 144,333
Commercial Kitchen	$ -	-	-	-	$ -	$ -	-	-	-	$ -	$ -	-	-	-	$ -
HVAC	$ 1,940,044	1,757.7	8,753,717	150,360,780	$ 18,791,506	$ 1,518,044	1,010.6	6,349,847	114,548,706	$ 13,473,921	$ 1,396,044	766.8	5,581,354	103,267,289	$ 11,777,452
Lighting	$ 745,672	639.9	3,674,807	52,640,623	$ 6,568,682	$ 745,672	639.9	3,674,807	52,640,623	$ 6,568,682	$ 745,672	639.9	3,674,807	52,640,623	$ 6,568,682
Midstream	$ 1,096,430	1,623.1	8,861,638	138,893,878	$ 17,154,507	$ 1,096,430	1,623.1	8,861,638	138,893,878	$ 17,154,507	$ 1,096,430	1,623.1	8,861,638	138,893,878	$ 17,154,507
Plug/Process Load	$ -	-	-	-	$ -	$ -	-	-	-	$ -	$ -	-	-	-	$ -
Pumps and Motors	$ 100,110	123.0	1,214,297	17,555,943	$ 2,059,950	$ 100,110	123.0	1,214,297	17,555,943	$ 2,059,950	$ 100,110	123.0	1,214,297	17,555,943	$ 2,059,950
Refrigeration	$ 69,000	26.8	180,598	1,444,787	$ 199,803	$ 69,000	26.8	180,598	1,444,787	$ 199,803	$ 69,000	26.8	180,598	1,444,787	$ 199,803
Submetering	$ 122,250	73.7	464,185	3,713,478	$ 520,541	$ 122,250	73.7	464,185	3,713,478	$ 520,541	$ 122,250	73.7	464,185	3,713,478	$ 520,541
Water Heating	$ 125,685	707.3	1,225,591	22,022,278	$ 3,920,029	$ 125,685	707.3	1,225,591	22,022,278	$ 3,920,029	$ 125,685	707.3	1,225,591	22,022,278	$ 3,920,029
BESM	**$ 1,029,215**	**144.2**	**1,044,353**	**7,881,766**	**$ 1,082,718**	**$ 1,062,399**	**132.3**	**985,660**	**7,587,425**	**$ 1,038,823**	**$ 1,128,534**	**-**	**119,142**	**357,427**	**$ 42,716**
Codes & Standards	$ -	132.3	926,089	7,408,712	$ 1,017,465	$ -	132.3	926,089	7,408,712	$ 1,017,465	$ -	-	-	-	$ -
Energy Study Grant	$ 242,000	-	-	-	$ -	$ 242,000	-	-	-	$ -	$ 242,000	-	-	-	$ -
Energy-Water Nexus	$ 24,750	11.8	118,264	473,055	$ 65,253	$ -	-	-	-	$ -	$ 50,000	-	-	-	$ -
Whole Building Assistance	$ 762,465	-	-	-	$ -	$ 820,399	-	59,571	178,713	$ 21,358	$ 836,534	-	119,142	357,427	$ 42,716
BGRID	**$ 2,292,267**	**4,202.8**	**150,577**	**1,505,765**	**$ 4,274,981**	**$ 850,602**	**1,485.5**	**150,577**	**1,505,765**	**$ 1,627,322**	**$ 478,115**	**1,485.5**	**150,577**	**1,505,765**	**$ 1,627,322**
Grid Services	$ 2,292,267	4,202.8	150,577	1,505,765	$ 4,274,981	$ 850,602	1,485.5	150,577	1,505,765	$ 1,627,322	$ 478,115	1,485.5	150,577	1,505,765	$ 1,627,322
BHTR	**$ 4,154,841**	**1,038.0**	**6,863,630**	**98,934,407**	**$ 12,265,940**	**$ 4,411,824**	**1,107.3**	**7,013,443**	**99,929,404**	**$ 12,428,668**	**$ 4,456,533**	**1,225.8**	**7,244,790**	**101,139,142**	**$ 12,649,128**
A&A Grant	$ 499,000	-	-	-	$ -	$ 800,000	-	-	-	$ -	$ 800,000	-	-	-	$ -
Appliances	$ -	-	-	-	$ -	$ -	-	-	-	$ -	$ -	-	-	-	$ -
Commercial Custom	$ 75,000	39.9	318,183	4,920,752	$ 584,845	$ 75,000	39.9	318,183	4,920,752	$ 584,845	$ 75,000	39.9	318,183	4,920,752	$ 584,845
