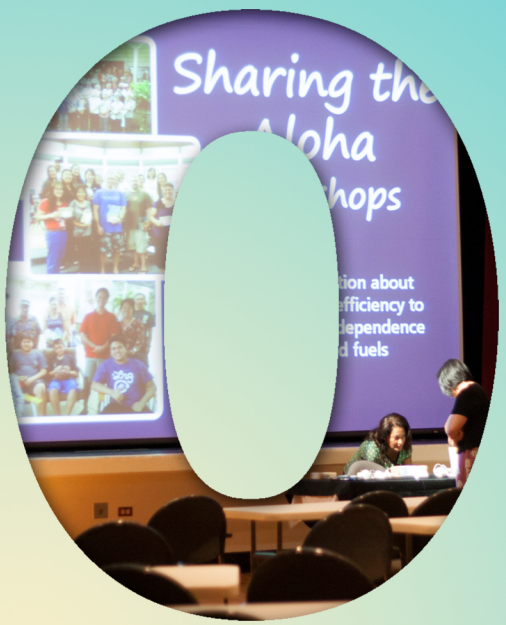

ANNUAL PLAN

leidos

Hawaii Energy
YOUR CONSERVATION & EFFICIENCY PROGRAM

Annual Plan

Program Year 2015

June 10, 2015

Hawaii Energy *is the ratepayer-funded energy conservation and efficiency program administered by Leidos Engineering, LLC under contract with the Hawaii Public Utilities Commission serving the islands of Hawaii, Lanai, Maui, Molokai and Oahu.*

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1.0 INTRODUCTION

On behalf of Leidos Engineering, LLC ("Leidos") and the Hawaii Energy Efficiency Program, operating as the Hawaii Public Benefits Fee Administrator (PBFA) under contract with the Hawaii Public Utilities Commission (PUC), we are pleased to present the PBFA Annual Plan for Program Year 2015 [July 1, 2015 through June 30, 2016] (PY15).

1.1 Annual Plan

This PY15 Annual Plan is based on our PY15 Program Renewal Proposal submitted May 21, 2015 and provides the detailed strategies, budget, goals and a roadmap for administration and delivery of the Hawaii Energy Program based on enhanced PBFA statutory authority, our experience to date, PUC directives and the State's clean energy goals.

Key features of this PY15 Annual Plan include:

a. Utilizing a $38M budget to provide program-level impacts of 122,243,721 kWh first year savings with $0.034 (LBNL Cost of Saved Energy (CSE)) per kWh average lifetime Program acquisition cost, a fraction of the current utility avoided cost of $0.161/kWh;

b. Achieving a TRB of $159M and a measure life energy cost savings of $509M to utility customers;

c. The development of a new custom lighting program to address energy saving potential in existing specialty interior and linear fluorescent lamps in the residential sector;

d. A specially designed custom residential hard-to-reach program targeting previous Transformational program participants;

e. Removing the Residential and Commercial Energy Auctions from the Program making $196,000 available to be used on more cost-effective and realistic measures;

f. Proactively addressing a market transition of CFLs to LEDs by reducing CFLs to 13% of the planned energy savings, as compared to 38% in PY13;

g. Increasing the Peer Group Comparison program to reach 240,000 households while improving customer experience through the use of web-based services and enhanced tools; and

h. Establishing a Strategic Energy Management (SEM) teaming process to assist large businesses and institutions to plan and execute effective energy management as a critical part of business operations.

1.2 Key Factors Impacting and Actions Basis for Annual Plan

The following are some of the key factors and actions that have impacted the Annual Plan developed for PY15:

1.2.1 *Increased Program Aggressiveness* – The PUC guidance has been to push the Program to:

- Deeper energy savings achievement with expanded offerings and services for the Public
- Longer life measures
- Integrated Demand Response capability into energy efficiency projects
- Further opportunity and awareness for all to participate,

1.2.2 *Building a Cost-Effective Program* – The benchmark measurements of the Energy Efficiency program is the "Program Cost Test" that takes into account all program-related costs as compared to the energy reductions achieved. For PY15 the "all-in" cost per kWh is $0.03.

The PY15 program energy figures are provided in the table below:

- Customer Level First Year Energy Impact of 139M kWh
- 1,536,899,706 kWh savings over the life of the measures
- $38,033,885 Overall Program Budget "Program Cost"
- Lifetime Cost of Saved Energy (CSE) of $0.034 /kWh
- Annual Cost Savings to Participants of $46 Million
- Lifetime project cost savings of $509 Million
- Economic generation of $184 Million in facility improvements

Table 1
PY15 Program Performance Targets and Impacts

Proposed PY15	First Year ($/kWh)	Lifetime ($/kWh)	Average Life (Yrs.)	Incentives	First Year Energy (kWh)	Lifetime Energy (kWh)
Business	$ 0.209	$ 0.019	9.1	$ 12,915,474	61,753,307	549,238,079
Residential	$ 0.175	$ 0.016	13.0	$ 10,557,940	60,490,414	801,601,096
Direct Incentives Only	$ 0.192	$ 0.017	11.1	$ 23,473,414	122,243,721	1,334,111,790
Transformational Programs				$ 3,251,960		
Program Cost/Savings	**$ 0.219**	**$ 0.020**		**$ 26,725,374**	**122,243,721**	**1,334,111,790**
Customer Level Bill Savings					**139,081,204**	**1,536,899,706**

Economic Benefits	**Cost per kWh**	**Annual**	**Lifetime**
Potential Participant Cost Savings	**$ 0.33**	**$ 46,103,169**	**$ 509,457,390**
Average Project Simple Payback		4.0 years	
Potential Participant Capital Investment		**$ 184,412,677**	
Direct Incentives		$ 23,473,414	
Average Project Incentive as a % of Project Cost		13%	

1.2.3 *"How & What to Buy" Participant Advocacy* – Hawaii Energy has sustained a focused review of the inclusion of new measures and equipment into the program over the past five years and this has proven to have protected participants from "bleeding edge" and "here today, gone tomorrow" offerings. The program has always offered customized incentives that would encompass any energy savings action and perform reviews of post energy usage to confirm claimed energy savings. The Program has also stayed contractor/vendor neutral to the extent that no promotions of available companies were done in order to avoid the appearance of endorsement.

In PY15 Hawaii Energy will utilize the Clean Energy Ally program to create awareness of all the companies that are providing energy efficiency goods and services and provide "how-to-buy" discussions to address common hurdles of indecision to starting energy projects.

1.2.4 *Increased Benchmarking and Web Tools to Drive Engagement and Awareness* – Hawaii Energy will build on the experience gained in PY14 with benchmarking and utility data analysis to drive behavior in both the business and residential sectors.

Data visualization and customized views of information on the website shown on the following pages (Figures 1, 2, & 3) will drive engagement by showing participants where their energy consumption compares with others in the community in new ways.

The Program will also provide our Clean Energy Allies with segmented and Hawaii specific data so they can make informed decisions on what products and services they can offer to assist customers in improving their operations as they lower energy usage and costs.

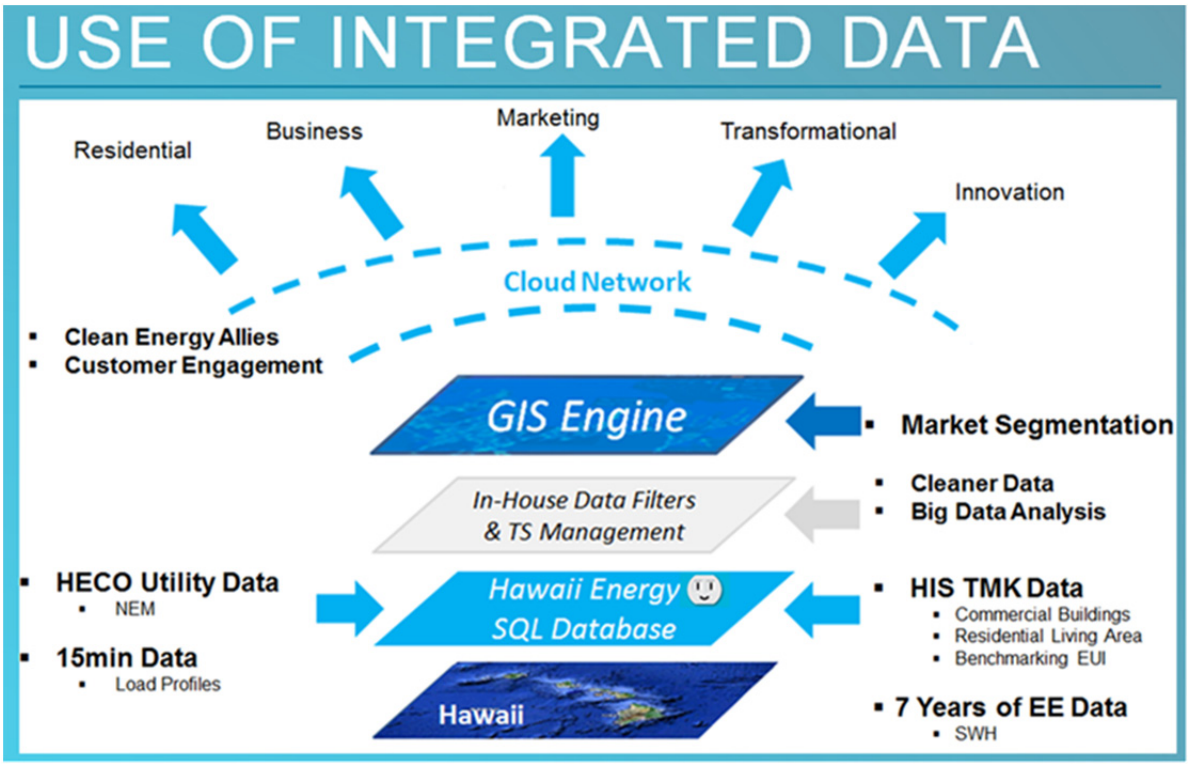

Figure 1: Data Integration Process

Hawaii Energy's new data engine will integrate the utility data with geographic information system (GIS) to capture, analyze, and present the valuable information to both the business and residential sectors.

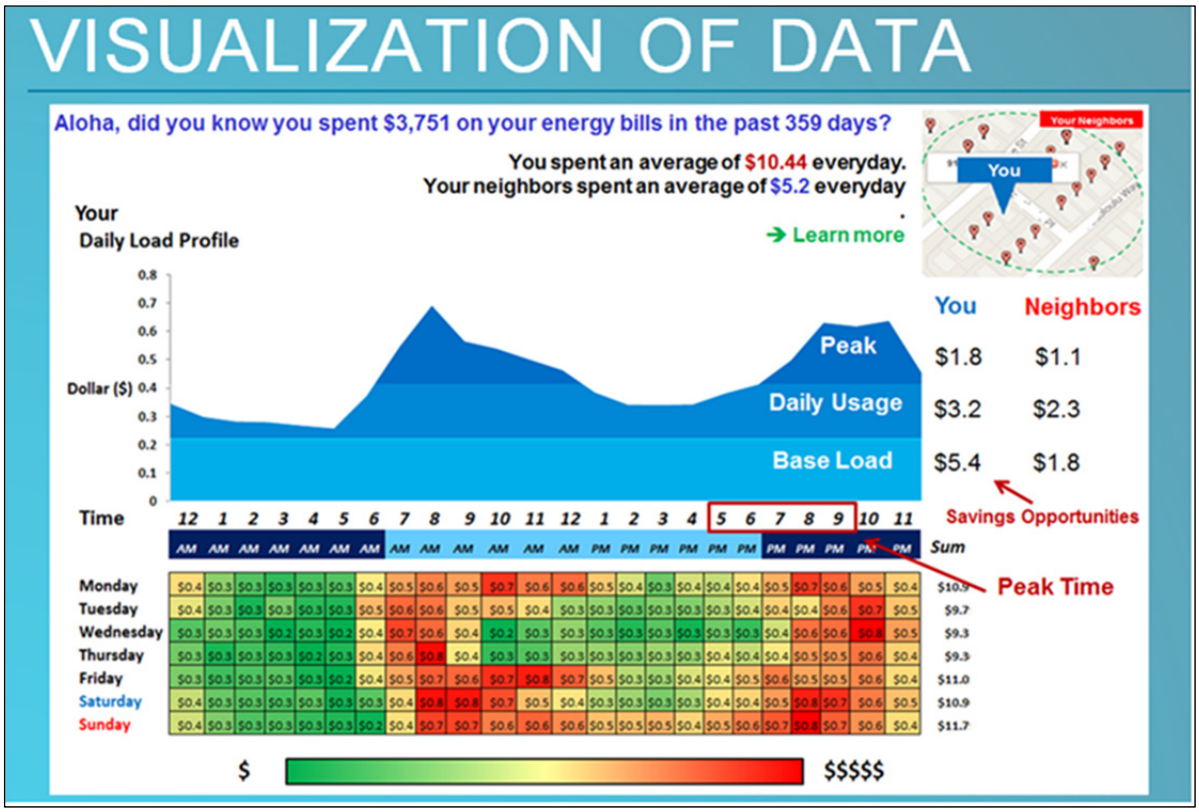

Figure 2: Smart Meter Data Visualization

This chart illustrates the concept of using energy in Time-of-Use (TOU) with the smart meter and how the Program can analyze and visualize the 15-min interval AMI data effectively in an innovative way to help the customers make informed decisions.

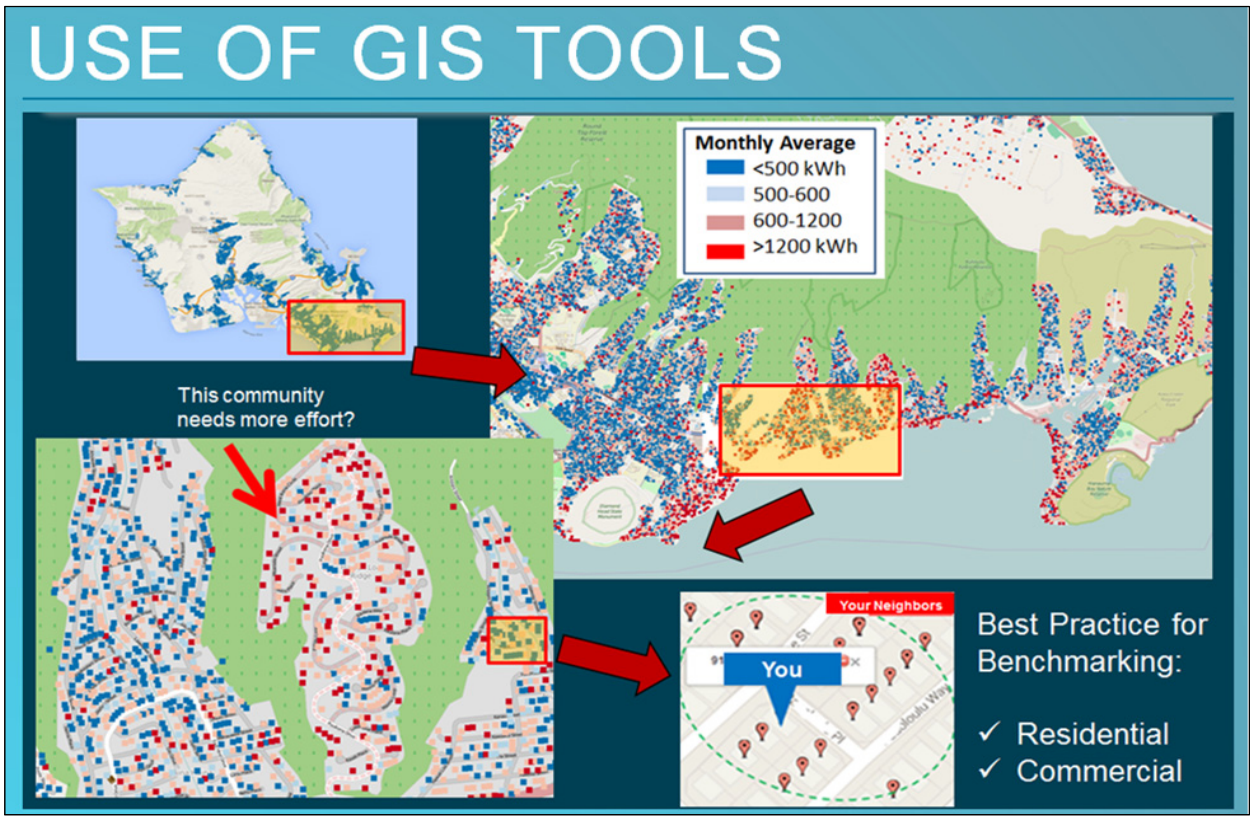

Figure 3: Use of GIS Tools

Utilizing the "Big Data" with the GIS mapping software will help the Program to drive engagement and awareness.

2.0 OUTREACH & MARKETING COMMUNICATIONS

2.1 Overview

For PY15, the primary objective of the Program's Marketing Communications ("Marcom") is to more aggressively increase customer awareness of and participation in Hawaii Energy offerings (i.e., residential rebates, business incentives and transformational educational/training opportunities) through development and execution of a strategic and integrated marketing plan utilizing effective strategies and tactics.

Most notably, the Program will continue to leverage lessons learned and replicate successes to break through awareness and participation barriers across electric utility customer segments by speaking in each segment's "language" (including metrics that matter to them) and tone to motivate each to participate in Hawaii Energy's offerings and save energy.

Breaking Through Awareness and Participation Barriers
The Program understands the PUC's desire to ensure that all eligible utility customers are aware of the offerings and the benefits of participating. The nature of the messaging is critical and the Program will work to utilize language that has broad appeal, reaching electric customers across rate schedules and demographics. In PY15, the Program will continue to increase awareness of and participation in program offerings by leveraging marketing successes and lessons learned from prior program years through a cost-effective and metrics-based marketing plan, which will utilize a strategic mix of traditional and non-traditional strategies and tactics.

The Program will more aggressively develop and execute results-based marketing plan to increase electric customers' awareness and participation to levels needed to sustain Hawaii Energy as a brand and a successful energy conservation and efficiency program.

Opportunities for PY15
For PY15, Hawaii Energy has identified significant opportunities to leverage the successes and lessons learned to enhance strategies and tactics already proven effective, as well as explore additional innovative, cost-effective and wide-reaching opportunities. Comprised of a mix of results-based strategies and tactics, Hawaii Energy will reach customers across Hawaii, Honolulu and Maui counties and maximize reach and effectiveness with continuous analysis and refinement.

2.2 Key Objectives

For Marcom, the key objective continues to be to increase awareness and participation in Hawaii Energy's offerings. The primary call-to-action for customers is to go to our Hawaii Energy's website or contact our call center. Where the offerings and/or applications are available only at retailers or other distribution points by design, the call-to-action is adjusted accordingly.

Specific new segments to be targeted are:

- *Residential* – Multi-family direct install candidates and homes with T12 and MR16 lamps for participation in Customized Energy Solutions for the Home (CESH)
- *Business* – Warehouse high bay lighting, High Intensity Discharge (HID) lighting replaced with new Light Emitting Diode (LED) lighting fixtures coupled with lighting controls.

Additionally, PY15 is the opportune time to revisit and use a more aggressive, yet local and relatable, approach to market the Program. This approach will leverage market research results from PY14, as well as selling and communication approaches such as those utilized and promoted by one of the Program's Transformational subcontractors, Mark Jewell of EEFG Inc. Such an approach is critical to the continued and increased success of the Program.

A brief summary of the market research, as well as high-level key considerations of an aggressive integrated marketing plan in PY15, are outlined below.

2.3 PY14 Market Research

Market research conducted in PY14 indicates that although there is low awareness of Hawaii Energy, many had heard of and had participated in some of our offerings.

Specifically from the telephone phone and online surveys (the quantitative component of the market research):

- Out of a base of 624 surveyed, 10% reported having contact with Hawaii Energy.
- Of those who had heard of Hawaii Energy, 43% could describe – unaided – an offering from Hawaii Energy.
- As for aided awareness of 5 specific offerings (i.e., solar water heating, Home Energy Reports, ENERGY STAR® appliances, efficient light bulb low prices & old refrigerator rebates), it ranged from 35% to 78%.
- As for participation in those same offerings, it ranged from 15 to 34%.

The market research also included two qualitative components (i.e., focus groups and one-on-one interviews). A summary of the key findings of the market research was presented to key Hawaii Energy and PUC staff by the independent market research subcontractor, and a written detailed summary provided for further analysis. Highlights of the research will be outlined in the PY14 Annual Report.

In short, the research indicates a strong need to increase Hawaii Energy's brand (i.e., name) awareness to increase participation. In addition, of note, those surveyed online were asked how they get most of their information. They were allowed to check off a list and indicate all that applied. A majority indicated the Star-Advertiser, Hawaii News Now, KHON-2, word-of-mouth, websites, direct mail and radio, among other responses. Key feedback such as the above will be analyzed and considered for the PY15 marketing plan.

Considering the above, where appropriate, the Program will continue to integrate cost-effective and relatable branding into offer-specific marketing communications strategies and tactics.

2.4 Overview of Integrated Marketing Plan

The cornerstone of Hawaii Energy's PY15 integrated marketing plan is continuing to refine and use clear messaging that Hawaii Energy is the energy conservation and efficiency program funded by electric customers to serve electric customers in a way that excites and engages the different segments of the electric customers – with the goal of their participation in Hawaii Energy offers.

As always, critical to the marketing plan – and all Marcom strategies and tactics – is the development of the exact messaging that will resonate with electric customers, yet still be simple and memorable for customers to carry out the call-to-action.

2.4.1 *Integrating All Components of Marketing*

As an integrated marketing plan and to add credibility and relatability to the Program, the Program will continue to increase the reach of and participation in the Program's offerings through robust strategies and tactics, including but not limited to public relations, outreach, promotions, web and social media to maximize success. An overview of the strategies and tactics are outlined in the sections below.

Specifically, public relations includes media relations with the goal of securing "earned media" in mainstream, community and trade publications such as bylined articles and feature stories to keep the Program top-of-mind for and to increase participation from various segments of the electric customer population.

Additionally, while the Program's outreach activities have evolved significantly over time to include well-attended and engaged electric utility customers from a wide range of demographics and geographical areas, a significant uptick in web traffic and social media-based engagement will be the focus in PY15. See Outreach section below.

2.4.2 *Leveraging Strategic and Cost-Effective Advertising to Expand Reach and Increase Participation*

To maximize reach while maintaining cost-effectiveness, the Program will also continue to develop and utilize a mix of strategic advertising which will be integrated with the messaging of all other marketing communications strategies outlined herein. The timeframe, total reach and mix of advertising among these media will be determined to maximize effectiveness and the budget available. PY14 advertising highlights and metrics will be included in the PY14 Annual Report.

PY15's advertising may include but is not limited to print, radio, TV and online medium. Where feasible, built-in metrics for the Program to gauge not only interest from the target markets – but action or participation will be worked on, tracked and analyzed. This will expand on PY14's successes, including PY14's one-month online advertising buy to promote Residential energy-saving kits, which provided metrics ranging from interest (e.g., click-throughs) to "conversion" (i.e., opt-in/purchase of the kits). Results and metrics from PY14's advertising buys will be highlighted in the PY14 Annual Report.

Details and components of the media buy, including but not limited to frequency, estimated impressions or reach and audience demographics, are to be determined based on budget availability, as well as the offers being promoted and target markets. Where appropriate, the Program will work with the media directly or a media buyer to negotiate the best pricing and placement available for the buys and inclusion of added-values where available (e.g., "complimentary" or "built-into the buy" additional promotional opportunities such as bonus mentions and invitations to participate in strategic outreach events) to maximize the impact of the advertising budget.

2.4.3 *Evaluation to Increase and Measure Success of Marketing Plan*

Progress and results of marketing strategies will be tracked and analyzed with continuous pre- and post-evaluation to determine the effectiveness and success of the messaging and tactics in relation to industry-established metrics. The Program will continually monitor and remain flexible throughout the Program year to adjust strategies and tactics, where needed, based on the evaluations to maximize success.

Evaluation methods include, but are not limited to, cost-effective phone and online surveys, as well as website and social media metrics. Specific evaluation methods will be determined and tailored for each strategy and tactic to provide the Program with the most relevant and useful metrics on an ongoing basis to allow for readjustments as needed during the Program year.

2.5 Overview of Marketing Strategies and Tactics

To continue to increase awareness of and participation in the Program's Residential, Business and Transformational offerings, the Program will leverage industry-recognized strategies and tactics including those outlined below: (1) outreach; (2) website; (3) social media; (4) promotions; (5) videos; (6) email marketing; (7) co-op marketing with Clean Energy Allies; (8) marketing collateral; (9) direct mail; and (10) public relations.

2.5.1 *Outreach*

The Program's community outreach efforts continue to play an important role in increasing and maintaining the awareness of Program rebates and offers for the general customer population and business communities.

As of PY14 third quarter, Hawaii Energy has participated in 31 events and is on track to reach a total of 45 events for the entire program year, reaching approximately 107,705 people (estimated event attendance). This includes a mix of traditionally well-attended residential community events and business trade expos, as well as smaller, industry-tailored events where we were able to promote specific sets of offerings (i.e., small business lighting, restaurant kitchen, etc.). For PY15, the Program will again aim for upward of 40 events during the year, continuously evaluating for cost-effectiveness, reach and lead generation potential.

A few highlights of PY15 outreach efforts include:

- *Traditional Outreach* **-** For PY15, the Program will continue to participate in the community and trade expo events that proved to be successful based on post-event surveys, historical participation, audience, attendance and location. While striving to maintain reach levels consistent with past program years, the Program will research new opportunities and partnerships, strategically incorporating new events if they are deemed feasible and beneficial in reaching overall Program goals. Marcom will also re-evaluate tracking and evaluation metrics in PY15 to ensure outreach remains a high-value portion of overall marketing efforts.

- *Outreach Through Community Allies & Organizations* - The Program will continue to align itself with organizations that: 1) share a common or similar objective of helping the community through environmental and/or sustainable efforts, or 2) reach market sectors that would benefit from specific business, residential or transformational offerings (i.e. promoting restaurant-related incentives at a foodservice industry association meeting). These strategic partnerships help the Program increase its ability to reach more electric customers, as well as "hard-to-reach" populations.

