

PUBLIC UTILITIES COMMISSION

STATE OF HAWAII

ANNUAL REPORT

(HAW. REV. STAT. § 269-5)

FISCAL YEAR 2012-13

JANUARY 2014

Executive Summary

Affordable, dependable utility services are essential to the functioning of Hawaii's economy and to the well-being of Hawaii's residents.

The primary purpose of the Public Utilities Commission ("Commission" or "PUC") of the State of Hawaii ("State") is to ensure that regulated companies efficiently and safely provide their customers with adequate and reliable services at just and reasonable rates, while providing regulated companies with a fair opportunity to earn a reasonable rate of return.

In Fiscal Year ("FY") 2013, the Commission regulated 1586 chartered, franchised, certificated, and registered public utility companies that provide electricity, gas, telecommunications, private water and sewage, and motor and water carrier transportation services in the State.

A majority of the Commission's time and attention in FY 2013 was dedicated to the important and complex area of regulating Hawaii's electricity service providers, as Hawaii transforms its electricity sector to increase efficiency, put downward pressure on costs, and maintain reliability while achieving the State's energy goals.

Strategic Objectives in Energy

The Commission's four strategic objectives in the area of energy are:

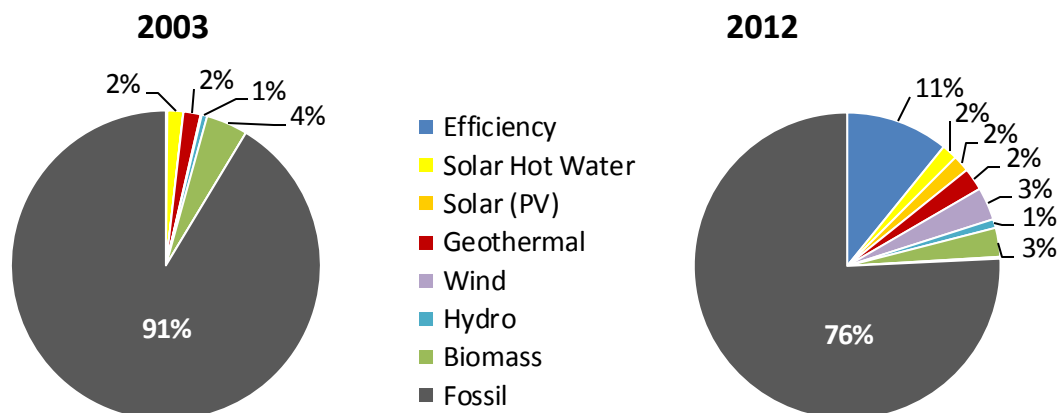
1. Develop an energy resource mix that meets State objectives.
2. Maximize the integration of cost-effective renewable energy while protecting electrical system performance and quality.
3. Provide more options for customers to manage their electricity bills and reduce costs.
4. Align and fairly allocate risks, cost, and incentives in utility rate recovery.

Electricity Sector

To reduce the high costs associated with an oil-dependent electricity system, Hawaii's electric utilities have been directed to decrease their dependence on oil for electricity generation, and to increase the use of renewable resources. Energy efficiency programs have been established to help reduce consumers' power bills as well as to delay the need for increased generation capacity.

As shown in Figure ES1, Hawaii has diversified its electricity (including efficiency) resources significantly over the past 10 years.

Figure ES1. Reduction of Dependence on Fossil Fuels for Electricity, from 91% in 2003 to 76% in 2012



Source: Renewable Portfolio Standard reports submitted to the Commission by HECO and KIUC; and percentages provided in Annual Fuel Mix Disclosure, 2003-2012, submitted by KIUC to the Commission, 4/10/13.

In the public benefits fee (energy efficiency) program, the \$31 million spent in FY 2013 provided an estimated 1.4 billion kilowatt-hours (“kWh”) of lifetime energy savings and a peak demand reduction of 15.1 megawatts (“MW”).

Customer-sited renewable energy systems continued to increase rapidly, roughly doubling each year. As of December 31, 2012, 133.2 MW (21,227 systems) had been installed on the Oahu (HECO), Maui County (MECO), and Hawaii Island (HELCO) grids; the Kauai (KIUC) grid had 7.55 MW (1,121 systems) of customer-sited renewables, mostly photovoltaics (solar).

In 2012, a new law authorized the Commission to perform electric system reliability oversight functions, including the establishment of the Hawaii Electricity Reliability Administrator. The Commission is preparing for implementation of this function.

Also currently under review by the Commission is the 2013 integrated resource plan submitted by the Hawaiian Electric Companies who were directed "to develop an Action Plan that governs how the utility will meet energy objectives and customer energy needs consistent with state energy policies and goals, while providing safe and reliable utility service at reasonable cost."

Electric utility costs continue to be dominated by fuel and purchased power costs, with a statewide average of 64 percent of electric utility revenues going to this category.

Estimates by Hawaii's electric utilities for the period of 2013 through 2017 indicate plans for capital improvement project expenditures of over \$2.9 billion. These estimates are preliminary, as any major expenditure must be approved by the Commission in advance.

Dockets relevant to the State's strategic objectives in energy included those relating to integrated resource planning (Docket No. [2012-0036](#)); energy efficiency portfolio standards (Docket No. [2010-0037](#)); as-available renewable electricity generation (Docket No. [2011-0225](#)); investigating whether an Oahu-Maui interisland transmission system may be in the public interest (Docket No. [2013-0169](#)); investigating the implementation of reliability standards (Docket No. [2011-0206](#)); demand response (Docket No. [2007-0341](#)); review of feed-in tariffs (Docket No. [2013-0194](#)); the public benefit fee (energy efficiency) program (Docket No. [2007-0323](#)); on-bill financing (Docket No. [2011-0186](#)); and others, listed beginning on page 32.

Utility Gas

Although the number of utility gas customers declined by 0.94 percent between 2008 and 2012, gas sales over the same period increased 0.67 percent, from 33.1 million to 33.3 million therms. The capital expenditure forecast by Hawaii Gas is for a total of \$61 million over the five-year period. These estimates are preliminary, as any major expenditure must be approved by the Commission in advance.