Commercial Kitchen	$ 195,550	180.1	977,394	11,532,229	$ 1,546,398	$ 205,328	189.2	1,026,264	12,108,840	$ 1,623,718	$ 215,594	198.6	1,077,577	12,714,282	$ 1,704,904
EMPOWER Non-profit	$ 143,567	-	-	-	$ -	$ 146,386	-	-	-	$ -	$ 149,279	-	-	-	$ -
Energy Advantage	$ 2,608,500	763.5	5,470,905	82,063,578	$ 10,047,042	$ 2,633,500	764.2	5,475,185	82,191,970	$ 10,060,900	$ 2,658,500	764.8	5,479,465	82,269,005	$ 10,070,083
Grid Services	$ 613,124	48.8	79,089	237,268	$ 58,541	$ 531,510	108.4	175,754	527,261	$ 130,092	$ 538,060	216.8	351,507	1,054,522	$ 260,183
HVAC	$ -	-	-	-	$ -	$ -	-	-	-	$ -	$ -	-	-	-	$ -
Multifamily Direct Install	$ 20,100	5.6	18,058	180,580	$ 29,114	$ 20,100	5.6	18,058	180,580	$ 29,114	$ 20,100	5.6	18,058	180,580	$ 29,114
Refrigeration	$ -	-	-	-	$ -	$ -	-	-	-	$ -	$ -	-	-	-	$ -
BTRAN	**$ 1,068,732**					**$ 1,068,732**					**$ 1,068,732**				
Transformation	$ 1,068,732					$ 1,068,732					$ 1,068,732				
CBEEM	**$ 4,935,703**	**2,910.5**	**26,901,196**	**376,115,928**	**$ 44,724,352**	**$ 5,045,501**	**3,009.6**	**27,737,999**	**386,994,368**	**$ 46,061,615**	**$ 5,549,580**	**3,351.3**	**30,924,989**	**432,030,858**	**$ 51,411,578**
Commercial Custom	$ 4,935,703	2,910.5	26,901,196	376,115,928	$ 44,724,352	$ 5,045,501	3,009.6	27,737,999	386,994,368	$ 46,061,615	$ 5,549,580	3,351.3	30,924,989	432,030,858	$ 51,411,578
Increased chiller push	$ -	-	-	-	$ -	$ -	-	-	-	$ -	$ -	-	-	-	$ -
CREEM	**$ 55,000**	**17.4**	**183,416**	**1,834,165**	**$ 228,879**	**$ 55,000**	**17.4**	**183,416**	**1,834,165**	**$ 228,879**	**$ 55,000**	**17.4**	**183,416**	**1,834,165**	**$ 228,879**
Residential Custom	$ 55,000	17.4	183,416	1,834,165	$ 228,879	$ 55,000	17.4	183,416	1,834,165	$ 228,879	$ 55,000	17.4	183,416	1,834,165	$ 228,879
REEM	**$ 5,246,440**	**1,968.7**	**16,108,177**	**235,637,371**	**$ 28,038,284**	**$ 5,068,745**	**1,846.5**	**15,567,882**	**225,369,821**	**$ 26,749,898**	**$ 4,979,475**	**1,971.5**	**18,289,135**	**258,222,295**	**$ 30,402,401**
Accounting	$ 156,505	-	-	-	$ -	$ 60,000	-	-	-	$ -	$ 60,000	-	-	-	$ -
Downstream	$ 2,762,675	846.7	8,796,125	120,755,480	$ 14,053,129	$ 2,912,125	859.2	9,096,312	126,319,063	$ 14,644,896	$ 2,910,325	1,164.9	12,908,567	181,354,623	$ 20,909,745
Midstream	$ 236,260	119.6	821,538	7,611,966	$ 1,024,988	$ 295,620	146.9	1,026,221	9,634,100	$ 1,291,308	$ 303,150	146.9	1,083,100	10,032,257	$ 1,336,371
Online Marketplace	$ 106,000	18.6	129,494	1,408,805	$ 178,558	$ 106,000	18.6	129,494	1,408,805	$ 178,558	$ 106,000	18.6	129,494	1,408,805	$ 178,558
Peer Group Comparison						$ -	-	-	-	$ -	$ -	-	-	-	$ -