- *Collaborate with Hawaii Businesses and Organizations* - Hawaii Energy will increase collaboration with private businesses and industry/nonprofit organizations to facilitate other creative or more targeted ways of disseminating Program messages. These methods may include tailored presentations by Hawaii Energy team members and collaborating on special events as appropriate. In addition, Program personnel will join and participate in professional organizations that are important for the Program to support as an active member, provided there is no actual or appearance of conflict of interest.

2.5.2 *Website*

The Program's website serves as a resource for electric customers and Clean Energy Allies to learn about how homes and businesses can save energy and money on their electric bills. The Program designs and maintains the website in-house and the site's design was refreshed to incorporate new offers and interactive customer tools.

The Hawaii Energy website receives, on average, 19,000 page views from roughly 5,000 unique visitors per month. (More metrics will be available in the PY14 Annual Report.) For PY15, Hawaii Energy will continue to review and refine the website to ensure that it is providing a relevant and positive user experience. The Program's goal is to increase page views and unique visitors by 10% and to re-evaluate its website metrics and web design to improve customer engagement and experience.

At the beginning of 2014, Hawaii Energy developed a "Dare-to-Compare" website tool to engage customers with live, personalized information regarding their energy usage as compared to their neighbors. We will continue to refine this tool in PY15, providing greater segmentation (e.g. markets, sizes of homes) capabilities and layering with GIS and other data sources.

2.5.3 *Social Media*

Hawaii Energy continues to use social media (i.e., Facebook, Twitter and Instagram) as a low/no-cost tool to market Program offerings, stay at the forefront of customers' minds on a daily basis, and most importantly, keep a pulse on our community.

As of PY14 third quarter, Hawaii Energy has over 3,500 Facebook "likes" and over 2,700 Twitter followers, counts that remained consistent (i.e., without significant drops) over the year. Additionally, the Instagram account, which was started in PY13, is up to 136 followers.

For PY15, the Program will continue to provide interesting and relevant content, while developing a solid social media strategy – with the ultimate goal to increase not only follower count, but other important metrics such as reach, virality (number of people talking about our brand) and conversion

(translating post viewing into program participation). Options to execute this strategy can include, but are not limited to: (1) developing a refined editorial calendar and set of goals; (2) advertising on social media platforms, which is traditionally inexpensive compared to other mediums; and (3) executing 1-2 timed campaigns around specific program offers throughout the year.

2.5.4 *Promotions*

The Program will continue to develop promotions to bring excitement and increase word-of-mouth for Hawaii Energy. Promotions will be developed based on specific offer or Program goals, but may include contests (e.g., social media, photos, videos), special promotions via our Clean Energy Allies, community promotions through local nonprofits, seasonal promotions and discount offers. The Program will identify and track participation metrics to determine the success of the promotions. Results (including metrics, successes and lessons learned) of PY14 promotions will be highlighted in the PY14 Annual Report.

For PY15, the promotions plan includes:

- *Residential* – Special discount offers to promote products available at Hawaii Energy's online store. Online sweepstakes for customers to register to win a free energy-saving device.

  Special discount offers to promote products available at Hawaii Energy's online store. Online sweepstakes to encourage customers to check their Dare-To-Compare results and win a free energy-saving device.

- *Business* – Promotions on incentives will be limited should it be determined that they will move the market to a meaningful degree. Rather, the Program will look towards promotions akin to SPFFs and other sales-oriented incentives to motivate Clean Energy Allies who are more instrumental in selling energy efficiency.

2.5.5 *Videos*

Marcom recognizes and understands that videos can be powerful for drawing in and retaining the attention of its customers. As such, the Program will continue to explore the strategy of conveying our messages through videos.

For PY15, the Program's goal is to build a library of resource videos for residential and commercial customers. Video content can range from featuring success stories/testimonials from residential and commercial customers, energy-saving tips and educational "how-to" videos. The videos will be featured on our website and YouTube pages, as well as promoted through our e-newsletters and social media channels.

2.5.6 *Email Marketing*

As of PY14 third quarter, Hawaii Energy has over: (1) 10,500 subscribers to the monthly "residential" e-newsletter, (2) 800 to the "business" e-newsletter distributed every other month and (3) 750 to the "energy professional" e-newsletter distributed periodically when the Program extends offers to that target market.

In PY15, the Program will continue to develop and implement a robust email marketing system to support Program communications. The Program will work to maintain and increase the number of email subscribers; better integrate/share email marketing communications via web and social media; and maintain high open rates of over 30%.

Additionally, the Program will work to increase its email subscribers by 10 - 15% for the "residential" and "business" e-newsletters. Additionally, the Program will collaborate with the Clean Energy Ally Specialist and the Business Program team to increase subscribers to the "energy professionals" e-newsletter by 5 - 10%, which by its nature is a niche audience.

For PY15, the Program will maintain the frequency of its email distribution. The "residential" e-newsletter will continue to be a monthly distribution and the "business" e-newsletter will remain a bi-monthly distribution. The "energy professionals" e-newsletter will continue to be on a periodic basis depending on Program offerings and promotions developed.

2.5.7 *Co-Op Advertising with Clean Energy Allies*

Cooperative ("co-op") advertising is a mechanism by which Hawaii Energy contributes some funds to the advertising costs of Allies, provided Allies comply with certain specific approved messaging and logo inclusion rules, as well as request pre-approval from and allow preview rights to Marcom.

Co-op advertising is a cost-effective way for the Program to collaborate with our Allies, increase our brand awareness and maximize our marketing budget. The Program launched co-op advertising to residential solar water heating participating contractors in the second quarter of PY13 and had a slow start. However, contractor participation to date in PY14 significantly increased by 50% with approximately 66% of the $25,000 budget earmarked and 8 contractors participating. In PY14, the Hawaii Energy co-op cap per contractor is $3,000 for up to 50% of the cost of the ad(s).

For PY15, the Program will continue to offer co-op advertising to residential solar water heating residential contractors and adjust the co-op cap in consultation with the Residential team, as needed. Additionally, the Program anticipates expanding the offer to all Clean Energy Allies with an increased overall budget but a lower monetary cap to allow Clean Energy Allies to participate.

2.5.8 *Marketing Collateral*

To support all Marcom and Program objectives, as appropriate for the audience, the Program will continue to:

- Maintain, update and expand a collateral system to support the residential, business and transformational programs. This can include, but is not limited to, brochure development, rack cards, flyers, one-sheets and posters.

- Ensure that important information and messaging are written and organized in an easy-to-understand manner for the audience whether they are general population customers, strategic partners or Clean Energy Allies.
- Highlight the businesses and organizations that have participated and been helped by the Program through the development of case studies/testimonials.

2.5.9 *Direct Mail*

Direct mail to geographically-targeted areas is a new channel that the Program will further explore in PY15. In PY14, the Program utilized current data and customer information to strategically promote our solar water heating offer. The direct mail piece was sent to approximately 50,000 residents across all three counties. Market segmentation included households that: 1) are larger than 700 sq. ft., 2) consume more than 700 kWh/month over the last 12 months, and 3) have never participated in the solar water heating rebate.

In PY15, the Program will consider implementing additional targeted direct mail and other integrated marketing efforts to promote various rebates and energy efficiency measures to businesses and residential customers, when applicable. In addition, the Program will continue to work with Hawaiian Electric to distribute targeted messaging and inserts through the electric company's business and residential monthly bills across the counties. For any offering promoted via direct mail, the Program will track and analyze the effectiveness of customers' interest and/or participation by assigning specific website addresses or codes in the direct mail as the call-to-action.

2.5.10 *Public Relations*

Public relations ("PR") is the strategic communication process that fosters mutually beneficial relationships between organizations and the general public. The news media is the primary medium to shape, articulate and amplify a particular message or issue. Unlike paid-for advertising, news coverage is "earned" rather than purchased and validated by a third-party (i.e., the media), which enhances its credibility.

2.5.10.1 Media Relations

Hawaii Energy will continue to secure local news coverage throughout the State, as well as "third-party endorsements" (e.g., testimonials or positive, endorsing statements) from community leaders and key stakeholders. The volume of earned media coverage may vary month-to-month based on the nature of the program's announcements and pitches, as well as competing breaking news stories.

Local media outreach will include the following:

- Mass print media (e.g., Honolulu Star-Advertiser, Pacific Business News, Midweek, Hawaii Business Magazine and numerous neighbor island newspapers)
- Mass broadcast (e.g., KHON, Hawaii News Now, KITV, Hawaii Public Radio, FM & AM radio)
- Trade publications (e.g., Building Industry Hawaii, Hawaii Hospitality)
- Community and professional organizations (e.g., via newsletters, emails, presentations and/or collateral distribution)
- Online media (e.g., local blogs, local community-minded websites)

Media training will continue for staff and subcontractors as needed to ensure Hawaii Energy's messaging is clear and consistent when reported on by the news media. In addition, the Program will work with select Hawaii Energy staff members to develop "personal interest" stories aimed at featuring their background and community involvement as an additional tactic to secure media coverage for the Program where appropriate.

As of PY14 third quarter, media coverage for the Program had a reach of more than 9.4 million with an estimated publicity value of over $168,000. The estimated reach of the media coverage was calculated by multiplying the circulation/audience figures of each media by three, which is a generally-accepted calculation method within the public relations industry. Publicity value is calculated by multiplying the advertising value equivalency by three, which is a factor generally accepted by the marketing industry. Advertising value equivalency is what the editorial coverage would cost if it were advertising space (print publications) or on-air time (television and radio).

For PY15, Hawaii Energy's goal is to secure two to five media stories per month and increase advertising value of the media coverage for the overall program year by 15%. Since earned media coverage is a third-party opinion, the impact is considered

three times that of a paid advertisement. Therefore, the program's reported advertising value is multiplied by three, which is a widely-accepted metric in the PR industry. Advertising values of media coverage are summarized in annual reports.

2.5.10.2 Program Positioning

For PY15, Hawaii Energy will identify 6 to 8 opportunities to coordinate informational presentations to introduce/reintroduce the Program to and influence energy efficiency decision-makers and buyers including the "hard-to-reach" segments to increase participation in Program offerings.

This will include leveraging existing relationships with government agencies, community service organizations as well as maximizing the Program's potential sponsorships with entities such as the Chamber of Commerce of Hawaii. Additional organizations will include, but are not limited to the following: energy industry professionals, business groups, AOAOs and large employers.

As discussed earlier, PR is one of the key complementary components to maximize success of the marketing plan. PR will reinforce Hawaii Energy's unique attributes and benefits for electric utility customers. There will be a sustained effort throughout PY15 to support Hawaii Energy staff and/or key subcontractors with presentation training, community outreach preparation and event coordination as needed.

3.0 TRANSFORMATIONAL ACTIONS

3.1 Overview

Market Transformation seeks to identify, assess and help overcome market barriers that inhibit residents and businesses from adopting energy-efficient technologies and practices. Projects areas include:

- **Behavioral modification** initiatives targeted to specific audiences
- **Professional development** for energy salespeople, teachers, and others who can influence decision making
- **Technical training** for people who buy or operate equipment
- **Energy in decision-making** support for large energy users to develop comprehensive energy management strategies incorporated in business practices

Projects are delivered through established programs that have proven successful over time and new initiatives. Established offerings are continually evaluated for opportunities to improve and expand. New initiatives include research to identify market leverage points and pilot projects to find scalable solutions. The goal of the Transformational program is to effect large scale change that saves energy over a three to five year time horizon.

3.2 Key Objectives

The key objectives of the Transformational programs are to:

- Leverage the work of others in the community to reach across all islands and ratepayers
- Implement projects that will reduce energy consumption in the state within a five year period
- Leverage resources to support the development of self-sustaining efforts
- Build on successes and lessons learned in past program years
- Support the development of a robust Clean Energy Ally Program to leverage energy industry professionals to multiply energy efficiency projects
- Develop programs that support institutional change for energy efficiency that include strategic energy management, codes and standards, benchmarking, and renewables integration
- Pilot new projects that can lead to scalable programs with measurable savings
- Develop outcomes-based logic models and evaluation metrics to better measure progress, inform program design, and ensure savings potential is maximized

3.3 Behavior Modification

Behavior modification programs aim to help people make daily decisions that reduce energy use. These efforts require a range of efforts and dynamic programs in order to reach this diverse target market. For PY15 we will continue to focus on the foundation of energy literacy and strive to reach the mass market as well as "hard-to-reach" residents in underserved communities in Hawaii, Honolulu and Maui counties.

We will also build on efforts to better quantify savings such as through Community-Based Social Marketing pilot projects that target specific, high impact behavior changes. The Program will use knowledge gained from our PY14 pilots and intelligence gathered from research on technology and best practices to demonstrate the effectiveness of behavioral change.

The following outlines the PY15 portfolio of Behavior Modification offerings planned:

- *"Sharing the Aloha" Community Workshops* – This workshop blends financial and energy literacy to connect energy-related behavior and choices to one's electric bill. Workshops will target community organizations, housing and condo associations and government housing agencies that can provide access to a large number of residential customers (e.g. municipalities, hotels, etc.).

- *Creation and Distribution of Transformative Messaging*
  Hawaii Energy will continue with its communications campaign to increase the availability of energy-saving information using culturally-relevant images, videos, phrases, etc., that is spread via the Internet and in creative and often humorous ways. Content will start discussions and promote existing residential offers. We will also track the effectiveness of the messaging in increasing participation in rebate programs.

  Hawaii Energy will promote energy saving competitions (e.g. gamification) for local businesses and community groups. These have proven successful in teaching and promoting energy-saving behaviors, multiplying Hawaii Energy's reach and local workforce understanding of the importance of energy efficiency.

- *Community Based Social Marketing (CBSM)*
  Building on research that was launched in PY14, the CBSM program will target specific energy efficiency behavior changes in the Association of Apartment Owners (AOAO) condo market. The work will pilot behavior change projects and also build local capacity to implement data driven, outcomes-oriented behavior modification programs.

  We will continue to develop Hawaii Pacific University's (HPU) Energy Ambassadors pilot program and build on PY14 work to engage office occupants in specific behavior modification programs and develop a resource kit for CBSM implementation at Hawaii colleges and universities.

- *Community Education Support* – Support collaborative efforts to raise awareness and educate the community about energy efficiency
    - Continue to sponsor the University of Hawaii's Annual Sustainability in Higher Education Summit, which has been a catalyst for improving energy efficiency policy, education and awareness throughout the UH System as well as other institutions of higher education.
    - Continue to sponsor the ongoing work of Hawaii Green Growth (HGG) in the development of the online dashboard with statewide energy metrics. We will provide technical expertise on the Sustainability Measures Project, and collaborate with HGG Working Group members keeping energy efficiency at the forefront of the discussion.

- *Market Research* – The Program will work with a cross disciplinary team of faculty at the University of Hawaii to develop a methodology to test various time-of-use rate structures to drive behavior change. This is to assist the utilities in filling the daytime PV load depression and control the nighttime peak loads.

- *Smart Grid* – Build upon the lessons learned from PY14 in order to enhance Home-Area-Network (HAN) implementation of the smart grid benefits to customers and the utility. The actions will include:
    - Developing meaningful follow-up actions to our current pilots, and potentially enhanced with Home Energy Management System (HEMS) applications such as smart thermostat, smart plug, water heater controller, and photovoltaic sub-meter for EE and load shifting opportunities.
    - Engaging current pilot participants with EE messaging and 15-min interval energy feedback to demonstrate the concept of Time-of-Use (TOU).
    - Evaluating the initial Smart Grid Phase 0 participants on near real-time energy use and Hawaii Energy program participation; and
    - Evaluating the effects of the HEMS applications, In-Home Display (IHD), Mobile Apps monitor in producing behavioral changes that could result in energy-savings.

- *Shift for Savings Plan*
  In response to the lesson learned that "demand response" (DR) and "load control" have negative connotations associated with the terms, Hawaii Energy will refer to these programs in a more customer-friendly ways such as "Shift for Savings Plan." We will build on our PY14 pilots and research to enhance certain current CBEEM and BESM program offers to include a requirement for load control. Our team will use knowledge gained by our two PY14 water heating load shifting projects to inform the CBEEM and BESM program design.

  We have committed to a demand response initiative for a new construction project consisting of 499 rental apartments, each with electric water heating. This is in support of efforts by Shifted Energy, HECO and the developer to coordinate the install of grid interactive water heaters.

- *Electric Vehicle Support* – The Program will upgrade its new electric vehicle owner energy-saving kit offer to online fulfillment in PY15. Additionally, the Program will continue broad support for EVs. For example, in an effort to raise awareness, Hawaii Energy will incorporate Electric Vehicle (EV) messaging throughout the program and provide marketing and communications support. The Program will also continue supporting various DBEDT and Blue Planet-sponsored EV awareness activities to include participation in EV Partnership meetings, outreach events and providing information as well as other promotional items.

3.4 Professional Development

Professional development is aimed at people in positions to influence energy decisions in the home and in businesses.

3.4.1 *K-12 Educator Training and Development*

The coming year will focus on a refinement of the K-12 teacher professional development to offer a phased approach that provides opportunities for teachers to continually engage with energy efficiency, develop their energy literacy and curriculum, and support students and their families to practice energy-saving behaviors in the school and at home. The Program will focus on deepening ongoing relationships with teachers who commit to being leaders in energy efficiency. Particular attention will be given to engaging with parents through Energy Expos and connecting them to Hawaii Energy resources such as the "Dare-to-Compare" tool. Hawaii Energy's Teacher Advisory Board (TAB) will continue to provide feedback on the program (e.g. curriculum and materials) and pilot the new phased approach.

3.4.2 *Facility Management Degree Program*

In fall 2015 the University of Hawaii West Oahu, in collaboration with the International Facility Management Association of Hawaii, will officially launch their four year degree in Facility Management to meet the rising demand for skilled professionals in the field. Hawaii Energy plans to continue to support this initiative with funding as well as technical and industry expertise.

3.4.3 *Energy Efficiency Sales and Financial Analysis of Energy Projects Training*

PY15 will see the continuation of training for energy professionals to be effective at getting projects approved. This program year we will produce tools, templates, and case studies to support market penetration of effective sales techniques. We will also develop targeted offerings for specific market segments such as the AOAO market, universities, and executive level business leaders. This program emphasizes contractor engagement with Hawaii Energy's Clean Energy Ally program.

3.4.4 *Hawaii Energy Fellowship Program*

Program modification will focus on the reduction of management costs and expanded intern assignment scope to offer higher level work products that assist with the growth of innovative Transformational offerings in PY15. We plan to move to a more customized internship program with peer-to-peer mentorship that provides fellows with increasing leadership responsibilities. This will lay the foundation for future expanded reach and impact at a reduced Program cost.

3.5 Technical Training

Technical Training is focused on people who buy or operate equipment such as engineers, facility managers, architects, building operators, and energy managers. These professionals have typically had experience in infrastructure and energy for a substantial portion of their career, but may need to enhance their technical skills.

3.5.1 *Facilities Management Training*

The Program will continue to offer training for existing facilities staff, managers and technicians to support their role in implementing energy efficiency upgrades. This will include technical training workshops on HVAC, lighting, pumps, motors, etc. to be promoted throughout the year. We will also facilitate and support strategic planning to ensure that Hawaii's various offerings related to facilities management and energy efficiency are coordinated including: the Bachelor of Applied Science (B.A.S.) degree program in Facilities Management at the University of Hawaii – West Oahu (UHWO), UH Maui College Sustainable Living Institute of Maui (SLIM) and other partners.

3.5.2 *Building Operator Certifications (BOC®)*

Building Operator Certification Level I and Level II training sessions with University of Hawaii's Manoa Outreach College and Maui College's Sustainable Living Institute of Maui (SLIM) program will be supported. The Program also plans to expand this offering to include Hawaii County for the first time.

3.5.3 *Water/Wastewater*

The Program will continue to sponsor efficiency and conservation education for entry-level water and wastewater operators through the SLIM program. Hawaii Energy will continue to work with groups such as the Rural Community Assistance Corporation and the Hawaii Rural Water Association to offer trainings, outreach, networking, and project identification.

3.5.4 *Support Business and Residential Program Offerings*

Develop additional trainings as time and budget allows that support the development of technical expertise to increase adoption of business and residential programs.

3.6 Energy in Decision Making

3.6.1 *Strategic Energy Management (SEM)*

The Program will introduce the processes of SEM and develop a set of tools and resources to assist large institutions to comprehensively plan for effective energy management as a critical part of their business decision making and exponentially increase the number and effectiveness of energy efficiency projects that are considered as part of the strategic vision and plan of the organization rather than a specific isolated project. This approach will lead to deeper and more meaningful energy efficiency throughout the organization.

- Hawaii Energy plans to assist in the development of a long-term Strategic Energy Plan with the University of Hawaii to improve energy management and educate faculty, staff and students in energy efficiency and conservation practices.

3.6.2 *Codes and Standards*

Hawaii Energy will continue to work with the State Building Codes Council (SBCC) to adopt IECC 2015 with Hawaii amendments. Utilizing the codes compliance report we completed in PY2014, we will inform the industry of current strengths and challenges in energy code compliance. Hawaii Energy will be a resource to help permit reviewers and building designers understand and comply with Hawaii's energy codes and standards. Next steps include providing a summary report and action items to county building officials, DBEDT, and other professionals as well as offering practical and specific training on the latest adopted energy code.

3.6.3 *Benchmarking*

The Program will continue in-house efforts to benchmark facilities and business sectors in PY15, with a goal of 150 new locations. We will identify, by sector, facilities with above-average energy use intensities (EUI) and present them with a team approach to evaluate their consumption, identify energy-saving opportunities and provide technical assistance and incentives that will remove barriers to the successful implementation of these energy conservation measures. The new locations, along with the 500+ previously benchmarked locations from PY14, will also be a valuable resource for direct targeting of residential apartment buildings through our Multifamily Direct Install program.

4.0 RESIDENTIAL PROGRAM STRATEGY & DETAILS

4.1 Overview

For PY15, Hawaii Energy will maintain the following incentive categories:

- *Residential Energy Efficiency Measures (REEM)* – This incentive category is the core of Hawaii Energy's residential portfolio and undergoes incremental developments responding to market conditions (i.e. retail pricing) and consumer need.
- *Custom Energy Solutions for the Home (CESH)* – This incentive category provides a measure of flexibility within the prescriptive portfolio to accommodate unforeseen market opportunities. The budget and unit cost targets provide financial efficacy guidance to the Program and allies who champion these opportunities.
- *Residential Energy Services & Maintenance (RESM)* - This incentive category targets ally-driven service offerings to enhance energy savings persistence and bootstrap fledgling energy services businesses trying to secure a toehold in Hawaii.
- *Residential Hard-to-Reach (RHTR)* – This incentive category will seek to secure various projects among geographies and demographics that have been traditionally underserved. Efforts in PY15 will continue to address the landlord/tenant barrier through direct installation of home energy saving kits and heat pump water heaters.

A summary listing of the updated Residential Program offerings can be found in the table below followed by a brief summary of additions and changes. A detailed description of the Residential Program offerings follows in section 4.1 through 4.5. Appendix B contains a projection of potential energy savings for the planned programs.

Figure 4: List of Residential Programs

Residential Programs
REEM
High Efficiency Water Heating
High Efficiency Lighting
High Efficiency Air Conditioning
High Efficiency Appliances
Energy Efficiency Equipment Grants
Energy Awareness, Measurement and Control Systems
CESH
Customized Project Measures
RESM
Residential System Tune-Ups
RHTR
Energy Efficiency Equipment Grants
Direct Installation - Residential Energy Kits

4.1.1 *New Program Offerings of Residential Energy Efficiency Measures (REEM)*

4.1.1.1 High Efficiency Water Heating

- *Solar Water Heating* - During PY15, the solar water heating (SWH) program budget will see a reduction in total unit count to 1,450 as well as a reduced rebate amount of $750. These modifications are required given a SWH market penetration of over 45% of eligible residences, increased sales of PV-direct water heaters, PV-only contractors capturing complete rooftops and a shifting baseline due to codes and standards. Most importantly, this is a significant effort to better align the SWH program's cost effectiveness with the overall Program goals.
- *Heat Pump Water Heaters* - In PY15, the Program will focus on heat pump applications in multifamily settings. We will address this market with an increase in the standard incentive for heat pumps from $200 to $300. We will also continue to work with government housing agencies, condominium association boards and property management companies to identify multifamily properties well-suited for Hawaii Energy's Heat Pump Direct Installation Program.

4.1.1.2 High Efficiency Lighting

- *CFL Lighting* - PY15 will see a reduction in the number of CFL bulbs rebated through the residential program. This transition allows the Program to expand incentives available for the growing LED market. Hawaii Energy will also continue PY14 efforts to move away from the larger big box stores and design effective promotions with local retailers who serve a customer base otherwise inclined to stay with incandescent alternatives.
- *LED Lighting* - While not new to the residential portfolio, LEDS are becoming a more predominant energy saving lighting option for residential consumers. The Program closely follows availability (rising) and pricing (decreasing) in order to maintain adequate incentive levels. The PY15 plan includes 781,000 LED rebates, an increase of 260% from the PY14 plan. The Program is also reducing the average dollar value per LED rebate to $3.75 in order to properly align with lower market prices. Qualified LED technologies will continue to expand in the coming year and the Program's educational marketing efforts will be matched accordingly to ensure customers are well informed to make the appropriate purchase choice to meet their needs.

4.1.1.3 Energy Efficiency Equipment Grants

- *Online Marketplace* – Hawaii Energy will expand the provision of energy-saving devices through our online store launched in PY14. During PY15 we will incorporate additional web-based marketplace services for customers. We plan to include a customized user experience with product education and purchase options for lower cost energy-saving devices not as readily available in local retail locations. The online marketplace will have savings calculators addressing specific customer characteristics. This will result in customized suggestions for applicable energy-efficient technologies. Customers will then be able to take advantage of instant rebates for the purchase of products like advanced power strips, small appliance timers and occupancy sensors, which will be shipped to their door.