Private Water and Sewage Utilities

The Commission regulates 38 privately owned water and sewage treatment utilities. Commission-initiated incentives, established in FY 2013 at Hawaii Energy, help private water and sewage utilities to reduce their energy costs. In 2013, the PUC began drafting rules for uniform practices by private water utilities. More information is provided on page 75.

Telecommunications

The Commission oversees 187 telecommunications providers. In FY 2013, 17 new telecommunication service providers received approval to provide services in Hawaii. New requirements regarding federal funds for high-cost Universal Service Fund have prompted Commission review of Hawaii's eligible telecommunications carrier certification process. Selected dockets are summarized on page 76.

Transportation: Motor Carriers

The Commission regulates 816 passenger and 549 property carriers. During FY 2013, new certificates or permits were issued to 108 new passenger carriers and 19 new property carriers. Overall, the number of passenger carriers increased and property carriers decreased.

Transportation: Water Carriers

The Commission regulates four water carriers. Selected dockets are provided on page 77.

Hawaii One Call Center

In FY 2013, the number of calls from excavators increased by about 10 percent, and requests transmitted to facility operators increased by 18 percent, compared to the previous year. Attendance at the Hawaii One Call Center training seminars doubled from FY 2012 to FY 2013.

Enforcement Activities

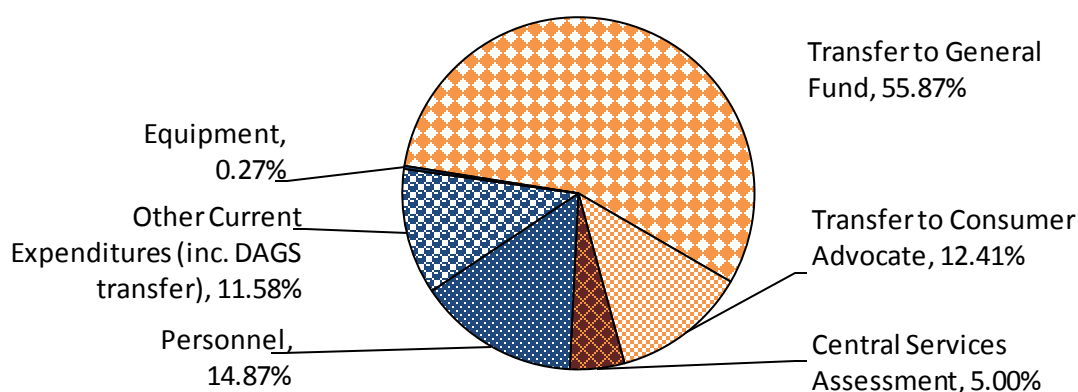
There were three formal and 169 written informal complaints processed in FY 2013. The Commission issued \$19,000 in civil citations and revoked 34 motor carrier certificates.

Commission Funding

Fees from public utilities and motor carriers are deposited into a Special Fund for expenses incurred in the administration of Chapters 269, 269E, 271, and 271G of the Hawaii Revised Statutes ("HRS"). Of the FY 2013 funding of \$21,761,873, the majority (92.4 percent) came from public utility fees; 6.9 percent came from motor carrier fees, 0.3 percent came from One Call Center fees, and 0.4 percent came from other sources.

Fees collected in FY 2013 totaled \$21,761,873. As shown in Figure ES2, only 26.72 percent of the Special Fund revenues were available to the Commission for personnel, other current expenditures, and equipment.

**Figure ES2. Public Utilities Commission Special Fund
FY 2013 Expenditures and Transfers**



Recommendations for Legislative and Executive Action

Existing policies, statutes, and authority conveyed to the Commission are currently sufficient to drive the implementation of Hawaii's clean energy efforts which constitute a major portion of the Commission's activities and workload.

It is the Legislature's prerogative to determine if sufficient competition exists in the property and passenger carrier sectors as well as the telecommunication sector to not warrant rate regulation.

Therefore, at this time the Commission does not have any major legislative recommendations.

It should be recognized that the electricity sector constitutes an extremely capital-intensive and complex system that is an important part of Hawaii's economy and is facing numerous challenges in the pace and scale of emerging disruptive technologies and the advent of customer choice. Much like what the telecommunications industry previously experienced decades ago, more customer energy options are driving change and necessitating review of current electric utility business models and adaption for the future.

As the State's energy infrastructure undergoes this transformational change, the Commission is also evolving. The Commission's role is changing from presiding and reacting to applications filed by the electric and gas utilities, to proactive leadership in developing strategy and guiding action plans to successfully accomplish the State's policy directives. In order to accomplish this it is essential to invest in and build the capacity of Commission staff.

The increased number of significant programs delegated to the Commission and the complex areas currently under its jurisdiction, require additional funding, staffing and technical resources for implementation and oversight. Empowering and enabling the Commission will help to ensure that important decisions – on a growing number of increasingly complex and technical issues – are made in the public interest in the most cost-effective and efficient way possible.

The agency benchmark is excellence and the current emphasis is placed on the quality of professional staff, and the competitive salary structure necessary to attract and retain highly competent staff to carry out the many responsibilities in the numerous areas now under the agency's oversight and jurisdiction

During the FY 2013 budget, the PUC received legislative approval for full funding of its office renovation and expansion. Until these improvements are completed, space constraints will impede the full staffing required by the agency. After appropriate review, staffing requests need to be expeditiously processed to enable the agency to fill positions and to meet its numerous program responsibilities.

Table of Contents

Introduction	1
Goals and Objectives of the Commission	5
Primary Purpose	5
Long-Term Goals	5
Short-Term Goals	5
Strategic Objectives in Energy	6
Plans	13
Recommendations for Legislative and Executive Action	14
Administrative Update	16
Legislative Update	19
Actions and Status by Sector	
Electricity Sector	22
Hawaii's Electric Utilities.....	22
Electric Utility Customers and Operations	23
System Peaks	24
Fuel Prices.....	25
Electricity Use, Rates, and Average Residential Bills	26
Sources Used to Meet Hawaii's Electricity Needs	31
Electricity-Related Dockets	32
Renewable Portfolio Standards (RPS)	35
Energy Efficiency Portfolio Standards (EEPS)	37
Renewable and efficiency levels achieved by Hawaii utilities	38
Public Benefits Fee (PBF).....	41
Net Energy Metering (NEM)	44
Feed-In Tariff (FIT)	45
Reliability	47
Integrated Resource Planning (IRP)	52
On-Bill Financing (OBF)	54
Electric Utility Costs	55
Electric Utility Rates of Return	56
Electric Utility Capital Improvement Expenditure Forecasts	58
Quality of service / service reliability	59
HECO Service Quality	60
HELCO Service Quality	62
MECO Service Quality.....	63
KIUC Service Quality	64