Upstream	$ 1,985,000	983.8	6,361,019	105,861,119	$ 12,781,609	$ 1,695,000	821.7	5,315,855	88,007,855	$ 10,635,136	$ 1,600,000	641.1	4,167,974	65,426,610	$ 7,977,726
RESM	**$ 1,314,036**	**1,853.4**	**10,236,101**	**71,500,296**	**$ 10,280,335**	**$ 1,349,708**	**1,870.3**	**10,322,242**	**71,806,601**	**$ 10,328,053**	**$ 1,360,149**	**1,866.5**	**10,300,810**	**70,636,357**	**$ 10,209,303**
Codes & Standards	$ -	1,347.3	7,881,909	63,958,891	$ 9,059,513	$ -	1,347.3	7,881,909	63,958,891	$ 9,059,513	$ -	1,339.7	7,828,755	62,630,036	$ 8,918,594
Downstream	$ 810,000	506.1	2,354,193	7,541,405	$ 1,220,823	$ 845,000	523.1	2,440,333	7,847,710	$ 1,268,540	$ 854,750	526.9	2,472,056	8,006,321	$ 1,290,709
Whole Home	$ 504,036	-	-	-	$ -	$ 504,708	-	-	-	$ -	$ 505,399	-	-	-	$ -
RGRID	**$ 146,984**	**-**	**-**	**-**	**$ -**	**$ 148,207**	**-**	**-**	**-**	**$ -**	**$ 149,461**	**-**	**-**	**-**	**$ -**
Grid Services	$ 146,984	-	-	-	$ -	$ 148,207	-	-	-	$ -	$ 149,461	-	-	-	$ -
RHTR	**$ 3,191,678**	**514.8**	**3,818,390**	**46,037,199**	**$ 5,666,825**	**$ 3,352,349**	**532.8**	**3,934,161**	**48,279,751**	**$ 5,924,927**	**$ 3,344,506**	**643.9**	**4,709,867**	**60,843,230**	**$ 7,427,797**
Community Program	$ 367,184	0.1	1,045	15,677	$ 1,815	$ 447,321	0.1	1,539	23,084	$ 2,672	$ 270,922	0.1	1,045	15,677	$ 1,815
Downstream	$ 1,739,450	391.8	3,293,919	39,358,539	$ 4,744,423	$ 1,792,350	403.9	3,370,172	41,008,319	$ 4,929,183	$ 1,916,925	509.3	4,107,347	52,993,841	$ 6,360,424
Grid Services	$ 551,769	5.8	39,024	585,365	$ 72,486	$ 579,403	11.6	78,049	1,170,730	$ 144,971	$ 623,384	17.4	117,073	1,756,095	$ 217,457
Multifamily Direct Install	$ 100,425	30.7	99,220	992,199	$ 159,967	$ 100,425	30.7	99,220	992,199	$ 159,967	$ 100,425	30.7	99,220	992,199	$ 159,967
Peer Group Comparison						$ -	-	-	-	$ -	$ -	-	-	-	$ -
Residential Custom	$ 40,000	4.0	41,804	418,043	$ 52,166	$ 40,000	4.0	41,804	418,043	$ 52,166	$ 40,000	4.0	41,804	418,043	$ 52,166
Single Family Direct Install	$ 332,850	58.5	189,177	1,891,767	$ 304,999	$ 332,850	58.5	189,177	1,891,767	$ 304,999	$ 332,850	58.5	189,177	1,891,767	$ 304,999
Upstream	$ 60,000	24.0	154,200	2,775,608	$ 330,969	$ 60,000	24.0	154,200	2,775,608	$ 330,969	$ 60,000	24.0	154,200	2,775,608	$ 330,969
RTRAN	**$ 1,112,416**					**$ 1,112,416**					**$ 1,112,416**				
Transformation	$ 1,112,416					$ 1,112,416					$ 1,112,416				
Grand Total	**$ 28,913,623**	**17,604.9**	**89,807,910**	**1,227,351,042**	**$ 155,921,667**	**$ 27,469,794**	**14,209.8**	**87,993,581**	**1,195,399,370**	**$ 148,429,952**	**$ 27,504,812**	**14,526.3**	**93,252,434**	**1,267,379,893**	**$ 156,344,422**

MARKET TRANFORMATION BUDGET

Transformational Incentives	PY22	PY23	PY24	Total	% of Budget
RESIDENTIAL PROGRAMS					