4.1.1.4 Energy Awareness, Measurement and Control Systems

- *Peer Group Comparison* – Hawaii Energy will nearly double the Peer Group Comparison program in PY15 to reach an additional 110,000 households. Over the last four years, this program has grown tremendously due to its effectiveness in motivating behavioral responses surrounding energy use in the home. Home Energy Reports are easily recognized and often commented on by utility customers. Customers receive additional insight into how their usage compares to similar households and the reports provide energy-saving tips while promoting available Hawaii Energy rebates. This program maintains a lower opt-out rate than most other similar initiatives nationwide. In PY14, we utilized more data-driven market segmentation to develop customized messages to customers. We will continue these enhancements in PY15 to include more dynamic messaging based on customer usage profiles. Messages will encourage sign-ups for email-based Home Energy Reports and the use of online web portal tools to track energy-saving progress. This expansion aligns well with the Leidos-created "Dare-to-Compare" tools available at HawaiiEnergy.com.

- *Whole House Energy Management Systems and In Home Displays* – While not new to the residential portfolio, the market approach to promoting whole house offers will evolve. Specifically, Hawaii Energy will use lessons learned from PY14 pilot projects and data from industry working groups to qualify technologies. We will also explore targeting specific high-use households to consider this measure.

- *Small Appliance Timers* – Building on the PY14 water cooler timer program, Hawaii Energy will expand the offering to encourage the use of timers on small household appliances and items such as bathroom exhaust fans and bedroom lighting. This will be accompanied by educational outreach and marketing surrounding plug load management within the home.

4.1.2 *New Program Offerings of Custom Energy Solutions for the Home (CESH)*

Customized Project Measures

- *Green Neighborhood Program* – We will continue to support the implementation of the Green Neighborhood Program direct install efforts in Moanalua and Pearl City neighborhoods. This project was originally awarded funding as part of the PY14 Energy Efficiency Auction but faced constraints in execution within the original one-year timeline. PY15 will target 1,800 homes for the direct installation of high efficiency showerheads, faucet aerators, advanced power strips and CFLs, with an added effort to address water heating insulation, air conditioning filters and refrigerator coil cleaning. These efforts also include a comprehensive marketing strategy to enroll residents during an outreach and education campaign in their neighborhood.
- *Custom Lighting Program* - PY15 includes $200,000 for custom lighting incentives. LED technologies have improved significantly in the past few years and the Program is now well positioned to encourage the replacement of lamps not previously addressed by the more traditional upstream lighting market. This new program will allow Hawaii Energy to specifically target the existing energy saving potential in specialty interior and linear fluorescent lamps found in the residential sector. By leveraging our existing Clean Energy Ally Program relationships we can better identify and penetrate the appropriate market segment. We will also apply lessons learned from the commercial custom lighting and SBDIL programs to further remove any barriers associated with custom lamp and fixture functionality.
- *Custom Residential Hard to Reach Efficiency Measures*- In PY15 we have allocated $300,000 in funding to a Custom Residential Hard-To-Reach program. Participants will be identified and recruited based on their participation in past and existing Transformational programs like Sharing the Aloha and NEED.org. Rooted in a whole-home performance approach, this program is designed to convert Hawaii Energy's workshop attendees to active energy-saving program participants. We will utilize the Program's existing online tools to rank neighborhood energy usage and then analyze efficiency measures suitable to specific residences on a case-by-case basis. Customers will receive custom offers to participate in unique program offerings. Hawaii Energy will then measure energy usage to track and report on energy saving progress.

4.1.3 *New Program Offerings of Residential Energy Services and Maintenance (RESM)*

Residential System Tune-Ups

Central Air Conditioning Retrofit Pilot – This initiative will look at the effectiveness of replacing mid-life central air conditioning systems. The pilot will target single-family homes (generally 15-20 years of age) with central air conditioning that are ready to purchase a replacement system. The typical target home type will be equipped with central air conditioning units with EER of 10.0. The retrofit will consist of upgrading the primary unit to one with a higher EER of 13.0. These efforts may also require refrigerant upgrades and duct sealing which would result in higher costs for the customer.

4.1.4 *New Program Offerings of Residential Hard-to-Reach (RHTR)*

Energy Efficiency Equipment Grants

- *Direct Install Heat Pump Water Heater (HPWH)* - Hawaii Energy will work with government housing agencies and property management companies to identify ideal multi-family facilities to receive fully-funded heat pump water heaters. We will engage the Clean Energy Allies for the installation work and will build on efforts initiated in PY14 to appropriately address concerns for noise mitigation.

Direct Installation

- *Multi-family Direct Install* – Hawaii Energy is well-positioned to build upon the PY14 Multifamily Direct Install Program and expand the installation of energy-saving technologies like high efficiency showerheads, faucet aerators, advanced power strips and high efficiency light bulbs (CFLs and LEDs) in multifamily residences. In PY15 we will target over 4,000 households to participate in the offering; this includes multifamily properties with individually-metered residential accounts and commercial master-metered accounts. The Program has a strong pipeline of leads and continues to engage property managers and government housing agencies to identify potential participants. We are also engaging additional properties through existing submetering and benchmarking efforts. This multifaceted approach will continue in PY15 as it has proven effective in gaining access to the multifamily market which has historically been slower to participate in existing rebate programs.

4.1.5 *Residential Program Details Table of Contents*

To follow, in Sections 4.2 through 4.5, is an overview summary of Residential Program Offerings followed by detailed descriptions and energy savings. The overall program details are provided on the following page, preceding the individual Program summaries.

Program Category	**4.1 Residential Programs Overview** **Overview of All Categories**
Target Market	• Homeowners, Landlords, Tenants and Property Managers • Manufacturers, Distributors, Dealers and Retailers • Solar Contractors, Plumbing Contractors and General Contractors • Architect and Engineers
Projected Impacts	Demand 11,016 kW Energy 60,490,414 kWh Incentive Budget $10,557,940 Cost per kWh $0.17 /kWh TRB $71,287,622
Technologies	**Incentivized Measures** — **Incentive Forecast** **Residential Energy Efficiency Measures** $8,614,690 (37%) **Custom Energy Solutions for the Home** $1,011,000 (4%) **Residential Energy Services & Maintenance** $250,000 (1%) **Residential Hard-to-Reach** $682,250 (3%) $10,557,940 (45%) • Solar Water Heating – Contractor Incentive $750 • Solar Water Heater Interest Buy Down $750 • Solar Water Heater – OBF contribution* $750 • Heat Pumps* $300 • CFLs $1.10 • LED* $3.75 • VRF Split System AC $200 • Window AC with Recycling $80 • Ceiling Fans – Under $80 Fans for HTR Households w/lights $35 • Solar Attic Fans $50 • Whole House Fans $75 • Refrigerator (Purchase only <$750) $50 • Refrigerator (with Recycling of Old) $100 • Garage Refrigerator/Freezer Bounty $85 • Pool VFD Controller Pumps $150 • Smart Strips $18 • Online Marketplace: Home Energy-Saving Kits - Advanced (Copay)* $30 • Online Marketplace: Home Energy Saving Kits - Standard (Free)* $20 • Room Occupancy Sensors & Timers $8 • Peer Group Comparison – Phase 1/2/3 $9.02/HH • Peer Group Comparison – Phase 4* $9.02/HH • Home Energy Metering Systems (HEMS) $100 • Water Cooler Timers – HOD Distribution $15

Program Category	4.1 Residential Programs Overview Overview of All Categories
	• Small Appliance/Lighting/Bathroom Fan – Timers* $5 • In Home Display – Co-incentive with Appliances/Direct Install* $100 • Direct Install – Green Neighborhood Program Carry Over* $0.32 • Custom Residential Lighting Efficiency Measures* $0.19 • Custom Residential Hard to Reach Efficiency Measures* $0.29 • Solar Water Heater Tune-Up $150 • Central Air Conditioning Retrofit Pilot* $1,000 • Refrigerator (with Recycling of Old) – Lanai and Molokai Equity $250 • Direct Install – Solar Water Heater (SWH) $9,000 • Direct Install – Heat Pump Water Heater (HPWH)* $2,500 • Multi-Family Direct Install – Energy-Saving Kits* $129/unit *New or expanded measures

4.2 Residential Energy Efficiency Measures (REEM)

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.1 High Efficiency Water Heating**
Target Market	• Homeowners, Landlords, Tenant, and Property Managers • Manufacturers, Distributors, Dealer, and Retailers • Solar Contractors, Plumbing Contractors, and General Contractors • Architect and Engineers
Impacts	Demand 749 kW Energy 3,916,128 kWh Incentive Budget $1,359,000 Cost per kWh $0.35 /kWh TRB $8,327,034
Technologies	**Incentive** / **Units** Solar Water Heater (SWH) Incentive $750 1,052 Solar Water Heater Interest Buy-Down $750 50 Solar Water Heater OBF Contribution $750 350 Heat Pumps $300 900 (The following Water Heating Systems budgets are included in the plan under the RHTR-Energy Efficiency Equipment Grants. See section 4.5.1) • Direct Install – Solar Water Heater (SWH) $9,000 24 • Direct Install- Heat Pump Water Heater (HPWH) $2,500 100 **Total Water Heating Systems $1,825,000**
Market Barriers	**General** • Large up-front cost • Strong demand for PV / low awareness of cost-effective SWH • Trust and credibility of technology providers • Quality of system design, equipment and installation • Operational knowledge and maintenances of technologies **Owner-Occupant** • Access to and/or understanding of financial options • Time between purchase and tax refunds (carrying cost) **Landlords and Property Managers** • May not pay for electricity cost • Reluctance to invest without a financial return • Short term investment **Renters and Lessees** • Do not have the authority or responsibility for the hot water system • Renter lease term shorter than simple payback

Program Category	4.2 Residential Energy Efficiency Measures 4.2.1 High Efficiency Water Heating
Description & Implementation Strategies	**Solar Water Heating** *Solar Water Heater (SWH) Incentive* In PY15, the Program will provide a $750 rebate for solar hot water systems installed by qualified participating contractors. The process will be further streamlined from previous years but will generally include the following: • Customers contact a contractor from a list of participating contractors on Hawaii Energy's website. • Contractor comes to the home, reviews site conditions, interviews the customer to analyze hot water usage then provides a written proposal for a complete installation; Contractor's proposed sale price reflects the inclusion of the $750 rebate. • Contractor fills out the Program's worksheets and sizing forms. • Contractor provides rebate form and helps customer to fill it out. • Contractor provides Hawaii Energy with building permit number. • Contractor installs solar water heating system. • Contractor reviews system operation and maintenance with customer. • Hawaii Energy will conduct a small sample of post-installation inspections. *Solar Water Heater Interest Buy-Down* The Program works with participating lending institution 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. This incentive will cover the loan interest up to a total maximum of $750. The process includes: • The customer contacts a participating lender from a list of participating lenders on Hawaii Energy's website. • The customer enters into a financing agreement with the lender that indicates the sale price, loan amount, interest component and the Hawaii Energy Incentive. • The customer works with a participating contractor to complete the standard installation process.

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.1 High Efficiency Water Heating**
Description & Implementation Strategies (continued)	*SWH Incentive – OBF Contribution* For PY15, Hawaii Energy has allocated funding specifically for solar hot water systems installed through the upcoming Bill $aver (On-Bill Financing) program. The customer will work with the contractor to determine eligibility for the program. Once approved, these systems will be installed in accordance with the specifications for the standard incentives. **Heat Pump Water Heaters** For PY15, Residential heat pump rebates will be available at an increased value of $300. Rebate applications for water heaters are provided by the retailers at the time of purchase or a customer can visit our website and download the form. Rebate applications must include an original purchase receipt showing brand and model number. Promotional efforts will focus on heat pump applications in multifamily settings. **Implementation With Clean Energy Allies** The Program will conduct outreach with key allies including the Solar Technical Advisory Group, solar contractors, suppliers, government and housing agencies; financial institutions; and housing, apartment, and contractor associations. This team will promote the program, solicit feedback for more efficient program operation, and identify opportunities for implementation and coordination of efforts.
Key Changes	• Improved Program cost-effectiveness: - Reduction in SWH incentive from $1,000 to $750 - Reduction in SWH inspection requirements • Cooperative marketing funds for solar contractors and lenders • Increased heat pump water heater rebates from $200 to $300 • Focus on heat pump applications in multifamily settings
Marketing Strategies	• Comprehensive marketing initiative including online, print, TV and radio advertising • Customer billing data analysis for market segmentation and targeting • Direct contact with participating solar contractors • Community event promotion of High Efficiency Water Heating • Listing of participating contractors and solar water heating resources on our website

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.2 High Efficiency Lighting**
Target Market	• Homeowners, Landlords, Tenants, and Property Managers • Manufacturers, Distributors, Dealers, and Retailers
Impacts	Demand 4,663 kW Energy 33,011,880 kWh Incentive Budget $3,918,859 Cost per kWh $0.12 /kWh TRB $44,639,246
Technologies	**Incentive** **Units** CFLs $1.10 900,000 LED $3.75 781,029
Market Barriers	**General** • Lack of understanding about how energy is used in the home • Disposal concerns • 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 **Owner Occupant** • Ability to self-install • Ability to find appropriate bulb for fixture or ceiling fan • Disposal concerns • May not pay for electricity cost (condominiums) **Landlords and Property Managers** • No control over the hours used for lighting • May not pay for electricity cost • Reluctance to invest without a financial return • Short term investment **Renters and Lessees** • Do not have the authority or responsibility for the lighting fixtures • May not pay for electricity

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.2 High Efficiency Lighting**
Description & Implementation Strategies	The CFL and LED rebates are offered through manufacturer direct incentives which are provided as point of sale cost reductions. The process includes: • Distributors, retailers and manufacturers complete a program application in which they commit to advertising and promotion for instant rebates for the CFL and 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. **Implementation with Clean Energy Allies** The program is implemented through strong working relationships between the program, the major CFL/LED manufacturers and the national retailers. The participating CFL manufacturers are: GE, FEIT, Sylvania, Westinghouse, TCP and Philips. The participating LED manufacturers are: Cree, Feit, Philips, GE, and Lighting Science Group. Participating retailers include: City Mill, Costco, Don Quijote, Foodland, Home Depot, Longs Drugs/CVS, Safeway, Sam's Club, Times and Wal-Mart who have all utilized their buying power to offer a better blend of quality, affordable CFLs and LEDs across the State.
Key Changes	• Increased unit numbers and reduced incentive levels for LEDs to reflect market changes • CFL program focus shifting from big box stores to smaller local retailers
Marketing Strategies	• Significant focus on merchandising, including more requirements for in-store signage featuring Hawaii Energy brand and incentive amounts • Educational information online and in the media to inform customers on best practices for purchasing CFLs and LEDs • Advertisements to explain how to select a CFL or LED • Leverage allies to share CFL information and increase participation • Encourage an increase in selection of CFLs available • Promotion via social media

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.3 High Efficiency Air Conditioning**
Target Market	• Homeowners, Landlords, Tenants and Property Managers • Manufacturers, Distributors, Dealers and Retailers • HVAC and General Contractors • Architect and Engineers
Impacts	Demand 537 kW Energy 1,267,325 kWh Incentive Budget $331,250 Cost per kWh $0.26 /kWh TRB $3,939,842
Technologies	**Incentive** / **Units** VRF Split System AC $200 1,000 Window AC with Recycling $80 500 Ceiling Fans - Under $80 Fans $35 1,000 Solar Attic Fans $50 300 Whole House Fans $75 550
Market Barriers	**General** • Lack of understanding of how energy is used in the home • Lack of information about product energy efficiency • Lack of understanding as to which are the most effective ways to reduce energy consumption **Owner Occupant** • Inability to self-install • Existing air conditioning opening prevents the proper selection for energy savings • Homeowner association rules **Landlords and Property Managers** • No control over the hours that tenant/units use air conditioning • May not pay for electricity cost • Reluctance to invest without a financial return **Renters and Lessees** • Do not have the authority or responsibility for the HVAC system • May not pay for electricity

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.3 High Efficiency Air Conditioning**
Description & Implementation Strategies	The Program will continue to provide prescriptive incentives to residential customers who purchase and install energy efficiency measures that meet or exceed ENERGY STAR® standards. The process includes: • The customer purchases a qualified high-efficiency air conditioner, ceiling fan, solar attic fan or whole house fan. • The customer obtains an application through the Program's website, in hard copy from Hawaii Energy, or through point of sale retailer displays. • Customers participating in the Window AC Trade-Up program must call Hawaii Energy for pick-up and recycling of their old working units. **Implementation with Clean Energy Allies** 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 when qualifying technologies to be incentivized.
Key Changes	• Ceiling fan rebates will be targeted specifically for models with high efficiency lighting kits • The Program will continue to encourage variable refrigerant flow (VRF) inverter split system units with additional input from manufacturers and local distributors
Marketing Strategies	• Provide cost of ownership information on rebate application forms • Provide more information on the website explaining how to properly use HVAC systems • Advertise to explain how to select an HVAC system • Find organizations to assist with HVAC outreach • Promotion via social media

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.4 High Efficiency Appliances**
Target Market	• Homeowners, Landlords, Tenants, and Property Managers • Manufacturers, Distributors, Dealers and Retailers • Wholesalers and General Contractors • Architect and Engineers
Impacts	Demand 158 kW Energy 3,792,803 kWh Incentive Budget $539,000 Cost per kWh $0.14 /kWh TRB $4,902,517
Technologies	**Incentive** / **Units** Refrigerator (Purchase only, <$750) $50 300 Refrigerator with Recycling $100 4,000 Garage Refrigerator/Freezer Bounty $85 1,000 Pool VFD Controller Pumps $150 200 Smart Strips $18 500
Market Barriers	**General** • Lack of understanding of how energy is used in the home • Lack of information about energy efficient products • Lack of understanding as to which are the most effective ways to reduce energy consumption • Lack of understanding of the importance of size and operation for energy savings • Large up-front cost **Owner Occupant** • Ability to self-install • Homeowner association rules • Availability of product when needed **Landlords and Property Managers** • No control over the hours of use • May not pay for electricity cost • Reluctance to invest without a financial return • Short term investment **Renters and Lessees** • Do not have the authority or responsibility for the appliances • May not pay for electricity

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.4 High Efficiency Appliances**
Description & Implementation Strategies	The program will continue to provide prescriptive incentives to residential customers who purchase and install energy efficiency measures that meet or exceed ENERGY STAR® standards. The process includes: • The customer purchases a qualified high efficiency appliance. • The customer obtains an application through the program's website, in hard copy from Hawaii Energy, or through point of sale retailer displays. **Implementation** We will continue to build relationships with manufacturers, distributors and dealers through store visits where we 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 leverage the relationships that were created with retailers across the State through the Trade Up for Cool Cash offering.
Key Changes	• Removal of legacy clothes washer rebate offering • Continue to improve quality control and reporting of recyclers • Increase price cap for ENERGY STAR® refrigerator (purchase new only) rebates to $750 to appropriately reflect market trends • Identify additional distribution methods for Advanced Power Strips
Marketing Strategies	• Provide point of purchase (POP) signage and information supported by quality control (merchandising) • Provide cost of ownership information on rebate application forms • More information on the website explaining good practices on how to use ENERGY STAR® appliances • Advertising explaining how to select and use appliances for the best energy savings • Identify organizations to assist with appliance outreach • Continue to advertise the Refrigerator/Freezer Bounty offer as the "Rid-A-Fridge" allowing customers the opportunity to donate their rebate directly to the local food bank.

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.5 Energy Efficiency Equipment Grants**
Target Market	**General** • Homeowners, Landlords, Tenants and Property Managers • Manufacturers, Distributors, Dealers and Retailers
Impacts	Demand 1,007 kW Energy 1,774,946 kWh Incentive Budget $226,000 Cost per kWh $0.13/kWh TRB $2,643,389
Technologies	**Incentive** / **Units** Online Marketplace - Home Energy Saving Kits (Copay) $30 2,000 Online Marketplace - Home Energy Saving Kits (Free) $20 8,300
Market Barriers	**General** • Lack of understanding of how energy is used in the home • Awareness of available technologies • Lack of understanding of best application
Description & Implementation Strategies	In PY15 Hawaii Energy will expand its online presence to provide more services for customers. Efforts will include a customized user experience with product information and purchase options for lower cost energy-saving devices both online and in local retail locations. The online marketplace will have savings calculators addressing specific customer characteristics. This will result in customized suggestions for applicable energy-efficient technologies. Customers will then be able to take advantage of instant rebates for the purchase of products like advanced power strips, small appliance timers and occupancy sensors, which will be shipped to their door. **Implementation with Clean Energy Allies** Hawaii Energy will work with Clean Energy Allies and online retailers to provide a more enhanced user experience. Data gathered through the online marketplace will allow greater insight into customer characteristics and support future program targeting.

Program Category	**4.2 Residential Energy Efficiency Measures** **4.2.6 Energy Awareness, Measurement and Control Systems**
Target Market	**General** • Homeowners, Landlords, Tenants and Property Managers • Manufacturers, Distributors, Dealers and Retailers
Impacts	Demand 3,609 kW Energy 11,129,977 kWh Incentive Budget $2,240,581 Cost per kWh $0.20 /kWh TRB $2,704,012
Technologies	**Incentives** / **Units** Room Occupancy Sensor & Timers $8 200 Units Peer Group Comparison- Phase 1/2/3 $9.02 132,500 Homes Peer Group Comparison – Phase 4 $9.02 110,000 Homes Home Energy Management System (HEMS) $100 200 Units HEMS In-Home Display – Co-incentive w/Appliances/Direct Install $100 200 Units Water Cooler Timers – HOD Distribution $15 500 Units Small Appliance/Lighting Timers $5 1,000 Units
Market Barriers	**General** • Lack of understanding of how energy is used in the home • Limited awareness of phantom loads • Unfamiliarity with best application, installation and proper use
Description & Implementation Strategies	**Room Occupancy Sensors & Timers** These sensors control the use of lighting in areas around the home with infrequent use such as laundry, storage, garage or spare areas. They are not intended for high use areas or CFLs. The Program will continue to test distribution methods for room occupancy sensors and timers. We will reflect on lessons learned throughout the PY12-14 upstream implementation and utilize incoming data from the online fulfillment initiative to inform targeting of the offer. **Peer Group Comparison** Hawaii Energy plans to expand the Home Energy Report offer to an additional 110,000 households on Oahu. The program began in the Ewa region on Oahu (which was formerly funded with ARRA) and expanded across the neighbor islands (Hawaii, Maui, Lanai and Molokai) in PY11. It expanded again in PY13 to include multiple zip codes on leeward and windward Oahu. Our strategy will look for ways to affect measurable energy savings through behavior change. The market for peer comparison initiatives is evolving in PY15 to include additional analytical capabilities and geographic targeting. Recipient households will receive specific tips and promotions based on data driven market segmentation efforts. In addition, web portal access will be available to all residential utility account holders (approximately 380,000 households).

	Home Energy Management Systems- In Home Display Hawaii Energy will build on PY14 pilot projects and develop offerings for In-Home Display, smart thermostats and plugs. These devices collect energy data and transmit the information to a display unit which can be carried anywhere throughout the house or viewed via the internet. The Home Energy Management Systems offer will benefit from marketing to high use households, where visibility of how electricity is being used will lead to subsequent investments in energy efficiency. **Water Cooler Timers** Hawaii Energy will provide a limited number of water cooler timers to residential customers identified by existing home and office water delivery (HOD) companies. The Program will target hot/cold water dispensers in order to save the stand-by losses in the cold and hot tanks during times that the systems are not being utilized. Educational videos and instructional guides to setting the timer will be made available to customers receiving timers. **Small Appliance/Lighting Timers** Building on the PY14 water cooler timer program, Hawaii Energy will expand the offering to encourage the use of timers on small household appliances and items such as bathroom exhaust fans and household lighting. Much of this effort will be in conjunction with new residential direct install efforts in the hard-to-reach sector.
Key Changes	• Expansion of Peer Group Comparison to an additional 110,000 households • Opower web portal access will be promoted alongside the Hawaii Energy's "Dare-to-Compare" tools • Research and development of standards for Home Energy Management Systems (HEMS) • Addition of small appliance timer program • Targeting for room occupancy sensor and timer distribution
Marketing Strategies	• Public relations and media opportunities stemming from Home Energy Reports • Three program specific marketing modules to be developed for printed Home Energy Reports • Integration of historical program participation data to Home Energy Report messaging • Collaboration with home delivery water service providers to deliver educational energy efficiency messages for water cooler timer recipients • Promotion of small appliance timer program through direct install efforts

4.3 Custom Energy Solutions for the Home (CESH)

Program Category	**4.3 Custom Energy Solutions for the Home** **4.3.1 Custom Project Measures**
Target Market	• Homeowners, Landlords, Tenants and Property Managers • Manufacturers, Distributors, Dealers and Retailers • Mechanical and Solar Service Contractors
Impacts	Demand - kW Energy 4,081,636 kWh Incentive Budget $1,011,000 Cost per kWh $0.25 /kWh TRB $2,073,161
Technologies	**Incentive** **Units** Direct Install – Green Neighborhood Program Carry Over $0.32/kWh 1,600,000 kWh Custom Residential Lighting Efficiency Measures $0.19/kWh 1,052,632 kWh Custom Residential Hard-to-Reach Efficiency Measures $0.29/kWh 1,034,483 kWh
Market Barriers	Lack of Program's mechanisms to encourage deeper energy savings within residential households.
Description & Implementation Strategies	**Energy Efficiency Auctions Carry Over – Green Neighborhood Program** Hawaii Energy will continue to support the implementation of the Green Neighborhood Program direct install efforts in the Moanalua and Pearl City neighborhoods. PY15 will target 1,800 homes for the direct installation of high efficiency showerheads, faucet aerators, advanced power strips and CFLs, with an added effort to address water heating insulation, air conditioning filters and refrigerator coil cleaning. These efforts also include a comprehensive marketing strategy to enroll residents during an outreach and education campaign in their neighborhood. **Custom Residential Lighting Efficiency Measures** LED technologies have improved significantly in the past few years and the Program is now well positioned to encourage the replacement of lamps not previously addressed by the more traditional upstream lighting market. This new program will allow Hawaii Energy to specifically target the existing energy saving potential in specialty interior and linear fluorescent lamps found in the residential sector. By leveraging our existing Clean Energy Ally Program relationships we can better identify and penetrate the appropriate market segment. We will also apply lessons learned from the commercial custom lighting and SBDIL programs to further remove any barriers associated with custom lamp and fixture functionality.