Utility Gas	66
Gas utility and operations	66
Sources used to meet Hawaii's gas needs	66
Gas use, rates, and average residential bills	68
Gas Utility Transmittals and Dockets	70
Integrated Resources Planning (IRP)	72
Gas utility costs	72
Gas Utility Capital Improvement Expenditure Forecasts	72
Quality of service / service reliability	73
Private Water and Sewage Utilities	75
Telecommunications	76
Transportation: Motor Carriers	77
Transportation: Water Carriers	79
One Call Center	80
Enforcement Activities	82
Special Reports	
Special Fund Update for Fiscal Year 2013	85
Revenues	86
Expenditures and Transfers	87
Summary of Power Purchase Agreements	89
Green Infrastructure Finance / Green Energy Market Securitization (GEMS)	93
National Association of Regulatory Utility Commissioners SERCAT Grant	94
Environmental Matters and Actions of the Federal Government	95
Mercury and Air Toxics Standards (MATS)	95
National Ambient Air Quality Standards (NAAQS)	95
Estimated Cost of Compliance with MATS and NAAQS	96
National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE-NESHAP)	96
Maximum Achievable Control Technology (MACT)	97
Regulation of Greenhouse Gases (GHG)	97
Regional Haze – Restoring “Natural Visibility” Levels in National Parks	99
Appendix	
Table of Acronyms	101
Table of Figures	103
Table of Tables	104
Electrical System Reliability – Additional Information	106
Utility Gas Pricing and Revenues – Additional Information	124

Introduction

Affordable, dependable utility services are essential to the functioning of Hawaii's economy and to the well-being of Hawaii's residents.

The Commission was established in 1913.¹ The Commission's primary duty is to protect the public interest by overseeing and regulating public utilities providing essential services so that they provide reliable service at just and reasonable rates.

The Commission regulates 1586 entities: all chartered, franchised, certificated, and registered public utility companies that provide electricity, gas, telecommunications, private water and sewage, and motor and water carrier transportation services in the State. The Commission enforces applicable state statutes, establishes rules and regulations, and sets policies and standards. The Commission does not regulate County services (such as the Honolulu Board of Water Supply or TheBus). Entities regulated by the Commission include:

Energy				Transportation				Telecom		Water/ Waste- water	One Call Center			
Electricity			Gas	Water Carriers		Motor Carriers								
Hawaiian Electric Company	Maui Electric Company	Hawaii Electric Light Company	Kauai Island Utility Cooperative	Hawaii Gas	Young Brothers	Sea Link	Hone Heke	Pasha	816 Passenger Services	549 Property Carriers	Hawaiian Tel	186 Wireless and Wireline Companies	38 Private Water and Sewer Companies	Excavators / Owners of subsurface facilities

¹For more history, see the PUC's [2012 \(100-year anniversary\) Annual Report](#).

For administrative purposes, the Commission is in the Department of Budget and Finance.² The Commission is comprised of the three commissioners and a staff of 40, including an administrative director, attorneys, engineers, auditors, researchers, investigators, neighbor island representatives, documentation staff, and clerical staff.

The Commission has offices on four islands.

OAHU: Public Utilities Commission
465 South King Street, #103
Honolulu, HI 96813
Phone: (808) 586-2020
Fax: (808) 586-2066

KAUAI: PUC Kauai District Office
3060 Eiwa Street, #307
Lihue, HI 96766-1310
Phone: (808) 274-3232
Fax: (808) 274-3233

MAUI: PUC Maui District Office
54 S. High Street, #218
Wailuku, HI 96793
Phone: (808) 984-8182
Fax: (808) 984-8183

HAWAII: PUC Hawaii District Office
688 Kinoole Street, #106-A
Hilo, HI 96720
Phone: (808) 974-4533
Fax: (808) 974-4534

Web: <http://puc.hawaii.gov/>

Email: Hawaii.PUC@hawaii.gov

²HRS Sections [26-8](#), [26-35](#), and [269-2](#), as amended.

Commissioners

Hawaii's three Commissioners are:

Hermina Morita, Chair

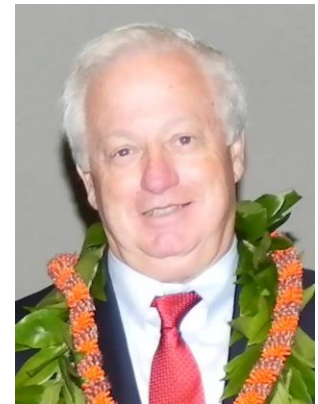
Hermina Morita was appointed to the Public Utilities Commission and named Chair of the Commission on February 3, 2011 by Governor Neil Abercrombie for a term to expire on June 30, 2014.



Upon her confirmation on March 14, 2011, Chair Morita resigned from her position in the State of Hawaii House of Representatives, where she had served as a Legislator for fifteen years, with thirteen as the Chair of the House Energy & Environmental Protection Committee. Prior to her experience as a Legislator, Chair Morita worked as a business manager in the retail, construction and visitor industries. She also served on the Kauai Planning Commission and Kauai Police Commission. She was born and raised on Lanai and currently resides on Kauai.

Michael E. Champley, Commissioner

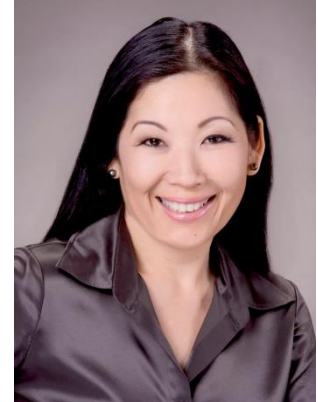
Michael E. Champley was appointed to the Commission on September 15, 2011 by Governor Neil Abercrombie for a term to expire on June 30, 2016. Commissioner Champley has over 40 years of experience analyzing, integrating and managing complex economic, public policy and technical issues confronting the energy utility industry. Prior to his appointment, Commissioner Champley was a Maui-based senior energy consultant focused on clean energy resource integration in Hawaii.