RTRAN	**$1,112,416**	**$1,112,416**	**$1,112,416**	**$3,337,248**	**51.0%**
Program Management	**$214,047**	**$214,047**	**$214,047**	**$642,141**	**9.8%**
Program Management	$214,047	$214,047	$214,047	$642,141	9.8%
Behavior Change	**$439,959.30**	**$439,959.30**	**$439,959.30**	**$1,319,877.89**	**20.2%**
Community Education Support, Events	$303,223.63	$303,223.63	$303,223.63	$909,670.90	13.9%
Youth Energy Education and Events	$102,515.16	$102,515.16	$102,515.16	$307,545.48	4.7%
Enhanced Engagement (Gamification)	$34,220.50	$34,220.50	$34,220.50	$102,661.51	1.6%
Professional Development and Technical Training	**$223,231**	**$223,231**	**$223,231**	**$669,693**	**10.2%**
Clean Energy Ally Support	$79,259	$79,259	$79,259	$237,776	3.6%
Targeted Ally Training Opportunities	$70,132	$70,132	$70,132	$210,395	3.2%
Targeted Participant Training Opportunities	$73,841	$73,841	$73,841	$221,522	3.4%
Strategy & Planning	**$158,948**	**$158,948**	**$158,948**	**$476,845**	**7.3%**
Long-term Strategic Planning & Data Analytics	$158,948	$158,948	$158,948	$476,845	7.3%
Codes and Standards	**$31,414**	**$31,414**	**$31,414**	**$94,241**	**1.4%**
Codes Training, Technical Support, Advocacy	$31,414	$31,414	$31,414	$94,241	1.4%
Clean Energy Innovation Hub	**$44,817**	**$44,817**	**$44,817**	**$134,450**	**2.1%**
Innovation and Emerging Technologies	$44,817	$44,817	$44,817	$134,450	2.1%
COMMERCIAL PROGRAMS					
BTRAN	**$1,068,732**	**$1,068,732**	**$1,068,732**	**$3,206,196**	**49.0%**
Program Management	**$251,128**	**$251,128**	**$251,128**	**$753,385**	**11.5%**
Program Management	$251,128	$251,128	$251,128	$753,385	11.5%
Behavior Change	**$11,260**	**$11,260**	**$11,260**	**$33,781**	**0.5%**
Community Education Support, Events	$11,260	$11,260	$11,260	$33,781	0.5%
Professional Development and Technical Training	**$484,494**	**$484,494**	**$484,494**	**$1,453,483**	**22.2%**
Clean Energy Ally Support	$177,197	$177,197	$177,197	$531,592	8.1%
Targeted Ally Training Opportunities	$165,219	$165,219	$165,219	$495,658	7.6%
Targeted Participant Training Opportunities	$91,852	$91,852	$91,852	$275,555	4.2%
Energy Industry Workforce Development	$50,226	$50,226	$50,226	$150,677	2.3%
Strategy & Planning	**$181,990**	**$181,990**	**$181,990**	**$545,969**	**8.3%**
Long-term Strategic Planning & Data Analytics	$181,990	$181,990	$181,990	$545,969	8.3%
Codes and Standards	**$72,634**	**$72,634**	**$72,634**	**$217,902**	**3.3%**
Codes Training, Technical Support, Advocacy	$72,634	$72,634	$72,634	$217,902	3.3%
Clean Energy Innovation Hub	**$67,225**	**$67,225**	**$67,225**	**$201,675**	**3.1%**
Innovation and Emerging Technologies	$67,225	$67,225	$67,225	$201,675	3.1%