	Custom Residential Hard-To-Reach Efficiency Measures In PY15, Hawaii Energy will implement a custom program for the residential hard-to-reach sector. Participants will be identified and recruited based on their participation in past and existing Transformational programs like Sharing the Aloha and NEED.org. Rooted in a whole-home performance approach, this program is designed to convert Hawaii Energy's workshop attendees to active energy-saving program participants.
Key Changes	• New initiatives
Marketing Strategies	• Promotion through existing Transformational program offerings • Direct contact with participating energy professionals • Direct contact with Property Managers and AOAOs

4.4 Residential Energy Services & Maintenance (RESM)

Program Category	**4.4 Residential Energy Services & Maintenance** **4.4.1 Residential System Tune-Ups**
Target Market	• Homeowners, Landlords, Tenants and Property Managers • Manufacturers, Distributors, Dealers and Retailers • Mechanical and Solar Service Contractors
Impacts	Demand 99 kW Energy 522,490 kWh Incentive Budget $250,000 Cost per kWh $0.48 /kWh TRB $644,993
Technologies	**Incentive** / **Units** Solar Water Heater Tune-Up $150 1,000 Systems Central Air Conditioning Retrofit Pilot $1,000 100 Homes
Market Barriers	**General** • Lack of awareness of need for maintenance • Resistance to engage unknown contractors • High up front cost
Description & Implementation Strategies	**Solar Water Heater Tune-up** • Demonstrate the benefits of tune-ups • Educate customer of potential savings and system longevity • Utilize the participating contractors to contact the customers and have them arrange for the service work • Participating contractors will use the Hawaii Energy Checklist to inspect and record the pre and post conditions • Participating contractor's invoice must show that checklist requirements have been met and signed by the servicing technician and customer **Central Air Conditioning Retrofit- Pilot** • This pilot will explore the effectiveness of replacing central air conditioning units popularly installed in residential single family developments in the early 2000's. The retrofit will consist of upgrading the primary unit, typically with an EER of 10.0, to one with a higher EER of 13.0. • The higher incentive of $1,000 is designed to offset the cost of this work which is expected to require a significant investment from the customer. **Implementation** The Program will conduct outreach sessions with existing contractors, both solar and HVAC, to promote the programs, solicit feedback for more efficient program operation, and identify opportunities for implementation and coordination of efforts.

Program Category	**4.4 Residential Energy Services & Maintenance** **4.4.1 Residential System Tune-Ups**
Key Changes	• Central Air Conditioning Retrofit Pilot
Marketing Strategies	• Direct contact with Solar and AC Contractors • Provide collateral to Clean Energy Allies offering this service • Distribute educational materials at community events, neighborhood board meetings and homeowners association meetings • Provide cost of ownership information on rebate application forms and benefits of ownership on our website

4.5 Residential Hard-to-Reach (RHTR)

Program Category	**4.5 Residential Hard-to-Reach** **4.5.1 Energy Efficiency Equipment Grants**
Target Market	Low-income, geographically-isolated and traditionally underserved residential markets
Impacts	Demand 44 kW Energy 437,044 kWh Incentive Budget $521,000 Cost per kWh $1.19 /kWh TRB $778,399
Technologies	**Incentive** / **Units** Refrigerator (w/recycling) - Lanai/Molokai equity $250 220 units Direct Install – Solar Water Heater (SWH) $9,000 24 Systems Direct Install - Heat Pump Water Heater (HPWH) $2,500 100 Systems
Market Barriers	• Customer lack of access to capital for energy improvements • Lack of understanding of energy efficiency benefits • Renter and Lessee reluctance to invest in property
Description & Implementation Strategies	**Refrigerator (with recycling) Lanai and Molokai equity** Building on existing relationships with local haulers/recyclers, the Program will expand its ENERGY STAR® refrigerator trade-up with recycling program to retail locations on Lanai and Molokai. **Direct Install – Solar Water Heater** The Program will continue to work with community assistance programs to identify hard-to-reach residential households to receive fully-funded solar water heating systems. **Direct Install – Heat Pump Water Heater** Hawaii Energy will work with government housing agencies and property management companies to identify ideal multifamily facilities to receive fully-funded heat pump water heaters. We will engage the Clean Energy Allies for the installation work and will build on efforts initiated in PY14 to appropriately address concerns for noise mitigation.
Key Changes	• Increased focus and penetration of direct install and educational outreach • New Heat Pump Water Heater direct install program
Marketing Strategies	• Continue to target low-income and hard-to-reach customers through existing state and local agencies who service the needs of low income families • Develop working relationships with more community action and similar local groups to increase market penetration

Program Category	**4.5 Residential Hard-to-Reach** **4.5.2 Direct Installation – Residential Energy Kits**
Target Market	• Associations of Apartment Owners • Property Managers • Landlord/Tenants
Impacts	Demand 151 kW Energy 556,184 kWh Incentive Budget $161,250 Cost per kWh $0.29 /kWh TRB $635,027
Technologies	**Incentive** **Units** Multi-family Direct Install – Energy Savings Kits $129/unit 1,250
Market Barriers	• Lack of understanding of energy efficiency benefits • Renter and Lessee reluctance to invest in property
Description & Implementation Strategies	In PY15 Hawaii Energy will expand the turn-key installation of energy-saving technologies like high efficiency showerheads, faucet aerators, advanced power strips and high efficiency light bulbs (CFLs and LEDs) in multifamily residences. Will target over 4,000 households to participate in the offering; this includes multifamily properties with individually-metered residential accounts and commercial master-metered accounts **Implementation** The Program has a strong pipeline of leads and continues to engage property managers and government housing agencies to identify potential participants. We will also continue to engage additional properties through existing submetering and benchmarking efforts. This multifaceted approach will continue in PY15 as it has proven effective in gaining access to the multifamily market which has historically been slower to participate in existing rebate programs. All measures will be direct install with no customer co-pay required. Hawaii Energy will manage customer education, scheduling and installation.
Key Changes	• Expansion of PY14 efforts
Marketing Strategies	• Direct contact with State housing agencies, property managers, AOAOs, and landlords • Community event promotion • Print advertising and social media

5.0 BUSINESS PROGRAM STRATEGY & DETAILS

5.1 Overview

Hawaii Energy will be selectively retooling its Business Operations staff with enhanced tools and techniques to advise prospective participants in the value of energy efficiency. This effort will better align Transformational offerings in Selling Energy Efficiency and embed these best practices throughout its internal operations.

Hawaii Energy will continue to develop its Clean Energy Ally network with a focus on value-added tools, techniques and training to augment Hawaii Energy's small team of Energy Efficiency Advisors. This effort will ensure customers have a robust selection of Allies to implement projects. Backed with a budget around $40,000, specific aims will include networking opportunities, collaborative marketing and a recognition program to acknowledge the contributions Hawaii Energy's Clean Energy Allies make in helping the State achieve its clean energy goals.

For PY15, Hawaii Energy will continue with its programmatic philosophies that have been successful over the past few years, specifically these incentive categories:

- *Business Energy Efficiency Measures (BEEM)* – This category offers incentives for standard, known energy efficiency technologies in the form of prescriptive incentives in a streamlined application and grant award process. A new focus for this program year will be the expansion of the midstream program which will rely on energy efficiency distributors to reduce the upfront material costs for contractors installing energy efficient measures

- *Custom Business Energy Efficiency Measures (CBEEM*) – This category offers incentives for non-standard energy efficiency technologies often needed for commercial and industrial customers who need to invest in energy efficiency opportunities specific to unique projects and designs. Incentive award amounts are determined via calculations performed to quantify specific energy savings related to unique applications.

- *Business Energy Service and Maintenance (BESM)* – This incentive category focuses on developing viable projects through collaboration, competition and direct support in the form of expertise and/or equipment (i.e. metering).

- *Business Hard-to-Reach (BHTR)* - This incentive category aims to secure various projects among geographies and demographics that have been traditionally underserved such as retail, restaurants and other small businesses.

A summary listing of the Business Program offerings can be found in the table below followed by a brief summary of any additions and changes. A detailed description of the Business Program follows in sections 5.2 through 5.5. Appendix B contains a projection of potential energy savings for the planned programs.

Figure 5: List of Business Programs

Business
BEEM
High Efficiency Water Heating
High Efficiency Lighting
High Efficiency HVAC
High Efficiency Water Pumping
High Efficiency Motors
Commercial Industrial Processes
Building Envelope Improvements
High Efficiency Appliances
Energy Star Business Equipment
Direct Install - Residential Energy Kits
Energy Efficiency Equipment Grants
Energy Awareness, Measurement and Control Systems
CBEEM
Customized Project Measures
BESM
Business Design, Audits and Commissioning
BHTR
Business Direct Installation
Restaurant Targeted Participation Programs

5.1.1 *New Program Offerings of Business Energy Efficiency Measures (BEEM)*

High Efficiency Lighting

Hawaii Energy will continue to seed and grow its Midstream Programs with the intent to shift 10% to 25% its prescriptive lighting program (e.g. ~$150,000 BEEM incentives) to this channel. Midstream programs are relatively new in the industry, but offer the Program an administratively efficient platform to expand its reach while mitigating recognized barriers to participation (e.g. submitting a complete application). Efforts are underway to recruit local distributors under the Clean Energy Ally banner to offer their customers, primarily electrical and lighting contractors, to receive instant rebates when purchasing qualified lighting. Hawaii Energy will also explore midstream opportunities with other measures such as motors, pumps, ENERGY STAR® kitchen equipment and possibly HVAC.

Wastewater

Wastewater facilities are 24/7 facilities that have specific technical requirements, high capital costs and long procurement process. This targeted program will continue practices started in PY13 to target the two highest energy consumers in the plants, Air Systems & UV Lighting through process improvements. Lessons learned from PY13 and PY14, specifically the potentially long procurement cycle of these facilities, will be incorporated into the program in PY15 and Hawaii Energy will continue to pursue projects that we identified over the last two years.

Sea Water Cooling

Hawaii Energy will continue to support this evolving project in PY15 through metering and providing ad hoc resources as needed. The Program will pay incentives as directed in earlier proceedings upon installation and startup of the Sea Water Air Conditioning (SWAC) system.

5.1.2 *New Program Offerings of Customized Business Energy Efficiency Measures (CBEEM)*

Customized Project Measures

- *Target Cost per KWh Request for Proposals* – There is a potential to utilize a program that will provide an open opportunity for achieving energy efficiency by developing cost-effective projects that focus on high energy consumption businesses. The program would be part of the customized measures and be a formal call for projects that meet a total dollar per kWh savings target and allow the market to be creative in how it is achieved. The projects will use utility metered data and if needed, will be sub-metered to ensure savings performance.

- In PY14 Hawaii Energy conducted a small pilot program to install refrigerated display case gaskets, and strip curtains and automatic door closures for walk-in refrigerators and freezers in grocery and convenience stores. Preliminary indications were very positive and delivered savings cost effectively. Hawaii Energy will continue to evaluate the savings from this pilot program and may institute a full scale program in PY15 if savings results are confirmed.

5.1.3 *New Program Offerings of Building Energy Services and Maintenance (BESM)*

Business Design, Audits and Commissioning

Decision Maker: Real-Time Submeters – There are individuals within business organizations who have influence over a large number of employees whose behavior within the work environment drive unnecessary energy consumption (e.g., leaving on lights, additional electronic equipment, etc.). This offer is the direct installation of a web-based electrical metering device. This metering will be monitored by the decision maker(s) within the organization to identify usage patterns and be the basis of peer group competitions within the organization.

5.1.4 *New Program Offerings of Business Hard-to-Reach (BHTR)*

Small Business Direct Install Lighting Program

Hawaii Energy will evaluate its SBDIL bonus pilot to assess the bonus-to-participation elasticity to evaluate the impact on outcomes and cost-effectiveness of directly incenting Clean Energy Allies (a strategy which has been implemented in other utility programs to a limited extent).

ENERGY STAR® Kitchen Equipment

This program will focus on raising awareness of energy efficiency options when replacing equipment at end-of-life. Promoting ENERGY STAR® equipment in restaurants will help to save energy and lower annual operating costs for the participant. Hawaii Energy will offer prescriptive incentives for a variety of ENERGY STAR® kitchen appliances.

5.1.5 *Business Program Details*

To follow, in Sections 5.2 through 5. 5, is an overview summary of Business Program offerings followed by detailed descriptions and energy savings. The Overall Program Details are provided on the following page, preceding the individual Program summaries.

Program Category	**5.1 All Business Programs** **Overview of All Business Programs**
Target Markets	**Competitive Commercial** o Office Buildings o Retail **Governmental** o City o State o Federal **Industrial Sector** o Warehousing o Cold Storage o Water Pumping o Manufacturing **Multi-Site** o Convenience Stores o Restaurants **High Load Factor Customers** o Hospitals o Hotels o Super Markets o Data Centers **Multi-Family Commercial Rate** o AOAO o AOAO - Mixed Use
Projected Impacts	Demand 6,134 kW Energy 61,753,307 kWh Incentive Budget $12,915,474 Cost per kWh $0.2091 /kWh TRB $88,085,212
Incentives	**Measure Categories** — **Incentives** 5.2 Business Energy Efficiency Measures — $ 3,561,800 5.3 Custom Business Energy Efficiency Measures — $ 6,131,459 5.4 Business Service and Maintenance — $ 780,000 5.5 Business Hard-to-Reach — $2,442,215 $ 12,915,474
Market Barriers	**General** • 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 • High initial up-front cost • Life Cycle Cost vs. Simple Payback decision analysis • Need for a cash positive investment • Access to and/or understanding of financial options • Lack of knowledge of operation and maintenance of technologies **Landlords and Property Managers** • May not pay for electricity cost • Reluctance to invest without a financial return • Property is a short term investment

Program Category	**5.1 All Business Programs** **Overview of All Business Programs**
	Renters and Lessees • Do not have the authority or responsibility for the systems • Renter lease term shorter than simple payback for a measure
Description & Implementation Strategies	**Technology Based Categories:** High Efficiency Lighting, HVAC, Water Heating, Water Pumping, Motors, Commercial Industrial Processes, Building Envelope Improvements, ENERGY STAR® Business Equipment The technology-based incentives are provided for energy efficiency products that provide reliable energy savings for a wide array of customers. These incentives are developed to be based on fixed amounts per technology with performance adjustments to reflect the savings potential to ensure program cost-effectiveness set based on expected savings. Measures are selected and reviewed to determine that the energy savings can be reliably deemed, or calculated using simple threshold criteria. The implementation process includes: • Program performs outreach and promotions to inform customers of incentive opportunities. • Customer selects and approves purchase and installation of energy efficiency measures • Customer sends in completed application forms with scheduling and supporting documentation • Customer provides evidence of installation and/or program will verify the installation Hawaii Energy processes the incentive on approved applications on an as-funds available basis **Energy Awareness, Measurement, and Control Systems** • Provide peer groups with customized Hawaii-specific Energy Use Intensity reports. These comparisons show their usage in comparison to their peers currently on an entire facility basis and as the program progresses we will disaggregate the comparisons down to the technologies "categories." • Provide self-assessment forms that the customer can complete on their own to identify potential savings. Increase the use of incentives such as the Condominium Submetering that combine cash incentives with the requirement for educational components and the execution of audits to promote further energy savings activity in the facilities.

Program Category	**5.1 All Business Programs** **Overview of All Business Programs**
Key Changes	• Hawaii Energy will continue to seed and grow its Midstream Programs with the intent to shift 10% to 25% its prescriptive lighting program (e.g. ~$150,000 BEEM incentives) to this channel. Midstream programs are relatively new in the industry, but offer the Program an administratively efficient platform to expand its reach while mitigating recognized barriers to participation (e.g. submitting a complete application). • Hawaii Energy will discontinue offering incentives for CFL in the business programs reflecting the maturity of the measure in the marketplace.
Marketing Strategies	• Web-based application forms will be advertised and made available to customers and their channel allies (lighting, cooling, motors, and controls). • Train and recruit program allies from various channels as program partners to enhance sales of their energy efficiency equipment • Maintain direct contact with key market players to understand the markets and decision points and to leverage their marketing resources to inform members • Email informational campaigns • Award and publish success of customer and ally partners to demonstrate highest level leadership in an effort to pull the market.

5.2 Business Energy Efficiency Measures (BEEM)

Program Category	5.2 Business Energy Efficiency Measures BEEM Programs Overview

Projected Impacts

Demand	4,050	kW
Energy	22,395,900	kWh
Incentive Budget	$3,561,800	(15%)
Cost per kWh	$0.1590	/kWh
TRB	$ 40,472,594	

Incentives

	Incentives
High Efficiency Lighting	$1,063,250
High Efficiency HVAC	$1,265,500
High Efficiency Water Heating	$227,400
High Efficiency Water Pumping	$50,900
High Efficiency Motors	$86,000
Commercial Industrial Processes	$52,500
Building Envelope Improvements	$52,000
High Efficiency Appliances	$33,750
ENERGY STAR® Business Equipment	$12,500
Direct Install – Residential Energy Kits*	$378,000
Energy Awareness, Measurement and Control Systems	$190,000
Energy Efficiency Equipment Grants	$150,000

*These are residential end-use measures installed in multi-family dwelling billed by Hawaii Electric as commercial accounts.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.1 High Efficiency Lighting**

Projected Impacts

Demand	1,382	kW
Energy	11,798,724	kWh
Incentive Budget	$ 1,063,250	(4.5%)
Cost per kWh	$0.0901	/kWh
TRB	$ 19,463,917	

Incentives

	Incentive	Units	
T12 to T8 (2&3 foot lamps)	$5.20	1,450	Lamps
T12 to T8 Low Wattage	$10.00	5,000	Lamps
T8 to T8 Low Wattage	$5.50	3,750	Lamps
Delamp	$8.80	17,550	Lamps Removed
Delamp/Reflector	$4.50	6,800	Lamps Removed
LED Refrigerated Case Light	$75.00	1,500	Lamps
ENERGY STAR LED			
-non-dimmable existing	$9.00	20,000	Lamps
-dimmable w/controls	$10.00	20,000	Lamps
-non-dimmable A19 existing	$5.00	24,000	Lamps
-dimmable A19 new	$7.50	13,250	Lamps
LED Exit Signs	$40.00	600	Signs
LED Fixtures	$30.00	100	Fixtures
Sensors	$20.00	3000	Sensors

Key Changes

Hawaii Energy will continue to seed and grow its Midstream Programs with the intent to shift 10% to 25% its prescriptive lighting program (e.g. ~$150,000 BEEM incentives) to this channel. Midstream programs are relatively new in the industry, but offer the Program an administratively-efficient platform to expand its reach while mitigating recognized barriers to participation (e.g. submitting a complete application). Efforts are underway to recruit local distributors under the Clean Energy Ally banner to offer their customers, primarily electrical and lighting contractors, to receive instant rebates when purchasing qualified lighting. Hawaii Energy will also explore midstream opportunities with other measures such as motors, pumps, ENERGY STAR® kitchen equipment and possibly HVAC.

Hawaii Energy will also discontinue offering incentives for CFL in the BEEM program reflecting the maturity of the measure in the marketplace.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC**
Projected Impacts	Demand 1,402 kW Energy 5,273,391 kWh Incentive Budget $ 1,265,500 (5.4%) Cost per kWh $0.2400 /kWh TRB $ 12,591,839

Incentives

	Incentive	Units	
Central Chiller Plant > 15% Better than Code	$50	6,400	Tons
Chillers – kW/ton meter and Chiller Curve Optimization	$5,000	25	Systems
Optimized Chiller Selection Engineering	$2,500	25	Participants
VFD – HVAC Chilled Water/Condenser Water	$80	1,600	hp
VFD – HVAC AHU	$50	3,600	hp
Garage Active Ventilation Control	$0.12	500,000	kWh
Package Units	$200	700	Tons
VRF Split Systems - Existing	$300	500	Tons
VRF Split Systems – New Construction	$250	400	Tons

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC** **5.2.2.1 Central Plant ->15% Better than Code Chillers**
Projected Impacts	Demand 292 kW Energy 1,422,982 kWh Incentive Budget $ 320,000 Cost per kWh $0.2249 /kWh TRB $3,494,277
Incentives	**Incentive** **Units** Chillers $50 6,400 Tons
Description & Implementation Strategies	This incentive will be targeted at chillers, both air-cooled and water-cooled, that have efficiencies at least 15% better than code efficiency requirements in place at the time of permitting the project. Significant savings can be achieved with this measure particularly when you consider the life expectancy of a chiller is 20 years.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC** **5.2.2.2 Chiller Plant Efficiency – kW/ton meter**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 125,000 Cost per kWh 0 /kWh TRB 0
Incentives	**Incentive** **Units** Chillers $5,000 25 Systems
Description & Implementation Strategies	**Energy Reduction Opportunity** The use of variable speed drives, oil-free magnetic bearings, large heat exchangers, lower condenser water and other modern design features, new chillers are 20-40% more efficient than older machines. Much of the savings is at part-load conditions where chillers operate the majority of the time. The BTU metering will allow building operators to know exactly how efficient the chiller is running at all times including part load and full load conditions. This should allow the building operator to continuously optimize and maintain the chiller producing of energy savings over time. At this time it is not known what savings will be generated by this measure; consequently, this incentive will be run as a pilot program subject to review and approval of how savings will be determined. Once determined the savings methodology will be included in the TRM for 2015 Programs. **Target Audience** Who: Property Managers, Facilities Directors, Chief Engineers and Governmental Facilities Departments What: Large Commercial facilities CUSTOMER QUALIFICATIONS Customers with existing centrifugal, screw, scroll or reciprocating chillers approaching the end of their useful life. **Application Process** The following will be completed and submitted for review • Rebate Application, AC Chiller Rebate Worksheet • Chiller Equipment type (centrifugal, screw, reciprocating) • BTU metering configuration **Complementary Programs** • Customized Project Measures

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC** **5.2.2.3 Optimized Chiller Selection Engineering**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 62,500 Cost per kWh $0 /kWh TRB $0
Incentives	Optimized Chiller Selection Engineering — Incentive: $2,500 — Units: 25 Participants
Description & Implementation Strategies	**Energy Reduction Opportunity** The chiller selection process is an important element prior to chiller purchase that is often overlooked. In many applications, replacing chillers with the size chiller that currently exists misses an opportunity to downsize the chiller. Significant energy savings can occur if chillers are "right-sized" to the load. After seeing lackluster participation in the chiller optimization program in PY13 that was based on the eventual installation of an optimized chiller, it was determined the ultimate goal of this incentive was to get vital information to the decision makers on the optimized size of the chiller before a buying decision is made. Hawaii Energy believes this can best be done by funding an energy optimization studies in the beginning of the selection process. **Target Audience** Who: Property Managers, Facilities Directors, Chief Engineers and Governmental Facilities Departments What: Large Commercial facilities **Incentive & Targeted Economics** Hawaii Energy would fund a study to determine the actual load that the existing chiller is serving. The result of the study can be used by the decision makers to right size the new chiller when it is purchased. CUSTOMER QUALIFICATIONS Customers with existing chillers include centrifugal, screw, scroll and reciprocating, approaching the end of their useful life.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC** **5.2.2.4 Package Units – 15% Better Than Code**
Projected Impacts	Demand 54 kW Energy 320,925 kWh Incentive Budget $ 140,000 Cost per kWh $0.4362 /kWh TRB $ 606,353
Incentives	**Incentive** **Units** Package Units $200 700 Tons
Description & Implementation Strategies	**Energy Reduction Opportunity** 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. **Target Audience** Who: Property Managers & Private and Public Facilities Directors. Air Conditioning/Mechanical Contractors, Mechanical Engineers What: Small Commercial facilities. **Incentive & Targeted Economics** The offering of prescriptive incentives based on the EER of the units at or above 15% better than IECC 2006 energy codes. **Application Process** 1. A prescriptive worksheet will be competed and submitted for review • Unit size, model, efficiency rating, operational hours • Map of Locations 2. A sample of sites have pre/post inspections **Complementary Programs** • Window Tinting • Package and Split AC Tune-Up • VRF Split Systems

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC** **5.2.2.5 Variable Refrigerant Flow Air Conditioners – Existing Facility**
Projected Impacts	Demand 85 kW Energy 505,647 kWh Incentive Budget $ 250,000 Cost per kWh $0.4944 /kWh TRB $ 1,149,948
Incentives	**Incentive** / **Units** VRF Split Systems – Existing Systems $300 500 Tons VRF Split Systems – New Construction $250 400 Tons
Description & Implementation **Strategies**	**Energy Reduction Opportunity** 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 Electrically Commutated Motors (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. **Target Audience** Who: Property Managers & Private and Public Facilities Directors. Air Conditioning/Mechanical Contractors, Mechanical Engineers What: Commercial facilities. **Incentive & Targeted Economics** The offering of prescriptive incentives based on the tonnage of the VRF system. This level of incentive should reduce 25% of the incremental difference between a VRF and an alternative single or two-speed standard efficiency unit. **Application Process** 1. A prescriptive worksheet will be completed and submitted for review • Unit size, model, efficiency rating, operational hours • Map of Locations 2. A sample of sites have pre/post inspections **Complementary Programs** • Window Tinting, Package and Split AC Tune-Up