Before relocating to Hawaii, Commissioner Champley was a senior executive with DTE Energy, a major electric and gas energy company where he held various executive positions including Senior Vice President-Regulatory Affairs and Senior Vice President-Power Supply. He holds a Bachelor of Science in Electrical Engineering from the University of Dayton and a Master of Business Administration from Indiana University, with emphasis in Finance and Public Utility Economics and Regulation.

Lorraine Akiba, Commissioner

Lorraine Akiba was appointed to the Commission by Governor Neil Abercrombie to a term that expires on June 30, 2018. Prior to this appointment, Commissioner Akiba worked in private practice as partner at McCorriston Miller Mukai MacKinnon LLP and Cades Schutte Flemming & Wright LLP. At both firms, she headed the Environmental Practice Group. She has also previously served the public as Director of the State Department of Labor and Industrial Relations and as Member and Chair of the Hawaii State Environmental Council.



Commissioner Akiba holds a Juris Doctor degree from Hastings College of the Law and graduated with honors from the University of Berkeley with a B.A. in political science.

Goals and Objectives of the Commission

Primary Purpose

The Commission's primary purpose is to ensure that regulated companies efficiently and safely provide their customers with adequate and reliable services at just and reasonable rates, while providing regulated companies with a fair opportunity to earn a reasonable rate of return.

Long-Term Goals

- Promote and encourage efficient and reliable production, delivery, and use of all utility services.
- Foster and encourage competition where feasible.
- Assist in creating an environment conducive to healthy economic growth while protecting the public interest.
- Allow and enable the use of indigenous, renewable, and cost-effective energy resources.

Short-Term Goals

- Increase transparency and access to the regulatory process to maintain public confidence that the Commission independently, fairly, and impartially regulates public utilities.
- Streamline and modernize the regulatory process whenever reasonably feasible, including utilizing technology tools to improve electronic filing processes and public access to information, to increase the efficiency of the Commission and regulated entities including utilizing technology tools to improve electronic filing processes and public access to information.
- Re-evaluate and update internal Commission staff procedures to increase the efficiency and effectiveness of Commission activities.

Strategic Objectives in Energy

The Commission's four strategic objectives are:

1. Develop an energy resource mix that meets State objectives.
2. Maximize the integration of cost-effective renewable energy while protecting electrical system performance and quality.
3. Provide more options for customers to manage their electricity bills and reduce overall costs.
4. Align and fairly allocate risks, cost, and incentives in utility rate recovery.

Each of these objectives, and its components, are described further below.

1. Develop an energy resource mix that meets State objectives.

A cost-effective and reliable mix of demand-side (customer side of the meter) and supply-side (utility side of the meter) resources will be needed to meet the State energy goals of (1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people; (2) Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased; (3) Greater energy security and diversification in the face of threats to Hawaii's energy supplies and systems; and (4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use.³ To evaluate Hawaii's energy options and implement the laws in support of Hawaii's energy objectives, simultaneous dockets, analyses, and activities include:

³[HRS Section 226-18.](#)

Integrated Resource Planning	The Integrated Resource Planning (“IRP”) process (Docket No. 2012-0036) of the Hawaiian Electric Companies ⁴ includes efficiency, renewables, fuel types and supplies, energy storage, unit dispatch and retirements, interconnection, overall costs, and impacts on ratepayers. Opened on March 1, 2012, there are two named parties, twenty-one intervenors, and one named participant. The IRP is discussed beginning on page 52.
Energy Efficiency Portfolio Standards	The Energy Efficiency Portfolio Standards (“EEPS”) require 4300 gigawatt-hours (“GWh”) of energy efficiency by 2030. Interim standards were set in January, 2012 (Docket No. 2010-0037). The levels of efficiency achieved to date are presented beginning on page 37.
Renewable Portfolio Standards	The Renewable Portfolio Standards (“RPS”) require that a minimum of 40 percent of Hawaii's electricity be from renewable sources by the end of 2030. Interim standards are 15 percent by the end of 2015 and 25 percent by the end of 2020. The levels of renewable generation are presented beginning on page 35.

⁴The Hawaiian Electric Companies are Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited.

Natural Gas Nationally and internationally, the use of natural gas for electricity generation has been increasing.⁵ This is projected to continue.⁶ Over the past several years, studies on the potential of importing natural gas to Hawaii have included: FACTS Global Energy, under contract to the Hawaii Natural Energy Institute, [*Liquefied Natural Gas for Hawaii: Policy, Economic, and Technical Questions*](#), December, 2012; and Galway Energy Advisors, LLC, under contract to Hawaiian Electric Company, [*LNG Imports to Hawaii: Commercial & Economic Viability Study*](#), October, 2012.

⁵Natural gas as an energy source for U.S. electricity production has increased from 19 percent in 2005 to 30 percent in 2012. U.S. Energy Information Administration (EIA), Annual Energy Outlook data site, <http://www.eia.gov/electricity/data/browser/#/topic/0?agg=2>.

⁶USEIA, *International Energy Outlook 2013*, http://www.eia.gov/forecasts/ieo/more_highlights.cfm, July 25, 2013.

**Investigating
the Inter-
connection
of Island
Electrical
Grids**

During FY 2013, inter-island undersea cable discussions focused on: 1) inclusion of an inter-island cable in the draft request for proposals for 600-800 GWh of as-available renewable electricity for Oahu; 2) the enactment of Act 165, Session Laws of Hawaii ("SLH") 2012,⁷ and 3) inclusion of inter-island cables in the U.S. Department of Energy's Programmatic Environmental Impact Statement project, which was broadened in 2012 to encompass all of Hawaii's renewable and energy efficiency resources.⁸

On July 11, 2013, the Commission ordered HECO to eliminate an undersea cable from its as-available RFP (Docket No. [2011-0225](#)); simultaneously, the Commission opened a proceeding (Docket No. [2013-0169](#)) to investigate whether an Oahu-Maui interisland transmission system may be in the public interest.

2. Maximize the integration of cost-effective renewable energy while protecting electrical system performance and quality.