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC** **5.2.2.6 VFD – AHU** **5.2.2.7 VFD – Chilled Water / Condenser Water**
Projected Impacts	Demand 923 kW Energy 2,608,712 kWh Incentive Budget $ 308,000 Cost per kWh $0.1181 /kWh TRB $ 6,907,063
Incentives	**Incentive** / **Units** VFD – AHU $50 3,600 hp VFD – Chilled Water / Condenser Water $80 1,600 hp
Description & Implementation Strategies	**Energy Reduction Opportunity** The use of variable frequency drives to vary motor speeds to control flow in response to changes to loads provides significant savings in HVAC applications of supply, return and exhaust fans as well as chilled water and condenser water pumps. **Target Audience** Who: Property Managers, Facilities Directors, Chief Engineers and Governmental Facilities Departments, Mechanical Engineers and Contractors. What: All Commercial Facilities **Incentive & Targeted Economics** HVAC Fans (VFD): The offering of a prescribed $50 per fan HP controlled (3-100 HP for existing facilities and 3-25 HP for new facilities) incentive. HVAC Pumps (VFD): The offering of a prescribed $80 per pump HP controlled (3-100 HP and 3-50 HP for new facilities) incentive for both existing and new construction facilities. CUSTOMER QUALIFICATIONS The application must have a load and system design and controls (two way valves, VAV boxes etc.) that respond to varying loads. **Application Process** A HVAC Fan or Pump VFD rebate worksheet will be completed and submitted for review. • Require pre-notification before projects begin. • Existing equipment must not have a VFD. • The VFDs must actively control and vary the fan or pump speed. • Motor HP • Motor quantity

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.2 High Efficiency HVAC** **5.2.2.8 Garage Active Ventilation Control**
Projected Impacts	Demand 47 kW Energy 415,125 kWh Incentive Budget $ 60,000 (0.3%) Cost per kWh $0.1445 /kWh TRB $434,198
Incentives	**Incentive** **Units** Garage Active Ventilation Control $0.12 500,000 kWh
Description & Implementation Strategies	**ENERGY REDUCTION OPPORTUNITY** Enclosed parking garages that are mechanically ventilated 24/7 in order to remove the carbon monoxide (CO) created by gasoline powered vehicles. The ventilation systems are designed for maximum capacity conditions and there are opportunities to reduce both operating speed and fan runtimes during times of lower traffic periods to achieve fan energy savings of 60% to 90% with active CO monitoring systems control. The addition of Variable Speed Drives (VFDs) can also be incorporated if not already present. **TARGET AUDIENCE** Who: Property Managers & Private and Public Facilities Directors Air Conditioning/Mechanical Contractors Facilities Maintenance Companies What: Office/Retail Buildings with mechanically ventilated parking garages **INCENTIVE & TARGETED ECONOMICS** The $0.12/kWh incentive is directly provided to the metered savings resulting from the retrofit. **APPLICATION PROCESS** 1. A garage fan savings worksheet will be competed and submitted for review • Exhaust Fan/Motor Inventory • Map of Locations • Motor Horsepower & Runtimes • Sample set of fans must be spot metered to determine operating power consumption. 2. A pre/post inspection will be performed for systems totaling over 75 hp. This inspection may include metering of current fan horsepower. **COMPLEMENTARY PROGRAMS:** • High Efficiency Lighting – Induction/T8/T5/Occupancy Sensors/Timers

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.3 High Efficiency Water Heating**
Projected Impacts	Demand 521 kW Energy 587,460 kWh Incentive Budget $227,400 (1.0%) Cost per kWh $0.3871 /kWh TRB $3,318,543
Incentives	

	Incentive	Units
Commercial Solar Water Heaters		
- Electric Resistance	$250	200 Tons
- Heat Pump	$100	300 Tons
Single Family Solar Water Incentive	$750	150 systems
Heat Pumps		
- Conversion (Electric Resistance)	$120	20 Tons
- Heat Pump Upgrade	$65	500 Tons

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.3 High Efficiency Water Heating** **5.2.3.1 Commercial Solar Water Heaters Electric Resistance** **5.2.3.2 Commercial Solar Water Heaters Heat Pump**
Projected Impacts	Demand 457 kW Energy 190,094 kWh Incentive Budget $ 80,000 Cost per kWh $0.4208 /kWh TRB $ 2,518,897
Incentives	**Incentive** **Units** Commercial Solar Water Heaters - Electric Resistance $250 200 Tons - Heat Pump $100 300 Tons
Description & Implementation Strategies	**Energy Reduction Opportunity** 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. **Target Audience** Who: AOAOs, Property Managers, Private and Public Facilities Directors. Mechanical Contractors, Mechanical Engineers. What: Hotel, Condominium and Apartments & Government housing. **Incentive & Targeted Economics** The offering of a $250/12,000 BTU prescriptive incentive-based on the derated installed capacity of the solar water heating system. The base system must have been electric resistance, heat pump or heat recovery off an electric chiller, the latter two receiving a smaller incentive commensurate with their lesser energy savings. Conversion to a gas backup system is permitted to eliminate any potential electrical demand from the system and allow quick peak recovery. The economic impact of this incentive will depend on the ability for the customer to take advantage of tax credits and the site specific system costs.
Description & Implementation Strategies (continued)	**Application Process** 1. A prescriptive worksheet/saving calculator will be competed and submitted for review • Unit sizes, model, derating rating, operational hours • System diagram 2. A sample of sites will have pre/post inspections **Complementary Programs** • Water saving showerheads, spray-rinse valves, and fixtures.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.3 High Efficiency Water Heating** **5.2.3.3 Heat Pump – Conversion – Electric Resistance** **5.2.3.4 Heat Pump Upgrade** **5.2.3.5 Single Family SWH Incentive**

Projected Impacts

Demand	64	kW
Energy	397,366	kWh
Incentive Budget	$ 147,400	
Cost per kWh	$0.3709	/kWh
TRB	$799,646	

Incentives

	Incentive	Units
Heat Pumps		
- Electric Resistance	$120	20 Tons
- Upgrade	$65	500 Tons
Single Family SWH	$750	150 units

Description & Implementation Strategies

Energy Reduction Opportunity

Heat pump water heaters can provide a highly-efficient source of water heating. Water-source heat pumps are the most efficient when used to supplement the heat rejection from chilled water return loops and condenser water systems to heat a facility's domestic water needs or swimming pools. Heat pumps can also be air-source and provide heat mitigation in areas such as commercial kitchens and can function as a stand-alone water heater for pools

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 heat pump storage tanks.

Target Audience

Who: AOAOs, Property Managers, Private and Public Facilities Directors, Mechanical Contractors, Mechanical Engineers.

What: Commercial Pools, Hotel, Condominium and Apartments & Government housing.

Incentive & Targeted Economics

The offering of a $120 or $65/ton prescriptive incentive based on the installed capacity of the heat pump. The base system must be an electric resistance, failing heat pump (10 years or older) or heat recovery off an electric chiller. Conversion/remaining on a gas backup system are permitted to eliminate any potential electrical demand from the system and allow quick peak recovery.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.4 High Efficiency Water Pumping - Overview**
Projected Impacts	Demand 14 kW Energy 143,609 kWh Incentive Budget $ 50,900 (0.2%) Cost per kWh $0.3544 /kWh TRB $227,851
Incentives	**Incentive** **Units** VFD Dom. Water Booster Packages – VFD $600 75 hp VFD Dom. Water Booster Packages - added HP Reduction $80 30 hp reduced VFD Pool Pump Packages $350 10 hp

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.4 High Efficiency Water Pumping** **5.2.4.1 VFD Dom. Water Booster Packages – added HP Reduction** **5.2.4.2 VFD Dom. Water Booster Packages – VFD ($3K per Sys.)**
Projected Impacts	Demand 13 kW Energy 134,286 kWh Incentive Budget $ 47,400 Cost per kWh $0.3530 /kWh TRB $ 213,497
Incentives	**Incentive** **Units** VFD Dom. Water Booster Packages – VFD $600 75 hp VFD Dom. Water Booster Packages - Added HP Reduction $80 30 hp reduced
Description & Implementation Strategies	**Energy Reduction Opportunity** The replacement of single speed staged domestic water booster pumps can provide up to 70% energy savings by: • providing constant pressure regardless of flow • reducing pump speed during low use periods increases system efficiency **Target Audience** Who: Property Managers, Facilities Directors, Chief Engineers and Governmental Facilities Departments, Mechanical Contractors and VFD Pump Package suppliers. What: Apartments, Office Buildings, Hotels, Hospitals **Incentive & Targeted Economics** The offering of a prescribed $3,000 for the VFD booster pump system plus another $80 per HP reduction is targeted to achieve a 10 - 15% reduction in the system cost. All pump motors must meet CEE Premium Efficiency standards. <u>CUSTOMER QUALIFICATIONS</u> Booster Pump applications require pre-notification before equipment is purchased and installed. • The new booster pump system's total horsepower must be equal to or less than that of the existing system. • The system horsepower reduction must be between 0 to 129 hp. For projects with greater than 129 hp, please contact the program • Booster Pump applications do not apply to New Constructions.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.4 High Efficiency Water Pumping** **5.2.4.1 VFD Dom. Water Booster Packages – added HP Reduction** **5.2.4.2 VFD Dom. Water Booster Packages – VFD ($3K per Sys.)**
Description & Implementation Strategies (continued)	**Application Process** The following will be completed and submitted for review • Rebate Application • Booster Pump Rebate Worksheet • Manufacturer's specification sheets or Name Plate Information including: • Manufacturer • Model Number • Serial Number • Motor Size (nominal hp) – All pump motors must meet CEE Premium Efficiency standards • Pump Type • Identify Pump with VFD or without VFD • Existing System hp minus New System hp **Complementary Programs** • Customized Project Measures • Central Plant Optimization Competition • CEE Listed Premium Efficiency Motors

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.4 High Efficiency Water Pumping** **5.2.4.3 VFD Pool Pump Packages**
Projected Impacts	Demand 1 kW Energy 9,324 kWh Incentive Budget $ 3,500 Cost per kWh $0.3754 /kWh TRB $14,353
Incentives	**Incentive** **Units** VFD Pool Pump Packages $350 10 hp
Description & Implementation Strategies	**Energy Reduction Opportunity** 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. **Target Audience** Who: Property Managers, Facilities Directors, Chief Engineers and Governmental Facilities Departments What: Commercial facilities with swimming pool. **Incentive & Targeted Economics** The offering of a prescribed $225 per HP installed. CUSTOMER QUALIFICATIONS Existing single speed pool pump **Application Process** The following will be completed and submitted for review: • Rebate Application • VFD Pool Pump Rebate Worksheet • Manufacturer's specification sheets • Name Plate - Manufacturer, Model Number, Serial Number • Motor Size–pump motors must meet NEMA Premium Efficiency • Pump Type • Proof of installation and purchase **Complementary Programs** • Customized Project Measures • Central Plant Optimization Competition

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.5 High Efficiency Motors** **5.2.5.1 CEE Tier 1+ Premium Efficiency Motors** **5.2.5.2 ECM- Fan Coil Fans** **5.2.5.3 ECM w/ Controller- Evaporator Fan Motors**

Projected Impacts

Demand	24	kW
Energy	214,196	kWh
Incentive Budget	$ 86,000	(0.4%)
Cost per kWh	$0.4015	/kWh
TRB	$ 357,183	

Incentives

	Incentive	Unit
CEE Tier 1+ Premium Efficiency Motors	$10/hp	0 hp
ECM w/ Controller		
- Evaporator Fan Motors	$85/motor	300 Motor
ECM- Fan Coil Fans	$55/motor	1,100 Motor

Description & Implementation Strategies

Energy Reduction Opportunity

CEE LISTED MOTORS

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.

The CEE Premium Efficiency Specification will be the qualification level for motors. This is driven by the December 2010 implementation of the Energy Independence and Security Act of 2007 (EISA) requiring the vast majority of new electric motors to meet NEMA Premium Efficiency standards.

ECM

There is an opportunity to save energy with ECM motors that have higher electrical efficiency (Electronically Commutated Motor, 70 percent efficient) 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.

When motors fail there is often an operational urgency to replace them at the lowest first-cost as the replacement was not budgeted.

Target Audience

Who: Property Managers, Mechanical & Electrical Contractors, Motor Repair/Rewind Shops, Motor Distributor and Supply houses

What: All Refrigeration and PTAC units

Incentive & Targeted Economics

The current $10/hp incentive was designed to eliminate the cost premium for the listed CEE Premium efficiency motors up to 200 hp. The $85 and $55/motor incentives are aimed at 20% of installed cost.

Application Process

1. A contractor or customer submitted application and savings worksheet.
    - Unit size, model,
    - Unit location description
    - Operational hours
2. A sample of sites will have post inspections

Complementary Programs

- High Efficiency HVAC
- Central Plant Optimization
- Target Cost per kWh Request for Proposals

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.6 Commercial Industrial Processes – Overview**			
Projected Impacts	Demand	28	kW	
	Energy	163,954	kWh	
	Incentive Budget	$ 52,500	(0.2%)	
	Cost per kWh	$0.3202	/kWh	
	TRB	$ 311,442		
Incentives		**Incentive**	**Unit**	
	Kitchen Exhaust Hood Demand Ventilation	$700	75	hp
	Refrigerated Case Night Cover	$10/Linear ft.	0	Linear ft.*
	**but is available to participants*			

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.6 Commercial Industrial Processes** **5.2.6.1 – Kitchen Exhaust Hood Demand Ventilation**
Projected Impacts	Demand 28 kW Energy 163,954 kWh Incentive Budget $ 52,500 Cost per kWh $0.3202 /kWh TRB $ 311,442
Incentives	**Incentive** **Unit** Kitchen Exhaust Hood Demand Ventilation $700/hp 75 hp
Description & Implementation Strategies	**Energy Reduction Opportunity** Kitchen ventilation with demand control hood exhaust uses temperature and/or smoke sensors to adjust ventilation rates. This saves significant energy compared to traditional 100% on/off controls. Traditional ventilation systems operate at one speed regardless of how hard the appliances are working. Demand-controlled ventilation systems respond to variations in stove use, allowing two-speed or variable speed fans to regulate exhaust and make up airflow as necessary. Therefore, when stoves are off or only a few burners are in use, exhaust fans work at lower speeds and use less energy. **Target Audience** Restaurants, hotels, universities and hospitals. **Incentive & Targeted Economics** Incentive amounts will differ based on existing or new construction applications. **Application Process** To qualify for a Hawaii Energy Commercial Kitchen Demand Ventilation Controls Rebate, the following conditions must be met: • The control system must be used in conjunction with variable speed fan motor controls. • All motors must meet NEMA Premium Efficiency standards and be UL® Approved • Temperature or optical fume sensors must have the ability to sense and ramp up or down the ventilation rate based on the presence of temperature, smoke or steam from cooking activity • Temperature and Infrared cooking sensors must have the ability to measure temperature at the cooking surface to ramp ventilation up or down based on when cooking starts • Hawaii Energy incentive worksheet must be submitted with application **Complementary Programs** • ENERGY STAR Kitchen Equipment • SBDI – Restaurant Lighting • Low Flow Spray Rinse Nozzles

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.6 Commercial Industrial Processes** **5.2.6.2 – Refrigerated Case Night Covers**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 0 Cost per kWh $0.00 /kWh TRB $ 0
Incentives	**Incentive** **Unit** Refrigerated Case Night Covers $10/Linear ft. 0 Linear ft.* **but is available to participants*
Description & Implementation Strategies	**Energy Reduction Opportunity** 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. **Target Audience** Supermarkets, grocery stores, convenience stores and big box stores. **Incentive & Targeted Economics** The incentive target is $10/linear feet. **Application Process** Eligibility • Must install a cover on an existing open refrigerated display case to decrease its cooling load during off hours. • The equipment manufacturer must not object to the use of night covers for the existing display case model. • This incentive is based on linear footage of the installed night cover. • The cover must be applied for a period of at least six hours. **Complementary Programs** • EC Evaporator Fan Motors • Refrigerated case lighting

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.7 Building Envelope Improvements - Overview**		
Projected Impacts	Demand	67	kW
	Energy	254,472	kWh
	Incentive Budget	$ 52,000	(0.2%)
	Cost per kWh	$0.2043	/kWh
	TRB	$ 431,995	
Incentives		**Incentive**	**Unit**
	Window Tinting	$0.70/sq.ft	60,000 sq.ft.
	Cool Roof Technologies	$0.20/sq.ft	50,000 sq.ft.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.7 Building Envelope Improvements** **5.2.7.1 Cool Roof Technologies**
Projected Impacts	Demand 2 kW Energy 10,378 kWh Incentive Budget $ 10,000 Cost per kWh $0.9636 /kWh TRB $ 15,634
Incentives	**Incentive** **Unit** Cool Roof Technologies $0.20/sq.ft 50,000 sq.ft.
Description & Implementation Strategies	**Energy Reduction Opportunity** Cool Roofs increase the reflectivity of the roof and reduce cooling loads by either the reflective white or silver color and/or by "stealth" technologies such as ceramic and titanium oxide particles embedded in the material. The cool roof technologies allow a wide range of roof colors. **Target Audience** Who: AOAOs, Property Managers, Private and Public Facilities Directors. Roofing Companies, Architects What: All Commercial Facilities **Incentive & Targeted Economics** The offering of a $0.20/sq. ft. prescriptive incentive based on ENERGY STAR® Qualified roofing products. • *Warranty* – Roof must have a minimum fifteen-year manufacturer's warranty and one-year installer's warranty • *Conditioned Space* – Rebates shall be paid on actual square footage of roof covering a conditioned space. • *Unshaded* – Roofs significantly shaded by buildings, trees or awnings are not eligible for rebates. This is targeted to incentive will provide a 25% of the incremental cost of moving from standard to ENERGY STAR® roofing materials.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.7 Building Envelope Improvements** **5.2.7.2 Window Tinting**
Projected Impacts	Demand 65 kW Energy 244,094 kWh Incentive Budget $ 42,000 Cost per kWh $0.1721 /kWh TRB $ 416,361
Incentives	**Incentive** **Unit** Window Tinting $0.70/sq.ft. 60,000 sq.ft.
Description & Implementation Strategies	**Energy Reduction Opportunity** Window tinting can save energy by reducing the heat gain through windows as well as preventing lowering of temperature set points by occupants near the windows. Modern tints can provide the rejection of infrared energy while not blocking visible light. This expands the tinting opportunities in view sensitive locations such as hotel and office buildings. **Target Audience** Who: AOAOs, Property Managers, Private and Public Facilities Directors. Window Tinting Companies What: Hotel, Office, Condominium and Apartments & Government housing. **Incentive & Targeted Economics** The offering of a $0.85/sq. ft. prescriptive incentive based on the film's Solar Heat Gain Coefficient (SHGC) < 0.435. • *Warranty* – Film must have a minimum five-year manufacturer's warranty and one-year installer's warranty • *Conditioned Space* – Rebates shall be paid on actual square footage of glass in a conditioned space on the east, west, and south facing windows. • *Eligible Types* – Windows may be clear or factory tinted, single or double pane, but must not have reflected glass. All orientations are eligible. • *Unshaded* – Windows significantly shaded by buildings, trees or awnings are not eligible for rebates. • *Replacement Film* – Replacement of deteriorated window film is eligible for 50% of the rebate. This incentive is targeted to provide a 25% cost reduction for the installation. **Application Process** 1. A prescriptive worksheet will be completed and submitted for review • Square footage of tinting • HVAC system Information • Site Layout • Exterior photo of the south, east and west of the facility

Description & Implementation Strategies (continued)	2. Manufacturer specification sheets. 3. A request for a manufacturer's energy savings model run based on the location specific site conditions. 4. All sites will have pre/post inspections **Complementary Programs** • High Efficiency HVAC Measures • Central Plant Optimization

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.8 ENERGY STAR® Business Equipment** **5.2.8.1 ENERGY STAR® Refrigerators w/Recycling**
Projected Impacts	Demand 7 kW Energy 170,616 kWh Incentive Budget $ 12,500 (0.1%) Cost per kWh $0.0733 /kWh TRB $ 222,894
Incentives	ENERGY STAR® Refrigerators w/recycling — Incentive: $50/unit — Unit: 250 units
Description & Implementation Strategies	**Energy Reduction Opportunity** There is a 32 to 62% energy reduction opportunity in the replacement of the "old" office refrigerator with a modern ENERGY STAR® model. **Target Audience** Who: Property Managers, Executive Level Company Officers What: All Commercial **Incentive & Targeted Economics** The offering of a $125 incentive for ENERGY STAR® units bought and delivered by participating retailers. This incentive is a 10 to 25% reduction in the cost of a new ENERGY STAR® model. **Application Process** 1. A retailer submitted application and recycling verification worksheet. • Unit size, model, • Confirmation of Pickup and Recycling. • Unit location description 2. A sample of sites will have post inspections **Complementary Programs** • High Efficiency HVAC and Lighting Measures

Program Category	5.2 Business Energy Efficiency Measures 5.2.9 High Efficiency Appliances

Projected Impacts			
	Demand	8	kW
	Energy	174,975	kWh
	Incentive Budget	$ 33,750	(0.1%)
	Cost per kWh	$0.1929	/kWh
	TRB	$ 230,637	

Incentives			
		Incentive	**Unit**
	Clothes Washer (Tier II/III)	$50	0
	Refrigerator (new purchase only) < $750	$50	50
	Refrigerator (with recycling of old)	$125	250

Program Category	5.2 Business Energy Efficiency Measures 5.2.10 Energy Awareness, Measurement and Control Systems

Projected Impacts			
	Demand	94	kW
	Energy	629,446	kWh
	Incentive Budget	$ 190,000	(0.8%)
	Cost per kWh	$0.3019	/kWh
	TRB	$ 715,315	

Incentives				
		Incentive	**Unit**	
	Hotel Room Occupancy Controls	$100	500	
	Condominium Submetering	$200	500	units metered
	Small Business Submetering	$200	100	units metered
	Vending Machine Energy Control Systems	$100	200	

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.10 Energy Awareness, Measurement and Control Systems** **5.2.10.1 Hotel Room Occupancy Controls**
Projected Impacts	Demand 42 kW Energy 311,344 kWh Incentive Budget $ 50,000 Cost per kWh $0.1606 /kWh TRB $ 340,955
Incentives	**Incentive** **Unit** Hotel Room Occupancy Controls $100 500
Description & Implementation Strategies	PROGRAM OBJECTIVE • This offer is for the installation of energy management systems that gives thermostat control to existing guest room air conditioning systems using occupancy sensors. REQUIREMENTS • All entry and lanai doors must have door switches or other technologies that will de-energize the fan coil unit (FCU) when the door remains open. • All main rooms must have occupancy sensors that will de-energize the FCU when no movement is detected for a given period of time (not to exceed 15 minutes) Thermostat controls must be preset • Applicant must be on a commercial rate schedule (reference utility bill). APPLICATION • Completed Commercial and Industrial Prescriptive Incentive Application • W-9 Tax Form • Completed Hotel Guest Room EMS Worksheet • Hotel Guest Room List • Equipment Invoice: Must clearly show the manufacturer, model number and quantity. • Equipment Specification Sheets INCENTIVE • $100 per guest room controlled

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.10 Energy Awareness, Measurement and Control Systems** **5.2.10.2 Condominium Submetering**
Projected Impacts	Demand 24 kW Energy 113,329 kWh Incentive Budget $ 100,000 Cost per kWh $0.8824 /kWh TRB $ 146,035
Incentives	**Incentive** **Unit** Condominium Submetering $200 500 units metered
Description & Implementation Strategies	PROGRAM OBJECTIVE • This program 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. • Provides the AOAO an opportunity to receive an energy audit of the property and participate in other Hawaii Energy incentives for conservation in all common areas. Possible incentives could include A/C, lighting, pool pumps, domestic water pumps and parking garage exhaust fans. INCENTIVE • The payment of this $200/unit metered incentive is payable to the AOAO towards the purchase and installation of a third party submetering system. The metering system is to be used for billing purposes so that each owner or tenant of the unit metered will be responsible for the payment of their own electric consumption. • Incentive payment will be made upon completion of: installation of each meter and billing system, tenant education submetering workshop, energy audit of the AOAO property and commencement of real time billing to individual tenants. • Incentive payment cannot exceed 50% of total project cost. ENERGY SAVINGS • It is expected there will be at least a 10% reduction in energy usage; however, there is no minimum reduction in electrical use required to retain the incentive. • Currently the M&V Review found a 22.7% reduction on the projects they reviewed, but recommended no change to the 10% reduction assumption.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.10 Energy Awareness, Measurement and Control Systems** **5.2.10.2 Condominium Submetering**
Description & Implementation Strategies (continued)	REQUIREMENTS • The metering system must remain in place and billing to occur for a period of at least five (5) years or a pro-rated portion of the incentive will be recovered by Hawaii Energy. • Energy meter data (submetered billing statements) must be provided to Hawaii Energy for analysis purposes. • A joint educational and monitoring program will be undertaken with AOAO to assist in the verification of savings and development of an ongoing energy incentive offering for other condominiums in Hawaii. Components of the Pilot Program: • Physical verification review of meters serving the building. Review monthly billing history • AOAO to provide monthly individual data collection for a two month period after meter installation to Hawaii Energy. This would be the mock billing information that is supplied to the tenant. • Submetering system installation inspection review • Identification of Top (T) and Bottom (B) 5 energy users for the purpose of peer comparison. All information will be anonymous. • AOAO to host submetering and energy conservation and efficiency workshops presented by Hawaii Energy. A free energy efficient power strip will be given to encourage attendance. (If power strips are not available, Hawaii Energy reserves the right to offer a comparable promotional item.) • CFLs and LEDs can be purchased utilizing the point of purchase rebates made available by Hawaii Energy in retail outlets throughout the state. • AOAO owners/tenants are eligible for ENERGY STAR® Appliance rebates and can purchase ENERGY STAR® appliances through major retailers throughout the state. • AOAO to perform energy audit/Vendor Project Proposals with Hawaii Energy assistance on the following: 1. Common Area Lighting 2. HVAC 3. Domestic Water Pumping 4. Domestic Water Heating

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.10 Energy Awareness, Measurement and Control Systems** **5.2.10.3 Small Business Submetering**
Projected Impacts	Demand 9 kW Energy 34,073 kWh Incentive Budget $ 20,000 Cost per kWh $0.5870 /kWh TRB $ 49,934
Incentives	Small Business Submetering — Incentive: $200 — Unit: 100 units metered
Description & Implementation Strategies	• Small businesses ongoing efforts to reduce energy consumption and support the current submetering proposal as one that will ensure both fairness in allocating energy costs as well as encouraging energy conservation through direct feedback of business energy use to the tenants. • Combining the submetering program with education and audits as proposed will complete developing the tenant's newfound desire for energy conservation with the how to achieve it. • $200 per unit metered, payable to the owner or small business • The payment of the incentive will be based on owner installing and utilizing the submeters for billing purposes as well as participating in the actions proposed below. • It is expected there will be at least 10% reduction in energy use; however, there is no minimum reduction in electrical use to be required by owner to retain the incentive. • We do require that the system remain in place and billing to occur for a period of at least five (5) years or a pro-rated portion of the incentive will be recovered by Hawaii Energy. • A joint educational and monitoring program will be undertaken with owner to assist in the verification of savings and development of an ongoing energy incentive offering for other condominiums in Hawaii. • This will be a pilot program subject to review and approval of how savings will be determined. Savings methodology to be included in the TRM for 2015 programs.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.11 Energy Efficiency Equipment Grants** **5.2.11.1 – Water Cooler Timers**
Projected Impacts	Demand 149 kW Energy 1,681,256 kWh Incentive Budget $ 150,000 Cost per kWh $0.0892 /kWh TRB $1,112,357
Incentives	**Incentive** **Unit** Water Cooler Timers $15 10,000 units
Description & Implementation Strategies	**Energy Reduction Opportunity** Water coolers use a significant amount of energy. To address the vast energy waste, water cooler timers can save over 70% on water cooler electricity cost in a standard office work week. Water coolers programmed to shut down during non-usage hours will save significant amount of energy. **Target Audience** Offices **Incentive & Targeted Economics** $15 per water cooler timer **Application Process** This program will be implemented through home-office delivery (HOD) companies that provide water services. Water cooler timers will be programmed to shut down during non-usage office hours.

Program Category	**5.2 Business Energy Efficiency Measures** **5.2.12 Multi-Family Direct Install – Energy-Saving Kits**
Projected Impacts	Demand 354 kW Energy 1,303,800 kWh Incentive Budget $ 378,000 (1.6%) Cost per kWh $0.2899 /kWh TRB $ 1,488,621
Incentives	**Incentive** **Unit** Multi-Family Direct Install Energy-Saving Kits $129 2,930 Kits
Description & Implementation Strategies	Multi-family property buildings will be targeted as recipients of turn-key installations of basic energy saving items for individual units. Proposed installations include CFLs, low flow showerheads, faucet aerators, and advanced power strips. Program development will include market analysis and segmentation using input from State housing agencies, direct property manager outreach and tenant education. All measures will be installed without a customer co-pay.

5.3 Custom Business Efficiency Measures (CBEEM)

Program Category	**5.3 Custom Business Energy Efficiency Measures** **CBEEM Programs Overview**
Projected Impacts	Demand 850 kW Energy 29,785,760 kWh Incentive Budget $ 6,131,459 (26.1%) Cost per kWh $0.2059 /kWh TRB $ 35,674,387
Incentives	This program provides for incentives for all energy-savings actions that are not already covered by the prescribed incentives. Custom incentives will not be limited to a certain list of measures. **Incentive** **Units** Customized Project Measures <= 5 yrs. $0.11 3,181,818 kWh Customized Project Measures > 5 yrs. $0.19 32,693,834 kWh

Program Category	**5.3 Custom Business Energy Efficiency Measures** **5.3.1 Customized Project Measures** **5.3.1.1 Customized Project Measures <5 yrs.** **5.3.1.2 Customized Project Measures >5 yrs.**
Projected Impacts	Demand 850 kW Energy 29,785,760 kWh Incentive Budget $ 6,131,459 (26.1%) Cost per kWh $0.2059 /kWh TRB $ 35,674,387
Incentives	**Incentive** **Units** Customized Project Measures <=5 yrs. $0.11 3,181,818 kWh Customized Project Measures >5 yrs. $0.19 32,693,834 kWh
Market Barriers	• Risk Avoidance • Market acceptance of new technologies • Lack of familiarity with availability of energy efficient technology • High initial up-front cost • Life Cycle Cost vs. Simple Payback decision analysis • Need for a cash positive investment • Access to and/or understanding of financial options • Lack of knowledge of operation and maintenance of technologies
Description & Implementation Strategies	**Customized Application Process** This program will provide a custom application and granting process for participants to receive incentives for installing non-standard energy efficiency technologies. 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 specific, unique applications. Incentive awards will be based on calculated savings that ensure program cost-effectiveness. The process includes: • Program performs outreach and promotions to inform customers of incentive opportunities • Customer learns about the program offerings through various channels • Customer may call the program to request assistance. Customer or his agent 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 or with a third-party engineering firm • Program provide feedback on the project to clarify if needed • Program provides pre-inspection and/or arranges for pre-metering of existing equipment if required • Customers select and approve purchase and installation of energy efficiency measures

Program Category	**5.3 Custom Business Energy Efficiency Measures** **5.3.1 Customized Project Measures** **5.4.1.1 Customized Project Measures <=5 yrs.** **5.4.1.2 Customized Project Measures >5 yrs.**
Description & Implementation Strategies (continued)	**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 the 50% of incremental cost of the energy efficiency improvement **Customized Worksheet of Decision Criteria** We listened to feedback that the prior customized application process was mysterious and subjective. A customized worksheet was developed and implemented in PY2009 that incorporates all the information required to screen the project: • Base case and enhanced case scenarios • Project savings • Project costs The worksheet calculates and we are able to screen based on the following: • Simple Payback (>1 year or 6 months or greater for LED projects) • Incentive Amount (<=50% of incremental cost) • Total Resource Cost Ratio (>=1) Encouraged technology categories • Fresh Water Pumping / Waste Water Pumping • Data Centers - Airflow Optimization • Data Centers - Server Virtualization and Related Technologies • Parking Garages - Perimeter Dimming • Parking Ventilation Control • Demand Control Ventilation (CO2 Sensors in return airstream) • LED Refrigeration Case Lighting • LED Interior Lights • LED Traffic Lights and Exterior Lighting • Commercial Refrigeration Measures • Advanced Energy Management Controls • Variable Refrigerant Flow Air Conditioning • High Performance Commercial Lighting • Bi-Level Stairwell and Parking Garage Lighting

<table>
<tr><td>Program Category</td><td>5.3 Custom Business Energy Efficiency Measures
5.3.1 Customized Project Measures
5.4.1.1 Customized Project Measures <=5 yrs.
5.4.1.2 Customized Project Measures >5 yrs.</td></tr>
<tr><td>Key Changes</td><td>Tiered Incentives by Payback
Projects that have longer life measures often have longer paybacks, which makes it difficult for businesses to gain approvals for them.
These projects can be pushed into reality by offering increases in the incentive levels in order to enhance feasibility and get them to a point where the customers will implement them.
<table><tr><th>Measure Life</th><th>Reduction in Energy use Incentive</th></tr><tr><td><= 5 years</td><td>$0.10 /kWh</td></tr><tr><td>> 5 years</td><td>$0.18 /kWh</td></tr></table></td></tr>
<tr><td>Marketing Strategies</td><td>Offer program ally custom incentive training and workshops to ensure program allies are comfortable with utilizing all aspects of the custom incentive program to sell more energy-efficient options to their respective customers
Maintain direct contact with key market players to understand the markets and decision points and to leverage their marketing resources to inform members
Email informational campaigns
Award and publish success of customer and ally partners to demonstrate highest level leadership in an effort to pull the market</td></tr>
</table>

5.4 Business Service and Maintenance (BESM)

Program Category	**5.4 Business Energy Services & Maintenance** **BESM Program Overview**
Projected Impacts	Demand 10 kW Energy 609,957 kWh Incentive Budget $780,000 (3.3%) Cost per kWh $1.28 /kWh TRB $199,379
Incentives	**5.4.1 Business Design, Audits & Commissioning**

	Incentive	Units
Benchmark Metering	$75,000	2 Groups
Decision Maker – Real-Time Submeters	$80,000	1 Project
Energy Audit	$5,000	10 Studies
Energy Study Project Implementation (100%)	$25,000	2 Studies
Energy Study Assistance (50%)	$15,000	5 Studies
Design Study Assistance (50%)	$15,000	2 Designs
Education Facilities – Submetering for Energy Programs	$75,000	1 Participants
Water/Wastewater Catalyst	$1.25/kwh	80,000 kWh
ENERGY STAR® Portfolio Scoring Rewards	$7,000	10 Participants
System Retro-commissioning	$20,000	5 Projects

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.1 Benchmark Metering**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 150,000 Cost per kWh $000 /kWh TRB $0
Incentives	**Incentive** **Unit** Benchmark Metering $75,000 2 Groups
Description & Implementation Strategies	The Benchmark Metering incentive is designed to encourage business customers to install a central chiller plant metering and data logging system that will provide real-time data and trend data. This data reflects actual tons of cooling and measured efficiency in KW per ton. The new equipment will make it possible for the customer to set meaningful energy efficiency goals and track progress towards those goals. With the Hawaii Energy incentive, there is no cost to the customer for the metering equipment or installation (up to $75,000). **Procedure** Customer: 1. Have a central chiller plant (or a central chiller plant project in the planning phase) with a total building electrical energy consumption of at least 3 million kWh per year. 2. Complete and submit Central Chiller Plant Benchmarking Application 3. The Hawaii Energy monitoring and data acquisition server shall be located at the customer's site and connected to the internet via customer's connection. 4. Submit to Hawaii Energy all payee information and the IRS Form W-9 at the beginning of every calendar year for processing of the IRS Form 1099. It is understood that Hawaii Energy will forward a copy of the IRS Form 1099 to the payee at the end of the calendar year. 5. Agree to inspection of project for up to 5 years after completion Industry Partners: 1. Assist customer in submission of application, savings estimate worksheet, and project proposal. 2. Provide quotations for metering installation at customer's location. Only firm/fixed cost quotes will be accepted by Hawaii Energy. 3. Provide supporting documentation to support information submitted on Worksheet. Information may include drawings, vendor cut sheets, energy savings estimates (methodology and calculations). 4. Install approved measures and required metering/monitoring equipment

	Hawaii Energy: 1. Review application, worksheet, and proposal to determine if proposed project meets the intent of the program. 2. Perform post installation inspection to ensure all measures/equipment are properly install and operational. 3. Process approved incentive payments (to customer or authorized third party) based on validated savings calculations 4. Prepare and file close out report documenting actual savings achieved and incentives paid.
Marketing Strategies	Direct contact with Mechanical Services companies, chief engineers, property managers and manufacturers' representatives,

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.2 Decision Maker – Real-Time Submeters**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $80,000 Cost per kWh $000 /kWh TRB $0
Incentives	**Incentive** **Units** Decision Maker - Real-Time Submeters $80,000/Project 1 Projects
Description & Implementation Strategies	**Energy Reduction Opportunity** There are individuals within business organization who have influence over large numbers of employees whose behavior within the work environment drive unnecessary energy consumption. Examples can be leaving on lights, additional electronic equipment, and items such as foot heaters and additional fans that mask larger energy efficiency issues etc. This will be a pilot program subject to review and approval of how savings will be determined. Savings methodology to be included in the TRM for 2015 Programs. **Target Audience** Who: Property Managers, Executive Level Company Officers What: All Commercial **Incentive & Targeted Economics** The offering of the direct installation or materials with in-house installation of web-based electrical metering. This metering will be monitored by decision makers within the organization to identify usage patterns and be the basis of peer group competitions within the organization. **Application Process** An MOU will be developed with the customer that will outline the purpose and process of setting up education and peer group competitions within their businesses. **Complementary Programs** • High Efficiency HVAC • High Efficiency Lighting Measures

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.3 Energy Audit**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 50,000 (0.1%) Cost per kWh $0.00 /kWh TRB $0
Incentives	**Incentive** **Unit** Energy Audit $5,000 10 Studies
Description & Implementation Strategies	This offer is designed to promote energy-saving evaluations of building equipment and operations that consume electricity. Hawaii Energy provides an incentive for a portion of the existing facility's energy consumption analysis through a two phase process: (1) the completion of a preliminary energy audit (see Energy Audit Worksheet from website) and (2) a detailed energy study upon approval of the audit. Pre-approval is required prior to the start of any audit in order to ensure budget availability, review any prior studies at the location, and have a discussion about the goals and context of the energy analysis.

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.4 Energy Study Project Implementation - 100%**
Projected Impacts	Demand 0kW Energy 0kWh Incentive Budget $ 50,000 Cost per kWh $0.00/kWh TRB $0
Incentives	**Incentive** **Units** Energy Study Assistance $25,000/study 2 studies
Description & Implementation Strategies	• 100% Funded up to $25,000 • Customer agrees to implement reccomendations with less than 2 year paybacks within 1 year up to the value of the energy study or pays back 50% of the energy study cost. • Load / Existing Performance Measurements • Modeling new systems • Actionable recommendations

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.5 Energy Study Assistance**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 75,000 Cost per kWh $0.00 /kWh TRB $0
Incentives	**Incentive** **Units** Energy Study Assistance $15,000/study 5 studies
Description & Implementation Strategies	• 50% matching up to $15,000 • Load / Existing Performance Measurements • Modeling new systems • Actionable recommendations

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.6 Design Assistance**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 30,000 Cost per kWh $0.00 /kWh TRB $0
Incentives	**Incentive** **Units** Energy Study Assistance $15,000/Design 2 Designs
Description & Implementation Strategies	• 50% matching up to $15,000 for projects exceeding code requirements • Meet targeted energy efficiency levels • Actionable recommendations
Marketing Strategies	• Direct interaction with potential customers and mechanical engineers • Promote measure information on the website • Promote successful projects in the media and events

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.7 Education Facilities – Submetering for Energy Programs**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 75,000 Cost per kWh $0.00 /kWh TRB $0
Incentives	**Incentive** **Units** Submetering for Energy Programs $75,000 1 Participants

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.8 Water/Wastewater Energy Project Catalyst**
Projected Impacts	Demand 10 kW Energy 84,132 kWh Incentive Budget $ 100,000 Cost per kWh $1.19 /kWh TRB $140,295
Incentives	**Incentive** **Units** W/WW Energy Project Catalyst $1.25/kWh 80,000 kWh
Description & Implementation Strategies	The objective of the catalyst program is to accelerate stalled high impact UV disinfection project. • *5 year Cost Neutral Incentive* – This measure will provide the funding required to drive this project into a 5 year lease that is cash neutral for the customer.

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.9 ENERGY STAR® Portfolio Scoring Rewards**
Projected Impacts	Demand 0 kW Energy 0 kWh Incentive Budget $ 70,000 Cost per kWh $0.00 /kWh TRB $0
Incentives	**Incentive** **Units** ENERGY STAR® Portfolio Scoring Rewards 7,000 10 Participants
Description & Implementation Strategies	ENERGY STAR® is a program of the US Environmental Protection Agency and the US Department of Energy. ENERGY STAR® Portfolio Manager provides a valuable platform for capturing baseline data and tracking energy efficiency improvements over time. There are commercially available programs and web based platforms that facilitate data acquisition, entry and updating into both the ENERGY STAR® Portfolio Manager and other privately secured data bases. The Program will provide a web-based platform that shall be used to provide this energy efficiency benchmarking and other energy use indexes in a common format allowing both The Program, Industry partners and end users to see and use this information to facilitate intelligent energy efficiency decisions in future Operations & Maintenance (O&M) and capital improvement plans. Targeted incentives will be offered to participants of this program based on their ENERGY STAR® Rating number. If a building does not qualify for an ENERGY STAR® Rating number they will be encouraged to participate in our custom incentive program. Below are the targeted Incentives to be provided: **<75** – These facilities are considered a very low performing facility and in need of major facility improvements. For these facilities we will offer our Whole Building Assistance Program; Energy Audits , Energy Studies, and Design assistance, **75-90** - These facilities are considered high performing buildings and may need specific energy efficiency upgrades. For these facilities we will offer Certification assistance. **>90** – These facilities are considered optimal performing buildings and need very specific projects in order to tweak existing system. For these Facilities we will offer Decision Maker Metering, a program that by installation of sub metering allows decision makers to focus efforts on energy wasters that may not otherwise be obvious.

Program Category	**5.4 Business Energy Services & Maintenance** **5.4.1 Business Design, Audits and Commissioning** **5.4.1.10 System Retro-commissioning**
Projected Impacts	Demand 0 kW Energy 525,825 kWh Incentive Budget $ 100,000 Cost per kWh $0.19 /kWh TRB $140,295
Incentives	**Incentive** **Units** System Retro-commissioning $20,000 5 Projects
Description & Implementation Strategies	**Energy Reduction Opportunity** Often, re- and retro-commissioning activities have fairly modest project costs, but return significant energy and demand savings. 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/low cost operational adjustments and sequencing, low-cost equipment optimization, and capital improvement projects. **Incentive** • *Minimum of: $0.20/SF, 50% study cost, or $15,000* • *Additional $0.10 per kwh saved and $125 per kW (5-9 PM)* • *Max incentive = 80% of total project cost*

5.5 Business Hard-to-Reach (BHTR)

Program Category	**5.5 Business Hard-to-Reach** **BHTR Program Overview**
Target Market	Small Business Customers receiving electric power under a Schedule "G" rate are eligible under this program. Small customers similar to Schedule "G" customers that are under master-metered accounts would also be eligible. The program will target the 50,000 customers within the small business market that have limited time and expertise within their organizations to research lighting technology options, obtain financing and contract with lighting contractors to replace their older less efficient lighting technologies. **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 proven effective in generating attention and participation. It also allows the Program to gather information on equipment and operations, and present opportunities for 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 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.

Schedule "G" Customers	
Oahu	29,117
Big Island	12,614
Maui	8,503
Lanai	194
Molokai	498
Totals	50,926

Projected Impacts			
	Demand	1,225	kW
	Energy	8,961,690	kWh
	Incentive Budget	$2,442,215	(10.4%)
	Cost per kWh	$0.2725	/kWh
	TRB	$11,738,851	

Incentives

5.5.1 Small Business Direct Installation

	Incentive	Units	
Retrofitted Lamps	$69.67	15,582	Lamps
Custom Lighting	$0.25	80,000	kWh
Refrigerated Cases	$1.10	45,455	kWh

5.5.2 Restaurant Targeted Participation Programs

	Incentive	Units	
ENERGY STAR® Commercial Kitchen Equipment	$0.23/kWh	978,261	kWh
Low Flow Spray Rinse Nozzles	$22	500	units
SBDI - Kitchen Exhaust Hood Demand Ventilation	$1,700	50	hp
SBDI - Restaurant Lighting Retrofitted Lamps	$64.33	13,965	Lamps
Custom Lighting	$0.25	269,180	kWh

Program Category	**5.5 Business Hard to Reach** **5.5.1 Small Business Direct Installation** **5.5.1.1 – SBDI Lighting Retrofits** **5.5.1.2 – SBDI Refrigeration Retrofits**
Projected Impacts	Demand 242 kW Energy 2,826,938 kWh Incentive Budget $ 1,155,595 (4.9%) Cost per kWh $0.4088 /kWh TRB $4,168,194
Incentives	**Incentive** **Units** Small Business Direct Lighting Retrofits Retrofitted Lamps $69.67 15,582 Lamps Custom Lighting $0.25 80,000 kWh Refrigerated Cases $1.10 45,455 kWh
Technologies	Small Business Lighting Retrofit providing a "Turnkey" program consisting of audits, 100% incentivized lighting measures, installation by participating Hawaii Energy Participating contractors and 6 month financing of lighting retrofit costs of custom measures beyond the cost per kWh incentive. The 100% incentive levels will be reviewed to insure that changes in equipment pricing (LEDs in particular) are taken into account.
Market Barriers	• Trust in equipment vendors/contractors • Lack of familiarity with energy efficient lighting technologies • Inability to obtain project financing • Lack of time and expertise to seek and select lighting contractors • Life Cycle Cost vs. Simple Payback decision analysis
Description & Implementation Strategies	• Provide complete process to provide direct installation of lighting retrofits for small business customers. • Participating Hawaii Energy Participating contractors will offer six month payment plans for the lighting retrofits • Use of workforce development groups and grass roots volunteer organizations to generate leads and perform initial audits to lower cost of sales for Lighting contractors • Quick Inventory worksheet to ID potential targeting for future mechanical measures (AC/Water heating/Appliances/Refrigeration)
Marketing Strategies	• Direct contact with participating lighting contractors • Direct contact with Small Business Administration • Direct contact and printed materials to Property Management groups • Door-to-Door contact through Grassroots Action Groups • Website listing of participating lighting contractors

Program Category	**5.5 Business Hard to Reach** **5.5.2 Restaurant-Targeted Participation Programs** **5.5.2.1 - ENERGY STAR® Commercial Kitchen Equipment**
Projected Impacts	Demand 214 kW Energy 1,072,105 kWh Incentive Budget $ 225,000 (1.0%) Cost per kWh $0.2099 /kWh TRB $1,069,842
Incentives	**Incentive** **Unit** Commercial Kitchen Equipment $0.23/kWh 978,261 kWh
Description & Implementation Strategies	**Energy Reduction Opportunity** This program will start with direct installation of variable exhaust ventilation systems that adjust to the cooking exhaust loads. **Target Audience** Who: Restaurants and commercial kitchens What: Commercial Kitchen Equipment **Incentive & Targeted Economics** This program will have a variety of incentives for dozens of equipment types. It is expected that the average cost per kWh will be $0.23/kWh. **Application Process** This program will be implemented through specialty contractors with prescriptive incentives although the program is expressed on a dollar per kWh basis in the plan. The program will also develop a vendor-driven program that will provide them direct incentives and the support of Hawaii Energy technology papers and sales call assistance. **Complementary Programs** • Target Cost per kWh Request for Proposals

Program Category	**5.5 Business Hard-to-Reach** **5.5.2 Restaurant-Targeted Participation Program** **5.5.2.2 Low Flow Spray Rinse Nozzles**
Projected Impacts	Demand 493 kW Energy 1,995,689 kWh Incentive Budget $11,000 Cost per kWh $0.0055 /kWh TRB $1,866,399
Incentives	**Incentive** **Units** Low Flow Spray Rinse Nozzles $22 500 units
Description & Implementation Strategies	A low-flow pre-rinse spray valve is one of the easiest and most cost-effective energy-saving devices available to the foodservice operator. In addition to minimizing water consumption, water heating energy and sewer charges are also reduced.

Program Category	**5.5 Business Hard-to-Reach** **5.5.2 Restaurant-Targeted Participation Programs** **5.5.2.3 SBDI - Kitchen Exhaust Hood Demand Ventilation**
Projected Impacts	Demand 25 kW Energy 144,279 kWh Incentive Budget $85,000 Cost per kWh $0.5891 /kWh TRB $274,069
Incentives	**Incentive** **Unit** SBDI - Kitchen Exhaust Hood Demand Ventilation $1,700 50 hp
Market Barriers	• Familiarity with technology • Vendor/Contractor sales and support in Hawaii for technology • Customer lack of access to capital for energy improvements • Renter and Lessee reluctance to invest in non-owned property
Description & Implementation Strategies	**Energy Reduction Opportunity** Kitchen Exhaust hoods run typically at full speed during the operating hours of the restaurant. These controller systems monitor the cooking surfaces for heat and/or particulates in the air to run the fans only when needed. Saving the energy that is wasted during idle periods. **Target Audience** Who: Restaurant Owners, Hawaii Restaurant Association What: Restaurants **Incentive & Targeted Economics** The offering of the direct installation 100% cost incentive. Work to be performed by participating contractors/manufacturers. **Application Process** • Targeted Anticipation and Vendor Driven leads drive interest. • Application and site audit information • Agreement to allow marketing/promotions in Restaurant regarding work performed and savings achieved.

Program Category	**5.5 Business Hard-to-Reach** **5.5.2 Restaurant-Targeted Participation Programs** **5.5.2.4 SBDI - Restaurant Lighting**
Projected Impacts	Demand 250 kW Energy 2,922,679 kWh Incentive Budget $965,620 (4.1%) Cost per kWh $0.34 /kWh TRB $4,360,347
Incentives	**Incentive** **Units** Retrofitted Lamps $64.33 13,965 Lamps Custom Lighting $0.25 269,180 kWh
Market Barriers	• Customer lack of access to capital for energy improvements • Renter and Lessee reluctance to invest in non-owned property
Description & Implementation Strategies	• Provide complete process to provide direct installation of lighting retrofits for small business customers. • Participating Hawaii Energy Participating contractors will offer six month payment plans for the lighting retrofits • Use of workforce development groups and grass roots volunteer organizations to generate leads and perform initial audits to lower cost of sales for Lighting contractors • Quick Inventory worksheet to ID potential targeting for future mechanical measures (AC/Water heating/Appliances/Refrigeration)
Marketing	• Direct contact with participating lighting contractors • Direct contact with Small Business Administration • Direct contact and printed materials to Property Management groups • Door-to-Door contact through Grassroots Action Groups • Website listing of participating lighting contractors

Program Category	**5.5 Business Hard-to-Reach** **5.5.2 Restaurant Targeted Participation Program** **5.5.2.4 SBDI - Restaurant Lighting**
Technologies	A "Turnkey" program consisting of audits, 100% incentivized lighting measures, installation by participating Hawaii Energy Participating contractors and 6 month financing of lighting retrofit costs of custom measures beyond the cost per kWh incentive. The 100% incentive levels will be reviewed to insure that changes in equipment pricing (LEDs in particular) are taken into account.
Market Barriers	• Trust in equipment vendors/contractors • Lack of familiarity with energy efficient lighting technologies • Inability to obtain project financing • Lack of time and expertise to seek and select lighting contractors • Life Cycle Cost vs. Simple Payback decision analysis

6.0 PROGRAM BUDGET

Below is a summary of the PY15 Budget.