New energy resources, both centralized and decentralized, bring new challenges. As one example, customer-sited electricity production has roughly doubled each year for the past several years, resulting in a vibrant business sector supplying the customer-sited (generally, photovoltaic) systems but creating challenges for the operation of the existing electrical grid. Larger systems, as well, require integration into the system. Therefore, new technologies, market signals, tools and policies are being evaluated:

⁷Codified as [HRS Section 269-131](#)

⁸U.S. Department of Energy, Hawaii Clean Energy Programmatic Environmental Impact Statement, hawaiiicleanenergypeis.com

**Hawaii
Electricity
Reliability
Administrator**

In 2012, a new law authorized the Commission to perform electric system reliability oversight functions, including the establishment of the Hawaii Electricity Reliability Administrator. As described in the legislation, “in order to ensure that these types of generation resources can be integrated into the island grids, the technical, operational, and regulatory issues associated with running the electrical system must be considered and addressed . . . clear regulatory oversight of the State's grids will ensure system reliability, resiliency, and accountability.” For more, see page 47.

**Reliability
Standards
Working
Group**

Docket No. [2011-0206](#), which includes 32 listed parties and three intervenors, is investigating the implementation of reliability standards. In FY 2013, 68 documents (2,322 pages) were filed, including ten proposed reliability standards, a glossary of terms, and several studies addressing interconnection and curtailment. To illuminate working group deliberations and subsequent Commission decisions on reliability, the Hawaiian Electric Companies have been submitting monthly reliability reports (in accordance with Order No. 30371, issued May 4, 2012) that include information on frequency variations, significant system events, and kWh of curtailment of renewable resources.

Feed-In Tariff

As of June 30, 2013, the queue for Hawaii's Feed-In Tariff (i.e., the electric utility purchases renewable electricity from a small producer at an agreed-upon rate for 20 years) was full. A review of the program is underway; see Docket No. [2013-0194](#) and page 45.

**Net Energy
Metering**

With net metering, a customer's on-site renewable energy system is credited for any excess power provided to the grid; the customer is only charged for the "net" amount of electricity used (for a more detailed explanation, see page 44). The number and capacity of net metered systems has been approximately doubling each year. As of December 31, 2012, 133.2 MW (21,227 systems) had been installed on the Oahu (HECO), Maui County (MECO), and Hawaii Island (HELCO) grids; with net metering and other tariffs, the Kauai (KIUC) grid had 7.55 MW (1,121 systems) of customer-sited renewables, mostly photovoltaics.

3. Provide more options for customers to manage their electricity bills and reduce overall costs.

As new technologies and information systems become available, customers are taking a greater interest in their energy costs and are better able to manage their electricity bills. Programs include:

Public Benefit Fee

Public Benefits Fee funds, collected from ratepayers through a surcharge on electricity bills (Docket No. [2007-0323](#)), are used to support energy efficiency programs. The \$30,903,826 spent in FY 2013 provided 1.4 billion kWh of lifetime energy savings (at a cost of 2.1¢ per kWh) and peak demand reduction of 15.1 MW.

Demand Response

In addition to managing how many kWh are used, customers can reduce their energy costs by managing when electricity is used. Businesses can reduce demand charges by controlling how much power a facility draws at once. Customers can participate in direct load control programs, where they allow the utility to briefly interrupt power to loads such as water heaters or chillers when there is a disturbance on the grid. Other programs that engage customers in demand management (including those under Docket Nos. [2007-0341](#), [2010-0165](#), [2012-0079](#), and [2012-0118](#)) are under review.

On-Bill Financing

The on-bill financing program (Docket No. [2011-0186](#)) is being designed for renters and other utility customers who would otherwise be unable to afford permanently attached energy saving and renewable energy systems. Under the program, monthly payments for the equipment would be less than the value of electricity saved.

**Green Energy
Market
Securitization
(GEMS)**

Act 211, SLH 2013, established the regulatory framework for the creation of Hawaii's Green Energy Market Securitization program, to provide low-cost capital to finance the purchase and installation of clean energy technologies for use in on-bill financing and other energy programs. More information may be found on page 54.

4. Align and fairly allocate risks, cost, and incentives in utility rate recovery.

New technologies, resources, requirements, risks, challenges, and opportunities abound for regulated utilities and customers, as well as non regulated service and technology providers. Fairly allocating the risks and rewards, while aligning market signals to reflect market realities, protecting the public interest, and maintaining reliability, requires careful, thorough, and timely consideration of a complex and often changing system. In addition to rate cases (Docket Nos. [2010-0080](#), [2011-0092](#), [2012-0099](#), and [2013-0373](#)), these issues are addressed through activities such as a review of decoupling mechanisms (Docket No. [2013-0141](#)).

Plans

- Address increased capacity building staff and increased technical support and resources for the agency.

To effectively and efficiently carry out the important work of the Commission, the Commission needs to be adequately funded, fully staffed and optimally resourced. More information is provided in the administrative update section, beginning on page 16.

- Move quickly but deliberately on strategic objectives.

Open dockets to investigate important issues; engage working groups, technical experts, and consultants to quickly and effectively develop robust solutions; implement, monitor and enforce regulations; communicate objectives, progress, and challenges to regulated industries, decision-makers, and the public.

Recommendations for Legislative and Executive Action

In separate reports submitted to the 2014 Legislature regarding the achievability and effectiveness of Hawaii's RPS and EEPs; the consolidated comments of the Commission, Department of Health and the Department of Business, Economic Development & Tourism to the U.S. Environmental Protection Agency regarding considerations in the design of a program to reduce carbon pollution from existing power plants;⁹ and with the policy outlined in Act 99, SLH 2012;¹⁰ it appears that existing policies, statutes, and authority conveyed to the Commission are sufficient to drive the implementation of Hawaii's clean energy efforts which constitute a major portion of the Commission's activities and workload.

However, as the Commission is a creature of statute, it is the Legislature's prerogative to determine if sufficient competition exists in the property and passenger carrier sectors as well as the telecommunication sector to not warrant rate regulation. Therefore, at this time the Commission does not have any major legislative recommendations.