Table 2
Annual Plan Budget
July 1, 2015 through June 30, 2016

Activity	Non-Incentive	Incentive	Total
Residential Programs			
REEM	2,220,000	8,614,690	10,834,690
CESH	135,000	1,011,000	1,146,000
RESM	100,000	250,000	350,000
RHTR	620,000	682,250	1,302,250
Total Residential Programs	**3,075,000**	**10,557,940**	**13,632,940**
Residential Market Evaluation	**200,212**	**0**	**200,212**
Residential Outreach	**564,281**	**0**	**564,281**
Total Residential Services and Initiatives	**3,839,493**	**10,557,940**	**14,397,433**
Business Programs			
BEEM	1,150,000	3,561,800	4,711,800
CBEEM	1,170,000	6,131,459	7,301,459
BESM	620,000	780,000	1,400,000
BHTR	620,000	2,442,215	3,062,215
Total Business Programs	**3,560,000**	**12,915,474**	**16,475,474**
Business Market Evaluation	**234,551**	**0**	**234,551**
Business Outreach	**643,234**	**0**	**643,234**
Total Business Services and Initiatives	**4,437,785**	**12,915,474**	**17,353,259**
Total Residential and Business Services and Initiatives	**8,277,278**	**23,473,414**	**31,750,692**
Transformational Programs			
Residential Transformational Programs	0	1,595,166	1,595,166
Business Transformational Programs	0	1,656,794	1,656,794
Total Transformation Services and Initiatives	**0**	**3,251,960**	**3,251,960**
Total Supporting Services	**2,522,354**	**0**	**2,522,354**
Total Tax on Non-Incentive	**508,879**	**0**	**508,879**
Sub-Total Estimated Contractor Costs	**11,308,511**	**26,725,374**	**38,033,885**
Performance Awards in Excess of Target Levels			**0**
Total Estimated Contractor Costs			**38,033,885**

This table provides a program-level itemization of the overall contract budget. While the contractual budget categories and limitations are as set forth in the contract, the Hawaii Energy team will continue reporting status of budget and expenditures at the program-level, consistent with prior years. Formal changes to the contract budget will be in accordance with the contract.

7.0 PERFORMANCE INCENTIVE GOALS AND INCENTIVE WEIGHTING

The following table shows the PY15 Program Performance Goals and Incentives will be contained in the supplemental contract covering the PY15 budget. The transition between Minimum, Target and Maximum shall be calculated on a linear basis for both goals and awards where appropriate.

Table 3
Performance Goals and Performance Incentives

Hawaii Energy - PY15 - Performance Goals and Performance Incentives									
Performance Target Item	***Performance Goals***					***Award***	***Program Incentive Award***		
Resource Acquisition	***Minimum***	***Target***	***Maximum***			***Fraction***	***Minimum***	***Target***	***Maximum***
	75%	*100%*	110%				75%	*100%*	100.0%
First Year Energy Reduction	91,682,791	122,243,721	134,468,093	kWh		35%	$ 183,750	$ 245,000	$ 245,000
Peak Demand Reduction	12,863	17,150	18,865	kW		5%	$ 26,250	$ 35,000	$ 35,000
Total Resource Benefit	$ 119,529,625	$159,372,834	$ 175,310,117	$		40%	$ 210,000	$ 280,000	$ 280,000
Island Incentive Equity	***Minimum***	***Target***	***Maximum***	***Contribution***	All Items must be met for award		***Minimum***	***Target***	***Maximum***
	80%	100%				10%	n/a	$ 70,000	$ 70,000
County of Hawaii	$ 2,779,439	$ 3,474,299	n/a	13.0%					
C&C Honolulu	$ 15,821,421	$ 19,776,777	n/a	74.0%					
County of Maui	$ 2,779,439	$ 3,474,299	n/a	13.0%					
Total		$ 26,725,374		100.0%					
Market Transformation	***Minimum***	***Target***	***Potential Actions***				***Minimum***	***Target***	***Maximum***
	70%	100%							
Behavior Modification	12,600	18,000	Participants			2%	$ 11,250	$ 15,000	$ 15,000
Professional Development	560	800	Participants			2%	$ 11,250	$ 15,000	$ 15,000
Technical Training	140	200	Participants			2%	$ 11,250	$ 15,000	$ 15,000
Hawaii Energy Ally Program	175	250	New Allies			1%	n/a	$ 5,000	$ 5,000
Benchmarking	105	150	Sites EUI/Peer Group Evaluated		All Target Items must be met for award	3%	n/a	$ 20,000	$ 20,000
Codes & Standards	1 Action	2 Actions	1. Incentive Program for Early Code Adoption 2. Code Compliance Assistance						
Smart Grid	1 Action	1 Action	Continue with PY 14 Smart grid In-Home Display Pilot project						
Demand Response	1 Action	2 Actions	1. Continued evaluation of current heat pump water heater pilot 2. Deployment of DR-enabled water heaters at newly constructed large apartment building						
Electric Vehicle	1 Action	2 Actions	1. Marketing Materials to raise EE/EV awareness 2. Upgrade the EV kit offering to online fulfillment						
Total						100%	$ 453,750	$ 700,000	$ 700,000

8.0 CONCLUSION

On July 1, 2015, Leidos begins its seventh and final Program Year as Hawaii's first Public Benefits Fee Administrator. During this final year we will continue adding to our experience curve as we further explore what works best for Hawaii's energy efficiency and related clean energy efforts in this rapidly changing energy environment. With this cumulative experience and the engaged support of our PUC, allies and customers, this PY15 Annual Plan will close out Hawaii's first PBFA Contract on June 30, 2016 with a strong forward momentum towards achieving Hawaii's long term clean energy goals.

Beginning with the new PBFA Contract starting July 1, 2016, the Hawaii Efficiency Program and its chosen Administrator will be able to stand on the Program's cumulative achievements to reach even more challenging levels of energy savings and clean energy grid integration going forward. The Leidos Hawaii Energy Team is committed to working hard and smart to ensure that it will be our Team that has the privilege of continuing this important work for the people of Hawaii.

MAHALO,
The Leidos Hawaii Energy Team

9.0 APPENDIX

APPENDIX A Program-Level Budget PY2015 (Expanded Version)

As noted above, while the contract sets forth the overall budget categories and limitations, status of Hawaii Energy PY15 budget and expenditures will be reported at this itemized program-level.

Hawaii Energy Efficiency Program Annual Plan Budget	PY15 Budget
Residential Programs	
Residential Program Ops and Management	
REEM	2,220,000
CESH	135,000
RESM	100,000
RHTR	620,000
Subtotal Residential Programs	3,075,000
Residential Market Evaluation	200,212
Residential Outreach	564,281
Total Residential Non-Incentive	*3,839,493*
Residential Incentives	
REEM	8,614,690
CESH	1,011,000
RESM	250,000
RHTR	682,250
Subtotal Residential Incentives	10,557,940
Residential Transformational	1,595,166
Total Residential Incentives	*12,153,106*
Total Residential Programs	**15,992,599**
Business (C&I) Programs	
Business Programs Ops and Management	
BEEM	1,150,000
CBEEM	1,170,000
BESM	620,000
BHTR	620,000
Subtotal Business Programs	3,560,000
Business Evaluation	234,551
Business Outreach	643,234
Total Business Non-Incentive	*4,437,785*
Business Incentives	
BEEM	3,561,800
CBEEM	6,131,459
BESM	780,000
BHTR	2,442,215
Subtotal Business Incentive	12,915,474
Business Transformational	1,656,794
Total Business Incentives	*14,572,268*
Total Business Programs	**19,010,053**
Supporting Services	
Supporting Services	2,522,354
Total Supporting Services	**2,522,354**

	-
Subtotal Non-Incentive (Prior to Tax)	10,799,632
Less Performance Incentives (Prior to Tax)	(668,500)
Subtotal Non-Incentive Less Performance Incentives (PI)	10,131,132
Total Tax on Non-Incentive Without PI	477,379
Performance Incentive Award (Inclusive of Tax)	700,000
Subtotal Non-Incentive Billed	*11,308,511*
Subtotal Residential and Business Customer Incentives	*23,473,414*
Subtotal Transformational Incentives	*3,251,960*
Subtotal Customer and Transformational Incentives	*26,725,374*
Sub-Total Estimated Contractor Costs	***38,033,885***
Performance Awards in Excess of Target Levels	-
Total Estimated Contractor Costs	**38,033,885**

Hawaii Energy - PY2015 ANNUAL PLAN - SUMMARY PRESENTATION OF PROGRAMS BY MEASURE

Item	Incentives	Transformati	Total	Program kW	Program kWh - 1st yr.	TRB $		Cost	Customer kWh - 1st yr.
Residential Direct Incentives Only	$ 10,557,940		$ 10,557,940	11,016	60,490,414	$ 71,287,622			67,866,011
Business Direct Incentives Only	$ 12,915,474		$ 12,915,474	6,134	61,753,307	$ 88,085,212			71,215,193
Total Direct Incentives Only	$ 23,473,414		$ 23,473,414	**17,150**	**122,243,721**	**$ 159,372,834**		$ 38,033,885	139,081,204
Program Targets				17,150	122,243,721	$ 159,372,834	RHTR	$ (682,250)	(897,225)
Residential Transformational Incentives		$ 1,595,166					BHTR	$ (2,442,215)	(8,177,247)
Business Transformational Incentives		$ 1,656,795			Custom Residential Hard to Reach Efficiency Measures			$ (300,000)	(1,034,483)
Total Transformational Incentives		$ 3,251,960			Customer Level Totals for CSE Calculation			$ 34,609,420	128,972,249

Item	G&A	T&M	Incentives		Total	CSE - $	CSE - kWh	CSE - $/kWh
Total Program Budget	$ 2,641,208	$ 8,667,303	$ 23,473,414	$ 3,251,960	$ 38,033,885	$ 34,609,420	128,972,249	$ 0.0339

Program, Category, Measure	Count		Average Participant Incentive per Unit	Estimated Budget ($)	% Total Program Budget (%)	Peak Demand Reduction per Unit (kW/Unit)	Energy Reduction per Unit (kWh/Unit)	Program Demand (kW Peak)	Program Energy (kWh/Year)	TRB ($)	Life (yrs.)	Program 1st Year ($/kWh)	Customer Energy (kWh/Year)	Program Lifetime Energy (kWh/Life)
Residential				$ 10,557,940	27.8%			11,016	60,490,414	$ 71,287,622	9.1	$ 0.1745	67,866,011	549,238,079
REEM				$ 8,614,690	22.7%			10,723	54,893,060	$ 67,156,042	9	$ 0.1569	62,768,641	513,665,989
High Efficiency Water Heating				*$ 1,359,000*	*3.6%*			*749*	*3,916,128*	*$ 8,327,034*	*17*	*$ 0.3470*	*4,477,980*	*65,383,011*
Solar Water Heater - Contractor Incentive	1,052	systems	$ 750	$ 789,000	2.1%	0.4600	2,065	423	1,899,811	$ 4,827,466	20	$ 0.4153	2,172,380	37,996,230
Solar Water Heater - Interest Buydown	50	systems	$ 750	$ 37,500	0.1%	0.4600	2,065	20	90,295	$ 229,442	20	$ 0.4153	103,250	1,805,904
Solar Water Heater - OBF Contribution	350	systems	$ 750	$ 262,500	0.7%	0.4600	2,065	141	632,067	$ 1,606,096	20	$ 0.4153	722,750	12,641,331
Water Heating - New Technology Pilots and Testing	-	systems	$ -	$ -	0.0%	0.0000	-	-	-	$ -	20	$ -	-	-
Heat Pumps	900	units	$ 300	$ 270,000	0.7%	0.2100	1,644	165	1,293,955	$ 1,664,031	10	$ 0.2087	1,479,600	12,939,546
Renewable Integration - Digital Timer Devices	-	units	$ 100	$ -	0.0%	0.0855	410	-	-	$ -	10	$ -	-	-
Renewable Integration - Two-Way Enabling Device	-	units	$ 150	$ -	0.0%	0.0000	-	-	-	$ -	10	$ -	-	-
High Efficiency Lighting				*$ 3,918,859*	*10.3%*			*4,663*	*33,011,880*	*$ 44,639,246*	*11*	*$ 0.1187*	*37,748,139*	*354,212,715*
CFLs	900,000	lamps	$ 1.10	$ 990,000	2.6%	0.0028	19.9	2,204	15,662,832	$ 13,752,718	6	$ 0.0632	17,910,000	93,976,994
LED	781,029	lamps	$ 3.75	$ 2,928,859	7.7%	0.0036	25.4	2,459	17,349,048	$ 30,886,528	15	$ 0.1688	19,838,139	260,235,722
High Efficiency Air Conditioning				*$ 331,250*	*0.9%*			*537*	*1,267,325*	*$ 3,939,842*	*14*	*$ 0.2614*	*1,449,150*	*20,993,180*
VRF Split System AC	1,000	units	$ 200	$ 200,000	0.5%	0.3000	583	262	509,851	$ 1,684,826	15	$ 0.3923	583,000	7,647,765
Window AC with Recycling	500	units	$ 80	$ 40,000	0.1%	0.0540	198	24	86,491	$ 137,916	9	$ 0.4625	98,900	778,419
Ceiling Fans - Under $80 Fans for HTR Households w/lights	1,000	units	$ 35	$ 35,000	0.1%	0.0120	65	10	56,844	$ 47,019	5	$ 0.6157	65,000	284,222
Solar Attic Fans	300	units	$ 50	$ 15,000	0.0%	0.0000	502	-	131,704	$ 190,492	20	$ 0.1139	150,600	2,634,084
Whole House Fans	550	units	$ 75	$ 41,250	0.1%	0.5000	1,003	240	482,434	$ 1,879,590	20	$ 0.0855	551,650	9,648,689
High Efficiency Appliances				*$ 539,000*	*1.4%*			*158*	*3,792,803*	*$ 4,902,517*	*11*	*$ 0.1421*	*4,336,962*	*52,374,395*
Refrigerator (with Recycling of Old)	4,000	units	$ 100	$ 400,000	1.1%	0.0340	822	119	2,875,455	$ 3,756,511	14	$ 0.1391	3,288,000	40,256,365
Garage Refrigerator / Freezer Bounty	1,000	units	$ 85	$ 85,000	0.2%	0.0340	859	30	751,221	$ 976,182	14	$ 0.1131	859,000	10,517,098
Pool VFD Controller Pumps	200	units	$ 150	$ 30,000	0.1%	0.0060	597	1	104,473	$ 96,837	10	$ 0.2872	119,462	1,044,731
Refrigerator (Purchase New Only) <$750	300	units	$ 50	$ 15,000	0.0%	0.0170	105	4	27,548	$ 48,934	14	$ 0.5445	31,500	385,668
Advanced Power Strips	500	units	$ 18	$ 9,000	0.0%	0.0089	78	4	34,107	$ 24,053	5	$ 0.2639	39,000	170,533
Energy Efficiency Equipment Grants				*$ 226,000*	*0.6%*			*1,007*	*1,774,946*	*$ 2,643,389*	*5*	*$ 0.1273*	*2,029,600*	*8,874,730*
Online Marketplace - Home Energy Saving Kits - Advanced (Copay)	2,000	Packs	$ 30	$ 60,000	0.2%	0.0157	135	27	236,123	$ 167,414	5	$ 0.2541	270,000	1,180,616
Online Marketplace - Home Energy Saving Kits - Standard (Free)	8,300	Packs	$ 20	$ 166,000	0.4%	0.1350	212	980	1,538,823	$ 2,475,975	5	$ 0.1079	1,759,600	7,694,115
Energy Awareness, Measurement and Control Systems				*$ 2,240,581*	*5.9%*			*3,609*	*11,129,977*	*$ 2,704,012*	*4*	*$ 0.2013*	*12,726,810*	*11,827,957*
Room Occupancy Sensors & Timers	200	units	$ 8.00	$ 1,600	0.0%	0.0046	21	1	3,638	$ 4,803	8	$ 0.4398	4,160	29,104
Peer Group Comparison - Phase 1/2/3	132,500	homes	$ 9.02	$ 1,194,675	3.1%	0.0170	52	1,970	5,976,844	$ 1,425,083	1	$ 0.1999	6,834,350	5,976,844
Peer Group Comparison - Phase 4	110,000	homes	$ 9.02	$ 991,806	2.6%	0.0170	52	1,635	4,961,908	$ 1,183,088	1	$ 0.1999	5,673,800	4,961,908
Water Cooler Timers - HOD Distribution	500	units	$ 15	$ 7,500	0.0%	0.0000	51	-	22,301	$ 11,327	5	$ 0.3363	25,500	111,503
Small Appliance / Lighting / Bathroom Fan - Timers	1,000	units	$ 5	$ 5,000	0.0%	0.0000	25	-	21,863	$ 16,468	8	$ 0.2287	25,000	174,906
In Home Display - Coincentive with Appliances/Direct Install	200	units	$ 100.00	$ 20,000	0.1%	0.0070	410	1	71,711	$ 31,622	4	$ 0.2789	82,000	286,846
Home Energy Management Systems/In Home Display	200	units	$ 100	$ 20,000	0.1%	0.0070	410	1	71,711	$ 31,622	4	$ 0.2789	82,000	286,846

Hawaii Energy - PY2015 ANNUAL PLAN - SUMMARY PRESENTATION OF PROGRAMS BY MEASURE

Residential Programs Continued

Program, Category, Measure	Count		Average Participant Incentive per Unit	Estimated Budget ($)	% Total Program Budget (%)	Peak Demand Reduction per Unit (kW/Unit)	Energy Reduction per Unit (kWh/Unit)	Program Demand (kW Peak)	Program Energy (kWh/Year)	TRB ($)	Life (yrs.)	Program 1st Year ($/kWh)	Customer Energy (kWh/Year)	Lifetime Energy (kWh/Life)
CESH				$ 1,011,000	2.7%			-	4,081,636	$ 2,073,161	5	$ 0.2477	3,687,114	20,408,178
Customized Project Measures				*$ 1,011,000*	*2.7%*			*-*	*4,081,636*	*$ 2,073,161*	*5*	*$ 0.2477*	*3,687,114*	*20,408,178*
Direct Install - Green Neighborhood Program Carry Over	1,600,000	kWh	$ 0.32	$ 511,000	1.3%	0.0000	1	-	1,771,200	$ 899,635	5	$ 0.2885	1,600,000	8,856,000
Hawaii Energy - Efficiency Project Auction	-	kWh	$ 0.35	$ -	0.0%	0.0000	1	-	-	$ -	5	$ -	-	-
Custom Residential Lighting Efficiency Measures	1,052,632	kWh	$ 0.19	$ 200,000	0.5%	0.0000	1	-	1,165,263	$ 591,865	5	$ 0.1716	1,052,632	5,826,316
Custom Residential Hard to Reach Efficiency Measures	1,034,483	kWh	$ 0.29	$ 300,000	0.8%	0.0000	1	-	1,145,172	$ 581,661	5	$ 0.2620	1,034,483	5,725,862
RESM				$ 250,000	0.7%			99	522,490	$ 644,993	8	$ 0.4785	513,030	4,287,072
Residential System Tune-Ups				*$ 250,000*	*0.7%*			*99*	*522,490*	*$ 644,993*	*8*	*$ 0.4785*	*513,030*	*4,287,072*
Solar Water Heater Tune Up	1,000	Tune Ups	$ 150	$ 150,000	0.4%	0.0290	249	30	253,592	$ 39,792	1	$ 0.5915	249,000	253,592
Central Air Conditioning Retrofit Pilot	100	Homes	$ 1,000	$ 100,000	0.3%	0.6780	2,640	69	268,899	$ 605,201	15	$ 0.3719	264,030	4,033,481
RHTR				$ 682,250	1.8%			195	993,228	$ 1,413,426	15	$ 0.6869	897,225	10,876,840
Energy Efficiency Equipment Grants				*$ 521,000*	*1.4%*			*44*	*437,044*	*$ 778,399*	*18*	*$ 1.1921*	*394,800*	*7,539,733*
Refrigerator (with Recycling of Old) - Lanai & Molokai Equity	220	units	$ 250	$ 55,000	0.1%	0.0340	822	8	200,190	$ 261,529	14	$ 0.2747	180,840	2,802,658
Direct Install - Solar Water Heater (SWH)	24	systems	$ 9,000	$ 216,000	0.6%	0.4600	2,065	12	54,863	$ 139,408	20	$ 3.9371	49,560	1,097,258
Direct Install - Heat Pump Water Heater (HPWH)	100	systems	$ 2,500	$ 250,000	0.7%	0.2100	1,644	23	181,991	$ 377,462	20	$ 1.3737	164,400	3,639,816
Direct Installation - Residential Energy Kits				*$ 161,250*	*0.4%*			*151*	*556,184*	*$ 635,027*	*6*	*$ 0.2899*	*502,425*	*3,337,107*
Multifamily Direct install - Energy Savings Kits	1,250	dwelling units	$ 129	$ 161,250	0.4%	0.1090	402	151	556,184	$ 635,027	6	$ 0.2899	502,425	3,337,107