It should be recognized that the electricity sector – the most capital-intensive, complex, and a vital part of Hawaii's economy – is facing numerous challenges in the pace and scale of new technologies and the advent of customer choice. Here we find 21st century speed colliding with 20th and even 19th century rules, institutions, and cultures. As the State's energy infrastructure undergoes this transformational change, the Commission is also evolving from a traditional regulatory role of presiding and reacting to applications filed by the electric and gas utilities, to a more proactive role responsible for developing strategy and guiding action plans to successfully accomplish the State's policy directives. To meet the expanding role and responsibilities of the Commission, active recruitment

⁹<http://www2.epa.gov/carbon-pollution-standards>

¹⁰http://www.capitol.hawaii.gov/session2012/bills/GM1201_.PDF

and cultivation of a highly skilled professional staff is necessary to analyze and scrutinize these important decisions. Currently, to keep pace with the growing workload and new technical issues, the Commission has increasingly relied on outside contractors. However, the State needs to continue to invest in the capacity of the Commission staff to manage the growing number, and increasing technical complexity, of issues brought before the Commission to ensure these important decisions are made in the public interest in the most cost-effective and efficient way possible.

Only in the FY 2013 budget has the PUC received legislative approval for full funding of its office renovation and expansion. As space constraints are still a major barrier to accommodate a fully staffed PUC, the emphasis must be placed on the quality, not the quantity, of professional staff, and a competitive salary structure to attract and retain (especially after a significant investment in training is made by the Commission) a highly competent staff. Therefore, after proper consideration, review and approval is given to the Commission's budget and priorities, a streamlined approach must be considered by the Administration on how to meet the challenges of this quickly evolving agency in the most efficient and expedient way.

Administrative Update

In FY 2013, the Commission continued to work on implementing its reorganization plans pursuant to Act 177, SLH 2007, and the related required office space expansion and renovation in the State-owned Kekuanaoa building. The 2013 Legislature approved the Commission's Fiscal Biennium 2013-2015 request of approximately \$3.9 million to fund the first phases of the renovation project which is planned to be completed by the summer of 2017 and cost approximately \$6.8 million. This renovation project, when completed, will provide adequate office space to fully implement the Commission's reorganization, increase operational efficiencies and security, and increase equity for the State through long-term upgrades of a state-owned historical building.

Due to office space limitations, the Commission was required to prioritize recruiting efforts. During FY 2013, the following key Commission positions were filled:

- 1 Commissioner
- 1 Chief Researcher
- 1 Attorney
- 1 Research Assistant
- 1 Economist
- 1 Legal Assistant
- 3 Office Assistants

Additionally, as of October 2013, four months into FY 2014, the Commission is actively recruiting for and expects to fill five priority staff positions by the end of FY 2014.

In FY 2013, the Commission's American Recovery and Reinvestment Act of 2009 ("ARRA") grant allowed for thirty-nine training opportunities at seven electricity-related training sessions and workshops. As in previous years, these training opportunities increased the Commission staffs' technical knowledge in the evolving electricity industry and helped to promote valuable relationships with experts from entities such as the New Mexico State University's Center for Public Utilities; the American Council for an Energy Efficient Economy; and the National Renewable Energy Laboratory. As part of the National Association of Regulatory Utility Commissioners' effort to keep regulatory commissioners and staffers abreast of emerging issues, the Commission participated in workshops on cybersecurity and emission reduction strategies.

Number of Dockets Pending, Opened, Completed, and Carried Forward

The Commission issued a total of 790 decisions and orders in FY 2013. At the beginning of FY 2013 (July 1, 2012), there were 214 pending dockets¹¹ that had been opened in previous years. During the fiscal year, an additional 391 new dockets were opened and 422 dockets were completed (closed). As of the end of FY 2013, 183 open dockets remained, to carry over to FY 2014. The number of dockets by type and status are shown in Table 1.

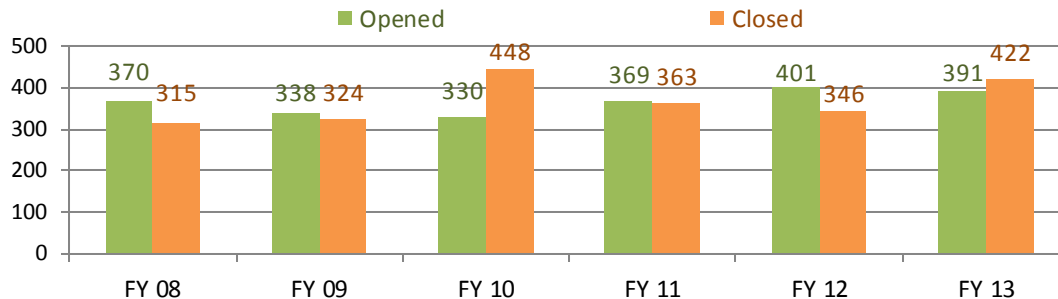
Table 1 - Public Utilities Commission Dockets

Sector	Carried over from FY2012	Opened in FY2013	Closed in FY2013	To Carry Forward to FY2014
Electric	68	29	47	50
Gas	3	5	7	1
Telecommunication	22	73	66	29
Water/Sewer	16	6	9	13
Motor Carrier - Passenger	74	200	209	65
Motor Carrier - Property	26	76	80	22
Water Carrier	3	2	3	2
One Call Center	2	0	1	1
TOTAL	214	391	422	183

Brief summaries of selected dockets are provided, by sector, in the “Actions and Status by Sector” chapter of this report. Docket filings, decisions, and orders are available from the Commission puc.hawaii.gov and Document Management System (“DMS”) websites, dms.puc.hawaii.gov/dms. Non-docketed filings in calendar year 2012 are under Docket No. 2012-0000 and those from calendar year 2013 are under Docket No. 2013-0000.

¹¹Regulatory proceedings are conducted in a formal docket process. For more on the process, see laws (for example, HRS [Chapter 269](#)); rules (such as those described in Title 6, Chapters 60-83, <http://budget.hawaii.gov/about/adminrules/>); and General Orders.

Figure 1 - Number of Dockets Opened and Closed, Fiscal Years 2008-2013



Electronic Filing (e-File)

Act 69, SLH 2011 (“Act 69”) required the Commission to accept all required filings in either an original or electronic form no later than July 1, 2013. Since the enactment of Act 69 in 2011, the Commission worked in partnership with its consultant, the Dayhuff Group, to update the Commission’s Document Management System to accept electronic filing of documents (“eFile”) and related payments (“ePayment”).

The Commission met the statutorily required deadline and has been successfully accepting eFilings and ePayments since July 1, 2013. The Commission continues to assess its DMS and has begun to work through a prioritized list of enhancements, inclusive of eFile and ePayment improvements, to make the DMS a more effective and efficient tool for Commission staff, the public, regulated entities, and stakeholders.

Electronic filing is optional. Instructions and forms for e-filing are available at puc.hawaii.gov/filing/efiling.

Legislative Update

Legislative measures enacted in the 2013 legislative session included:

Act 24: Senate Bill (“SB”) 1039, Relating to the Public Utilities Commission

Consolidates the special fund report required by HRS Section 269-33 within the Commission's annual report under HRS Section 269-5.

Act 34: SB1040, Relating to Electric Systems

Authorizes the Commission to consider the value of implementing advanced grid modernization technology in the State.

Act 37: SB120, Relating to Public Utilities

Authorizes the Commission to establish a policy to implement incentives to induce and accelerate electric utilities' cost reduction, renewable energy use, fossil unit retirements, and investments to modernize the State's electrical grids.

Act 57: SB1045, Relating to Electric Cooperatives

Authorizes the Commission to waive or exempt an electric cooperative from any or all provisions of HRS Chapter 269, as well as any other applicable charters, franchises, rules, decisions, orders, or any other laws.

Act 74: House Bill (“HB”) 980, Relating to Highway Safety

Prohibits the use of mobile electronic devices while operating a motor vehicle in the State and establishes monetary penalties (also applies to motor carriers).

Act 104: SB1042, Relating to the Public Utilities Commission

Improves the flexibility of the Commission to hire professional staff, and repeals existing position staff descriptions for the commission under Act 177, SLH 2007.

Act 114: HB977, Relating to Transportation

Conforms Hawaii state law to parallel federal regulations relating to commercial driver licensing.

Act 130: HB504, Relating to State Funds

Amends criteria to be used in new special or revolving funds, requiring a clear link between program and revenue source.

Act 134: HB200, Relating to the State Budget

Appropriates positions and funds for the operating and capital improvement budget of the Executive Branch for FY 2014 and FY 2015.

Act 211: SB1087, Relating to Green Infrastructure

Establishes the regulatory framework for the creation of Hawaii's Green Energy Market Securitization program, to provide low-cost capital to finance the purchase and installation of clean energy technologies for use in on-bill financing and other energy programs. See page 93.

Act 214: SB106, Relating to Aging

Establishes the Task Force on Mobility Management. Includes the Chair of the PUC among listed task force members.

Act 259: HB811, Relating to Energy Information Reporting

Authorizes DBEDT to receive fuel distributor registrations; repeals HRS Section 486J-11.

Act 260: HB1405, Relating to the Public Utilities Commission

Requires the Commission to include a summary of power purchase agreements in its annual report. Clarifies the use of the public benefits fee under HRS Section 269-121 to support clean energy technology, demand response technology, energy use reduction, and demand-side management infrastructure.

Act 261: SB19, Relating to Renewable Energy

Exempts, from the definition of public utility, landlords who install renewable energy systems on their property and provide, sell, or transmit electricity generated from those renewable energy systems to tenants or lessees on the premises.

Act 264: HB635, Relating to Broadband

Among other provisions, requires broadband permit applicants to comply with safety and engineering requirements. Also, limits the overall weight load on utility poles to those established by the Federal Communications Commission and this Commission when those poles are being used to accommodate telecommunications cables.

Senate Concurrent Resolution No. [37](#):

Concerning Stranded Costs of Generation for Electric Utilities

Requests the Commission to consider whether stranded costs are a significant factor in the electric utilities' failure to retire old, oil-fired generation plants; any appropriate measures that would encourage electric utilities to retire old, oil-fired generation plants; and the potential impact this would have on ratepayers.

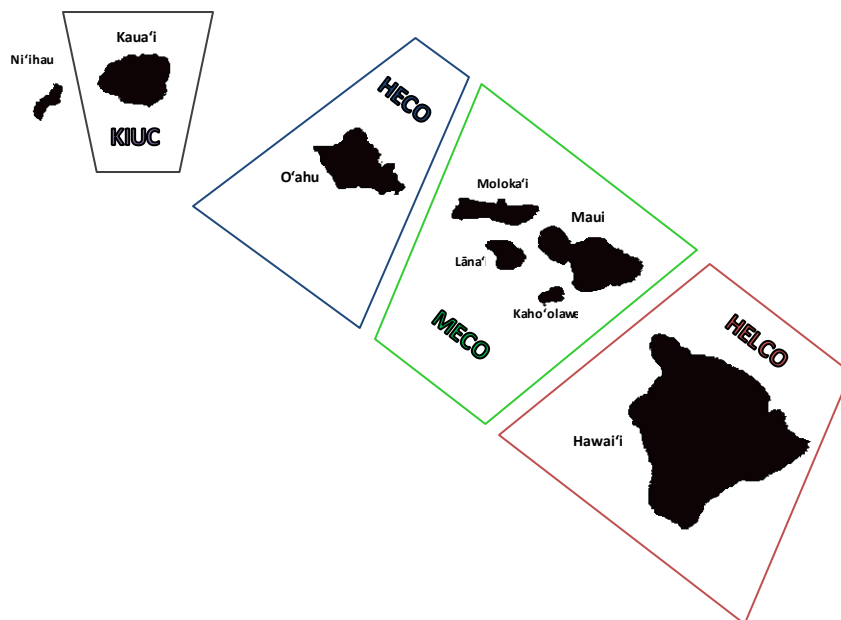
Actions and Status by Sector

Electricity Sector

Hawaii's Electric Utilities

The Public Utilities Commission regulates Hawaii's four electric utilities: Kauai Island Utility Cooperative ("KIUC"), serving the island of Kauai; Hawaiian Electric Company ("HECO"), serving the island of Oahu; Maui Electric Company ("MECO"), serving the islands of Maui, Molokai, and Lanai; and Hawaii Electric Light Company ("HELCO"); serving the Island of Hawaii. Electric utility service territories are shown in Figure 2.

Figure 2 - Hawaii's Electric Utility Service Territories



Each of Hawaii's six main islands has its own electrical grid, not connected to any other island. HECO and its subsidiaries, MECO and HELCO, serve about 95 percent of the State's population. These three related companies are often referred to as "the HECO Companies."