Hawaii Energy - PY2015 ANNUAL PLAN - SUMMARY PRESENTATION OF PROGRAMS BY MEASURE

Program, Category, Measure	Count		Average Participant Incentive per Unit	Estimated Budget ($)	% Total Program Budget (%)	Peak Demand Reduction per Unit (kW/Unit)	Energy Reduction per Unit (kWh/Unit)	Program Demand (kW Peak)	Program Energy (kWh/Year)	TRB ($)	Life (yrs.)	Program 1st Year ($/kWh)	Customer Energy (kWh/Year)	Lifetime Energy (kWh/Life)
Business				$ 12,915,474	34.0%			6,134	61,753,307	$ 88,085,212	13.0	$ 0.2091	71,215,193	801,601,096
BEEM				$ 3,561,800	9.4%			4,050	22,395,900	$ 40,472,594	14	$ 0.1590	26,582,294	305,209,548
High Efficiency Water Heating				*$ 227,400*	*0.6%*			*521*	*587,460*	*$ 3,318,543*	*16*	*$ 0.3871*	*707,570*	*10,347,240*
Commercial Solar Water Heating - Elec. Res.	200	tons	$ 250	$ 50,000	0.1%	1.1000	1,030	183	170,965	$ 1,144,858	20	$ 0.2925	205,920	3,419,302
Commercial Solar Water Heating - Heat Pump	300	tons	$ 100	$ 30,000	0.1%	1.1000	77	274	19,129	$ 1,374,039	20	$ 1.5683	23,040	382,579
Heat Pump - Conversion from Electric Resistance	20	tons	$ 120	$ 2,400	0.0%	0.0300	943	0	15,659	$ 15,554	10	$ 0.1533	18,860	156,585
Heat Pump - End-of-Life Upgrade	500	tons	$ 65	$ 32,500	0.1%	0.0150	300	6	124,538	$ 130,617	10	$ 0.2610	150,000	1,245,375
Single Family Solar Water Heater (SWH) Incentive	150	systems	$ 750	$ 112,500	0.3%	0.4600	2,065	57	257,170	$ 653,475	20	$ 0.4375	309,750	5,143,399
High Efficiency Lighting				*$ 1,063,250*	*2.8%*			*1,382*	*11,798,724*	*$ 19,463,917*	*14*	*$ 0.0901*	*14,211,050*	*172,550,139*
Delamp Only (2 foot Lamp)	5,750	lamps removed	$ 5	$ 28,750	0.1%	0.0090	80	43	381,915	$ 604,850	14	$ 0.0753	460,000	5,346,810
Delamp Only (4 foot Lamp)	10,000	lamps removed	$ 10	$ 100,000	0.3%	0.0170	149	141	1,238,733	$ 1,968,777	14	$ 0.0807	1,492,000	17,342,262
Delamp Only (8 Foot Lamp)	1,800	lamps removed	$ 15	$ 27,000	0.1%	0.0390	333	58	497,652	$ 797,103	14	$ 0.0543	599,400	6,967,126
Delamp with Reflector Kit (2 foot Lamp)	1,700	lamps removed	$ 3	$ 4,250	0.0%	0.0090	80	13	112,914	$ 178,825	14	$ 0.0376	136,000	1,580,796
Delamp with Reflector Kit (4 foot Lamp)	4,800	lamps removed	$ 5	$ 24,000	0.1%	0.0170	149	68	594,592	$ 945,013	14	$ 0.0404	716,160	8,324,286
Delamp with Reflector Kit (8 Foot Lamp)	300	lamps removed	$ 8	$ 2,250	0.0%	0.0390	333	10	82,942	$ 132,851	14	$ 0.0271	99,900	1,161,188
ENERGY STAR LED Dimmable A19	13,250	lamps	$ 8	$ 99,375	0.3%	0.0081	70	89	771,157	$ 1,290,347	15	$ 0.1289	928,825	11,567,354
ENERGY STAR LED Dimmable w/Controls	20,000	lamps	$ 9	$ 180,000	0.5%	0.0239	206	397	3,425,612	$ 5,736,166	15	$ 0.0525	4,126,000	51,384,173
ENERGY STAR LED Non-Dimmable	20,000	lamps	$ 10	$ 200,000	0.5%	0.0179	155	297	2,568,794	$ 4,299,929	15	$ 0.0779	3,094,000	38,531,903
ENERGY STAR LED Non-Dimmable A19	24,000	lamps	$ 5	$ 120,000	0.3%	0.0061	53	122	1,046,115	$ 1,753,166	15	$ 0.1147	1,260,000	15,691,725
LED Exit Signs	600	signs	$ 40	$ 24,000	0.1%	0.0350	307	17	152,932	$ 266,255	16	$ 0.1569	184,200	2,446,913
LED Flat Panel Drop-In Replacements	100	Fixtures	$ 30	$ 3,000	0.0%	-	181	-	14,994	$ 18,006	15	$ 0.2001	18,060	224,915
LED Refrigerated Case Lighting	1,500	lamps	$ 75	$ 112,500	0.3%	0.0320	200	40	248,701	$ 461,581	15	$ 0.4523	299,550	3,730,521
Occupancy Light Sensors	3,000	sensors	$ 20	$ 60,000	0.2%	0.0068	68	17	168,873	$ 170,628	8	$ 0.3553	203,400	1,350,983
T12 to T8 Low Wattage	5,000	lamps	$ 10	$ 50,000	0.1%	0.0090	78	37	324,213	$ 516,924	14	$ 0.1542	390,500	4,538,977
T12 to T8 Standard (2 foot lamps)	1,200	lamps	$ 5	$ 6,000	0.0%	0.0040	36	4	35,767	$ 56,495	14	$ 0.1678	43,080	500,740
T12 to T8 Standard (3 foot lamps)	250	lamps	$ 6	$ 1,500	0.0%	0.0070	56	1	11,707	$ 19,070	14	$ 0.1281	14,100	163,891
T8 to T8 Low Wattage	3,750	lamps	$ 6	$ 20,625	0.1%	0.0090	39	28	121,113	$ 247,930	14	$ 0.1703	145,875	1,695,578
High Efficiency HVAC				*$ 1,265,500*	*3.3%*			*1,402*	*5,273,391*	*$ 12,591,839*	*17*	*$ 0.2400*	*6,351,570*	*85,838,136*
Central Plant - >15% Better than Code Chillers	6,400	Tons	$ 50	$ 320,000	0.8%	0.0550	268	292	1,422,982	$ 3,494,277	20	$ 0.2249	1,713,920	28,459,642
Chiller Plant Efficiency kW/Ton Meter	25	Units	$ 5,000	$ 125,000	0.3%	-	-	-	-	$ -	20	$ -	-	-
Optimized Chiller Selection Engineering	25	Units	$ 2,500	$ 62,500	0.2%	-	-	-	-	$ -	20	$ -	-	-
Garage Active Ventilation Control	500,000	kWh	$ 0	$ 60,000	0.2%	0.0001	1	47	415,125	$ 434,198	8	$ 0.1445	500,000	3,321,000
Package Units - 15% Better Than Code	700	tons	$ 200	$ 140,000	0.4%	0.0930	552	54	320,925	$ 606,353	15	$ 0.4362	386,540	4,813,873
Variable Refrigerant Flow Air Conditioners - Existing Facility	400	Tons	$ 250	$ 100,000	0.3%	0.1140	677	38	224,732	$ 511,088	20	$ 0.4450	270,680	4,494,641
Variable Refrigerant Flow Air Conditioners - New Construction	500	Tons	$ 300	$ 150,000	0.4%	0.1140	677	47	280,915	$ 638,860	20	$ 0.5340	338,350	5,618,302
VFD - AHU	3,600	hp	$ 50	$ 180,000	0.5%	0.2000	472	598	1,409,565	$ 4,136,518	15	$ 0.1277	1,697,760	21,143,479
VFD - Chilled Water / Condenser Water	1,600	hp	$ 80	$ 128,000	0.3%	0.2450	903	325	1,199,147	$ 2,770,545	15	$ 0.1067	1,444,320	17,987,200
High Efficiency Water Pumping				*$ 50,900*	*0.1%*			*14*	*143,609*	*$ 227,851*	*15*	*$ 0.3544*	*172,971*	*2,154,141*
VFD Dom. Water Boosters - added HP Reduction	30	hp reduced	$ 80	$ 2,400	0.0%	0.3730	3,921	9	97,662	$ 155,262	15	$ 0.0246	117,630	1,464,935
VFD Dom. Water Boosters - VFD ($3K per Sys.)	75	hp	$ 600	$ 45,000	0.1%	0.0560	588	3	36,623	$ 58,236	15	$ 1.2287	44,111	549,350
VFD Pool Pump Packages	10	hp	$ 350	$ 3,500	0.0%	0.0930	1,123	1	9,324	$ 14,353	15	$ 0.3754	11,230	139,856
High Efficiency Motors				*$ 86,000*	*0.2%*			*24*	*214,196*	*$ 357,183*	*15*	*$ 0.4015*	*257,990*	*3,212,943*
ECM - Fan Coil Fans	1,100	motors	$ 55	$ 60,500	0.2%	0.0265	232	24	211,880	$ 353,383	15	$ 0.2855	255,200	3,178,197
ECM w/Controller- Evaporator Fan Motors	300	motors	$ 85	$ 25,500	0.1%	0.0010	9	0	2,316	$ 3,800	15	$ 11.0085	2,790	34,746
Commercial Industrial Processes				*$ 52,500*	*0.1%*			*28*	*163,954*	*$ 311,442*	*13*	*$ 0.3202*	*197,475*	*2,459,304*
Kitchen Exhaust Hood Demand Ventilation	75	hp	$ 700	$ 52,500	0.1%	0.4500	2,633	28	163,954	$ 311,442	15	$ 0.3202	197,475	2,459,304

Hawaii Energy - PY2015 ANNUAL PLAN - SUMMARY PRESENTATION OF PROGRAMS BY MEASURE

Business Programs Continued

Program, Category, Measure	Count		Average Participant Incentive per Unit	Estimated Budget ($)	% Total Program Budget (%)	Peak Demand Reduction per Unit (kW/Unit)	Energy Reduction per Unit (kWh/Unit)	Program Demand (kW Peak)	Program Energy (kWh/Year)	TRB ($)	Life (yrs.)	Program 1st Year ($/kWh)	Customer Energy (kWh/Year)	Lifetime Energy (kWh/Life)
Building Envelope Improvements				*$ 52,000*	*0.1%*			*67*	*254,472*	*$ 431,995*	*10*	*$ 0.2043*	*306,500*	*2,544,716*
Cool Roof Technologies	50,000	square feet	$ 0.20	$ 10,000	0.0%	0.0001	0	2	10,378	$ 15,634	10	$ 0.9636	12,500	103,781
Window Tinting	60,000	square feet	$ 0.70	$ 42,000	0.1%	0.0013	5	65	244,094	$ 416,361	10	$ 0.1721	294,000	2,440,935
High Efficiency Appliances				*$ 33,750*	*0.1%*			*8*	*174,975*	*$ 230,637*	*13*	*$ 0.1929*	*210,750*	*2,449,653*
Refrigerator (Purchase New Only) <$700	50	units	$ 50	$ 2,500	0.0%	0.0170	105	1	4,359	$ 7,743	14	$ 0.5736	5,250	61,023
Refrigerator (with Recycling of Old)	250	units	$ 125	$ 31,250	0.1%	0.0340	822	7	170,616	$ 222,894	14	$ 0.1832	205,500	2,388,629
Energy Star Business Equipment				*$ 12,500*	*0.0%*			*7*	*170,616*	*$ 222,894*	*14*	*$ 0.0733*	*205,500*	*2,388,629*
Refrigerators w/Recycling			$ 50	$ 12,500	0.0%	0.0340	822	7	170,616	$ 222,894	14	$ 0.0733	205,500	2,388,629
Direct Install - Residential Energy Kits				*$ 378,000*	*1.0%*			*354*	*1,303,800*	*$ 1,488,621*	*6*	*$ 0.2899*	*1,177,778*	*7,822,799*
Multifamily Direct install - Energy Savings Kits	2,930	dwelling units	$ 129	$ 378,000	1.0%	0.1090	402	354	1,303,800	$ 1,488,621	6	$ 0.2899	1,177,778	7,822,799
Energy Efficiency Equipment Grants				*$ 150,000*	*0.4%*			*149*	*1,681,256*	*$ 1,112,357*	*5*	*$ 0.0892*	*2,025,000*	*8,406,281*
DI - Water Cooler Timers - HOD	10,000	units	$ 15	$ 150,000	0.4%	0.0180	203	149	1,681,256	$ 1,112,357	5	$ 0.0892	2,025,000	8,406,281
Energy Awareness, Measurement and Control Systems				*$ 190,000*	*0.5%*			*94*	*629,446*	*$ 715,315*	*8*	*$ 0.3019*	*758,140*	*5,035,566*
Condominum Submetering	500	units metered	$ 200	$ 100,000	0.3%	0.0570	273	24	113,329	$ 146,035	8	$ 0.8824	136,500	906,633
Hotel Room Occupancy Controls	500	units	$ 100	$ 50,000	0.1%	0.1000	750	42	311,344	$ 340,955	8	$ 0.1606	375,000	2,490,750
Small Business Submetering Pilot	100	units metered	$ 200	$ 20,000	0.1%	0.1140	410	9	34,073	$ 49,934	8	$ 0.5870	41,040	272,588
Vending Machine Energy Control Systems	200	units	$ 100	$ 20,000	0.1%	0.1170	1,028	19	170,699	$ 178,390	8	$ 0.1172	205,600	1,365,595
CBEEM				$ 6,131,459	16.1%			850	29,785,760	$ 35,674,387	11	$ 0.2059	35,875,652	394,885,806
Customized Project Measures				*$ 350,000*	*0.9%*			*850*	*29,785,760*	*$ 35,674,387*	*11*	*$ 0.0118*	*35,875,652*	*394,885,806*
Customized Proj. Measures - Under 5 year Life	3,181,818	kWh	$ 0.11	$ 5,781,459	15.2%	0.0000	1	75	2,641,705	$ 1,472,145	5	$ 2.1885	3,181,818	13,208,523
Customized Proj.Measures - Over 5 year Life	32,693,834	kWh	$ 0.19	$ -	0.0%	0.0000	1	775	27,144,056	$ 34,202,243	14	$ -	32,693,834	381,677,283
Hawaii Energy - Efficiency Project Auction	-	kWh	$ 0.29	$ 780,000	2.1%	0.0000	1	-	-	$ -	10	$ -	-	-
BESM				$ 780,000	2.1%			10	609,957	$ 199,379	2		580,000	1,787,805
Business Design, Audits and Commissioning				*$ 150,000*	*0.4%*			*10*	*609,957*	*$ 199,379*	*2*		*580,000*	*1,787,805*
Benchmark Metering	2	Groups	$ 75,000	$ 80,000	0.2%	0.0001	-	0	-	$ 0	1	$ -	-	-
Decision Maker - Real-Time Submeters	1	Projects	$ 80,000	$ 50,000	0.1%	0.0000	-	-	-	$ -	1	$ -	-	-
Energy Audit	10	studies	$ 5,000	$ 50,000	0.1%	0.0000	-	-	-	$ -	1	$ -	-	-
Energy Study Project Implementation - 100%	2	studies	$ 25,000	$ 75,000	0.2%	0.0000	-	-	-	$ -	1	$ -	-	-
Energy Study Assistance - 50%	5	studies	$ 15,000	$ 30,000	0.1%	0.0000	-	-	-	$ -	1	$ -	-	-
Design Assistance - 50%	2	designs	$ 15,000	$ 75,000	0.2%	0.0000	-	-	-	$ -	1	$ -	-	-
Education Facilities - Submetering for Energy Programs	1	Projects	$ 75,000	$ 100,000	0.3%	0.0000	-	-	-	$ -	1	$ -	-	-
Water & Waste Water Catalyst - Rural Site Grants	80,000	kWh	$ 1.25	$ 70,000	0.2%	0.0001	1	10	84,132	$ 140,295	15	$ 0.8320	80,000	1,261,980
ENERGY STAR Portfolio Scoring Rewards	10	Participants	$ 7,000	$ 100,000	0.3%	0.0000	-	-	-	$ -	1	$ -	-	-
System Retrocommissioning	5	Projects	$ 20,000	$ 2,442,215	6.4%	0.0000	100,000	-	525,825	$ 59,083	1	$ 4.6445	500,000	525,825

Hawaii Energy - PY2015 ANNUAL PLAN - SUMMARY PRESENTATION OF PROGRAMS BY MEASURE

Program, Category, Measure	Count		Average Participant Incentive per Unit	Estimated Budget ($)	% Total Program Budget (%)	Peak Demand Reduction per Unit (kW/Unit)	Energy Reduction per Unit (kWh/Unit)	Program Demand (kW Peak)	Program Energy (kWh/Year)	TRB ($)	Life (yrs.)	Program 1st Year ($/kWh)	Customer Energy (kWh/Year)	Lifetime Energy (kWh/Life)
BHTR				$ 2,442,215	6.4%			1,225	8,961,690	$ 11,738,851	11	$ 0.2725	8,177,247	99,717,938
Business Direct Installation				*$ 1,155,595*	*3.0%*			*242*	*2,826,938*	*$ 4,168,194*	*14*	*$ 0.4088*	*2,579,488*	*39,590,214*
SBDI - Lighting Retrofits	16,082	Retrofitted Unit	$ 68	$ 1,085,595	2.9%	0.0119	139	230	2,689,449	$ 3,964,858	14	$ 0.4036	2,454,033	37,665,362
SBDI - Lighting Retrofits - Custom	80,000	kWh	$ 0.25	$ 20,000	0.1%	0.0001	1	8	87,674	$ 129,664	14	$ 0.2281	80,000	1,227,442
SBDI - Refrigeration Retrofits	45,455	kWh	$ 1.10	$ 50,000	0.1%	0.0001	1	4	49,815	$ 73,673	14	$ 1.0037	45,455	697,410
Restaurant Targeted Participation Programs				*$ 1,286,620*	*3.4%*			*982*	*6,134,752*	*$ 7,570,657*	*12*	*$ 0.2097*	*5,597,759*	*60,127,724*
ENERGY STAR Com. Kitchen Equip. - Total	978,261	kWh	$ 0.23	$ 225,000	0.6%	0.0002	1	214	1,072,105	$ 1,069,842	6	$ 0.2099	978,261	6,432,633
ENERGY STAR Com. Kitchen Equip. - Combination Oven	-	kWh	$ -	$ -	0.0%	3.9000	17,121	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Commercial Fryer	-	kWh	$ -	$ -	0.0%	0.4300	1,876	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Commercial Ice Machine	-	kWh	$ -	$ -	0.0%	0.2278	1,994	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Convection Ovens	-	kWh	$ -	$ -	0.0%	0.3700	1,934	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Electric Griddle	-	kWh	$ -	$ -	0.0%	0.1700	758	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Glass-Door Reach-In Freezer	-	kWh	$ -	$ -	0.0%	0.4076	3,570	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Glass-Door Reach-In Refrigerato	-	kWh	$ -	$ -	0.0%	0.1989	1,742	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Hot Food Holding Cabinet	-	kWh	$ -	$ -	0.0%	0.5250	2,875	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Solid-Door Reach-In Freezer	-	kWh	$ -	$ -	0.0%	0.3213	2,815	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Solid-Door Reach-In Refrigerato	-	kWh	$ -	$ -	0.0%	0.1381	1,210	-	-	$ -	6	$ -	-	-
ENERGY STAR Com. Kitchen Equip. - Steam Cooker	-	kWh	$ -	$ -	0.0%	2.2300	3,258	-	-	$ -	6	$ -	-	-
Low Flow Spray Rinse Nozzles - HP - Restaurant	-	each	$ 22	$ -	0.0%	1.0300	1,553	-	-	$ -	5	#DIV/0!	-	-
Low Flow Spray Rinse Nozzles Online Marketplace	500	each	$ 22	$ 11,000	0.0%	0.9000	3,642	493	1,995,689	$ 1,866,399	5	$ 0.0055	1,821,000	9,978,443
Low Flow Spray Rinse Nozzles - Electr - Restaurant	-	each	$ 22	$ -	0.0%	1.0300	4,753	-	-	$ -	5	$ -	-	-
Low Flow Spray Rinse Nozzles - Electr - Schools	-	each	$ 22	$ -	0.0%	0.7900	2,604	-	-	$ -	5	$ -	-	-
Low Flow Spray Rinse Nozzles - HP - Schools	-	each	$ 22	$ -	0.0%	0.7900	851	-	-	$ -	5	#DIV/0!	-	-
SBDI - Kitchen Exhaust Hoods	50	hp	$ 1,700	$ 85,000	0.2%	0.4500	2,633	25	144,279	$ 274,069	15	$ 0.5891	131,650	
SBDI - Restaurant Lighting	15,165	Retrofitted Unit	$ 59	$ 898,325	2.4%	0.0141	165	225	2,627,676	$ 3,924,060	14	$ 0.3419	2,397,668	
SBDI - Restaurant Lighting - Custom	269,180	kWh	$ 0.25	$ 67,295	0.2%	0.0001	1	25	295,002	$ 436,287	14	$ 0.2281	269,180	

Hawaii Energy - PY2015 ANNUAL PLAN - SUMMARY PRESENTATION OF PROGRAMS BY MEASURE

Program, Category, Measure	Count		Budget ($)	% Total Program Budget (%)	Lifetime Energy (kWh/Life)
Transformational Programs			$ -	0.0%	
Residential			$ 1,595,166	4.2%	
RTRAN	17,437	#N/A	$ 1,595,166	4.2%	
Benchmarking, Codes and Standards			*$ -*	*0.0%*	
30% Above Code Design and Construction Program - Residential	1	Pilot	$ -	0.0%	
Renewables Integration Program			*$ 60,000*	*0.2%*	
Shift for Savings Plan	4	Pilot	$ 110,000	0.3%	
AC Integrated DR Control Pilot	1	Pilot	$ -	0.0%	
EV - Day time charging	1	Pilot	$ 25,000	0.1%	
Smart Grid Support			*$ -*	*0.0%*	
Transformation IT Web Tools - Dare-To-Compare	-	-	$ -	0.0%	
Electric Vehicle Support			*$ 10,000*	*0.0%*	
Net Zero Electric Car Purchase Package	1	Pilot	$ 10,000	0.0%	
Energy Trade Ally Support			*$ 15,000*	*0.0%*	
Trade Ally Program Development	1	Program	$ 15,000	0.0%	
Behavior Modification	17,251	Participants	$ 550,000	1.4%	
Community Based Social Marketing	-	-	$ 65,000	0.2%	
Hawaii Energy / Kanu Hawaii Projects	5,455	Participants	$ 75,000	0.2%	
Hawaii Energy / Sharing the Aloha - Classes			*$ 300,000*	*0.8%*	
Hawaii Green Growth Res	-	-	$ 10,000	0.0%	
Hawaii Energy / Community Engagement Projects	7,832	Participants	$ 100,000	0.3%	
Professional Development	177	#N/A	$ 210,000	0.6%	
Rebuild Hawaii			*$ 15,000*	*0.0%*	
Hawaii Energy Intern Project Support	6	Events	$ 25,000	0.1%	
Hawaii Energy - Educator Training			*$ 170,000*	*0.4%*	
Labor	1	#N/A	$ 640,166	1.7%	
Labor Transformational Labor			$ 640,166	1.7%	
Business			$ 1,656,795	4.4%	
BTRAN	*1,077*		*$ 1,656,795*	*4.4%*	
Benchmarking, Codes and Standards	13	#N/A	$ 150,000	0.4%	
30% Above Code Design and Construction Program - Business	1	Pilot	$ 30,000	0.1%	
Code Compliance Assistance			$ 50,000	0.1%	
ENERGY STAR Portfolio Scoring Rewards	10	Participants	$ 30,000	0.1%	
Hawaii Energy Benchmarking Program	*1*	*Pilot*	*$ 40,000*	*0.1%*	
Shift for Savings Plan	3	#N/A	$ 135,000	0.4%	
Limited Incentivizes to Add DR Capability in EE Projects			$ 25,000	0.1%	
Transformational Time-of-Use Rates	1	Pilot	$ 10,000	0.0%	
UH Variable Pricing Econ Research	*1*	*Pilot*	*$ 100,000*	*0.3%*	
Smart Grid Support			$ -	0.0%	
Smart Grid EE Integration Support & Evaluation	1	Pilot	$ -	0.0%	
Transformation IT Web Tools - Dare-To-Compare			*$ -*	*0.0%*	
Energy Trade Ally Support	1	#N/A	$ 25,000	0.1%	
Trade Ally Program Development	*1*	*Program*	*$ 25,000*	*0.1%*	
Behavior Modification	201	#N/A	$ 126,000	0.3%	
Community Based Social Marketing	-	-	$ 65,000	0.2%	
Hawaii Energy / Kanu Hawaii Projects	-	Participants	$ -	0.0%	
Hawaii Energy / UH - Sustainability Conference	200	Participants	$ 11,000	0.0%	
Hawaii Green Growth Bus			$ 10,000	0.0%	
HPU Green Office Program	-	-	$ 20,000	0.1%	
IFMA - Higher Education Energy Program Support	*1*	*Pilot*	*$ 20,000*	*0.1%*	
Professional Development	607	#N/A	$ 245,000	0.6%	
Rebuild Hawaii			$ -	0.0%	
Student Energy Summit	-	-	$ 10,000	0.0%	
Hawaii Energy Intern Project Support	6	Events	$ 75,000	0.2%	
Hawaii Energy / Efficiency Sales Training	600	Participants	$ 160,000	0.4%	
Technical Training	250		$ 273,000	0.7%	
Hawaii Energy - Water and Waste Water Industry Support			$ 25,000	0.1%	
Energy Innovation Support	-	-	$ 63,000	0.2%	
Technical Development	150	-	$ 185,000	0.5%	
Institutional Change			*$ 185,000*	*0.5%*	
UH Strategic Energy Management	-	-	$ 85,000	0.2%	

Hawaii Energy - PY2015 ANNUAL PLAN - MAJOR PROJECTS IDENTIFIED OUTSIDE OF PROGRAM PLANNING PERIOD

Program, Category, Measure	Count	Unit	Average Participant Incentive per Unit	Estimated Budget ($)	% Total Program Budget (%)	Peak Demand Reduction per Unit (kW/Unit)	Energy Reduction per Unit (kWh/Unit)	Program Demand (kW Peak)	Program Energy (kWh/Year)	TRB ($)	Life (yrs.)	1st Year ($/kWh)	Lifetime Energy (kWh/Life)
Potential Projects Pending on Project Progress and Program Participation (figures provided for demonstration of impact and not summarized in Program totals above)													
SWAC Infrastructure Support Incentive	25,000	tons	$ 300	$ 7,500,000		0.57300	3,080	11,818	63,522,113	$ 118,812,700	14	$ 0.118	889,309,575
Solar Water Heater - OBF Contribution - Expansion	1,000	systems	$ 1,000	$ 1,000,000		0.46000	2,065	400	1,794,403	$ 4,559,621	20	$ 0.557	35,888,069
Water & Waste Water Catalyst - UV System - 1 Channel Incentive	7,602,763	kWh	$ 0	$ 2,361,368		0.00008	1	644	7,944,526	$ 11,608,314	14	$ 0.297	111,223,367

APPENDIX C TRB Utility Benefit Values

Hawaii Energy - PY15 - TRB Values Using Legacy Utility Avoided Cost								
		Discount Rate						
		6%	HECO IRP4 Avoided Cost		NPV for each Year		NPV Cumulative from Final Year	
Year	Period	NPV Multiplier	$/kW/yr.	$/kWh/yr.	$/kW/yr.	$/kWh/yr.	$/kW/yr.	$/kWh/yr.
2015	1	1.00	$ 382.5	$ 0.112	$ 383	$ 0.1124	$ 383	$ 0.1124
2016	2	0.94	$ 386.2	$ 0.113	$ 364	$ 0.1070	$ 747	$ 0.2194
2017	3	0.89	$ 387.7	$ 0.114	$ 345	$ 0.1014	$ 1,092	$ 0.3208
2018	4	0.84	$ 389.1	$ 0.114	$ 327	$ 0.0960	$ 1,419	$ 0.4167
2019	5	0.79	$ 391.9	$ 0.115	$ 310	$ 0.0912	$ 1,729	$ 0.5079
2020	6	0.75	$ 390.7	$ 0.115	$ 292	$ 0.0858	$ 2,021	$ 0.5937
2021	7	0.70	$ 394.6	$ 0.116	$ 278	$ 0.0817	$ 2,299	$ 0.6754
2022	8	0.67	$ 398.3	$ 0.117	$ 265	$ 0.0778	$ 2,564	$ 0.7532
2023	9	0.63	$ 397.4	$ 0.117	$ 249	$ 0.0732	$ 2,814	$ 0.8265
2024	10	0.59	$ 401.4	$ 0.118	$ 238	$ 0.0698	$ 3,051	$ 0.8963
2025	11	0.56	$ 405.7	$ 0.119	$ 227	$ 0.0665	$ 3,278	$ 0.9628
2026	12	0.53	$ 409.3	$ 0.120	$ 216	$ 0.0633	$ 3,493	$ 1.0261
2027	13	0.50	$ 415.9	$ 0.122	$ 207	$ 0.0607	$ 3,700	$ 1.0869
2028	14	0.47	$ 423.3	$ 0.124	$ 198	$ 0.0583	$ 3,898	$ 1.1452
2029	15	0.44	$ 428.9	$ 0.126	$ 190	$ 0.0557	$ 4,088	$ 1.2009
2030	16	0.42	$ 433.9	$ 0.128	$ 181	$ 0.0534	$ 4,269	$ 1.2543
2031	17	0.39	$ 438.9	$ 0.130	$ 173	$ 0.0512	$ 4,442	$ 1.3055
2032	18	0.37	$ 443.9	$ 0.132	$ 165	$ 0.0490	$ 4,607	$ 1.3545
2033	19	0.35	$ 448.9	$ 0.134	$ 157	$ 0.0469	$ 4,764	$ 1.4014
2034	20	0.33	$ 453.9	$ 0.136	$ 150	$ 0.0449	$ 4,914	$ 1.4464
2035	21	0.31	$ 458.9	$ 0.138	$ 143	$ 0.0430	$ 5,057	$ 1.4894
2036	22	0.29	$ 463.9	$ 0.140	$ 136	$ 0.0412	$ 5,194	$ 1.5306
2037	23	0.28	$ 468.9	$ 0.142	$ 130	$ 0.0394	$ 5,324	$ 1.5700
2038	24	0.26	$ 473.9	$ 0.144	$ 124	$ 0.0377	$ 5,448	$ 1.6077
2039	25	0.25	$ 479.0	$ 0.146	$ 118	$ 0.0361	$ 5,566	$ 1.6437