The island of Kauai, about 5 percent of the State's population, is served by KIUC.

The islands of Niihau and Kahoolawe do not have electric utility service.

Electric Utility Customers and Operations

Over the past five years, the number of electricity customers has increased very slightly (Table 2); electricity sales have declined, at an average rate of 1.86 percent per year (Table 3, Figure 3).¹²

Table 2 - Number of Electric Utility Customers, Calendar Years 2008-2012

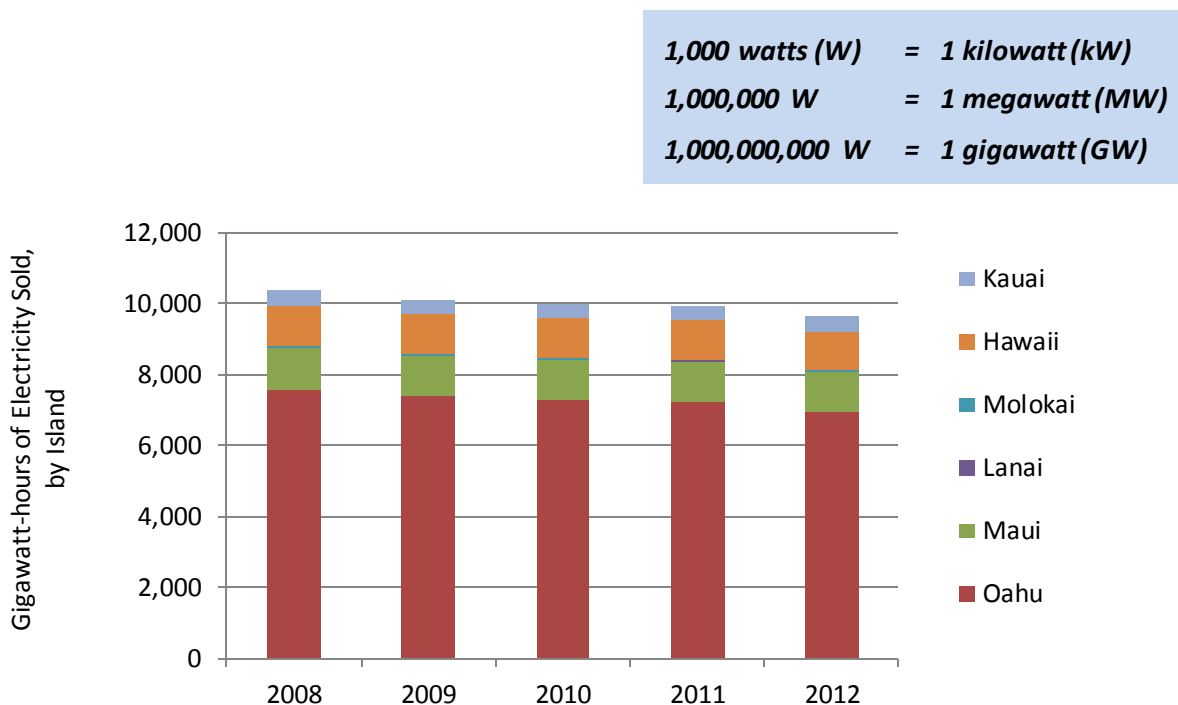
Year	HECO Customers	HELCO Customers	MECO Customers	KIUC Customers
2008	294,371	79,386	66,810	35,713
2009	294,802	79,679	67,126	36,004
2010	295,637	80,171	67,405	36,113
2011	296,679	80,807	68,010	36,222
2012	297,598	81,537	68,575	36,473

Table 3 - Annual Electricity Sales in Gigawatt-hours, By Island, Calendar Years 2008-2012

	2008	2009	2010	2011	2012
Oahu	7,556	7,378	7,277	7,242	6,976
Maui	1,177	1,134	1,135	1,126	1,090
Lanai	29	26	25	25	25
Molokai	34	32	31	31	30
Hawaii	1,141	1,120	1,110	1,104	1,085
Kauai	454	436	435	435	433
TOTAL	10,390	10,126	10,013	9,962	9,639

¹²Sources: HECO, MECO, and HELCO annual Service Reliability Reports; KIUC Annual Report to the PUC.

Figure 3 - Annual Electricity Sales, By Island, 2008-2012



System Peaks

Hawaii's electrical grids continued to experience annual system peak demand during winter evenings: between 6:00 PM and 7:00 PM, December and January. At times of system peak demand, electricity production, transmission, and distribution costs may be several times higher than at times of lower demand.¹³

HECO System Peak¹⁴

The 2012 peak demand for the HECO system was 1,169 MW gross, on December 4, 2012 at 6:40 PM, slightly lower than the peak demand in 2011 (1,177 MW gross on February 17, 2011 at 6:56 PM). HECO's historical

¹³U.S. Energy Information Administration, [Real Time Power Prices](#), accessed July 26, 2013.

¹⁴Peaks are from annual service reliability reports. Times are from an October 25, 2013 letter from HECO to the Commission.

system peak (1,327 MW) was set on the evening of October 12, 2004, at 6:49 PM.

HELCO System Peak

The 2012 peak demand for the HELCO system was 193.9 MW gross, on January 3, 2012 at 6:39 PM, slightly lower than the peak demand in 2011 (194.1 MW on December 27, 2011 at 6:22 PM). The highest system peak demand remains at 207.6 MW, on December 26, 2007 at 6:34 PM.

MECO System Peak

The 2012 peak demand for the MECO system was 199.1 MW gross, on December 31, 2012 at 6:29 PM, 5 MW higher than the peak demand in 2011 (194.1 MW on February 17, 2011 at 7:02 PM). The highest system peak remains at 210.9 MW, set on October 11, 2004 at 6:45 PM.

KIUC System Peak

KIUC's 2012 peak system demand was 73.06 MW, set on December 26, 2012 at 6:45 PM. This was higher than the 2011 system peak of 72.05 MW, set on January 13, 2011 at 6:47 PM, but lower than the 2010 system peak, 76.54 MW, set on December 28, 2010 at 6:38 PM, and lower than the 2007 peak of 77.75 MW.¹⁵

Fuel Prices

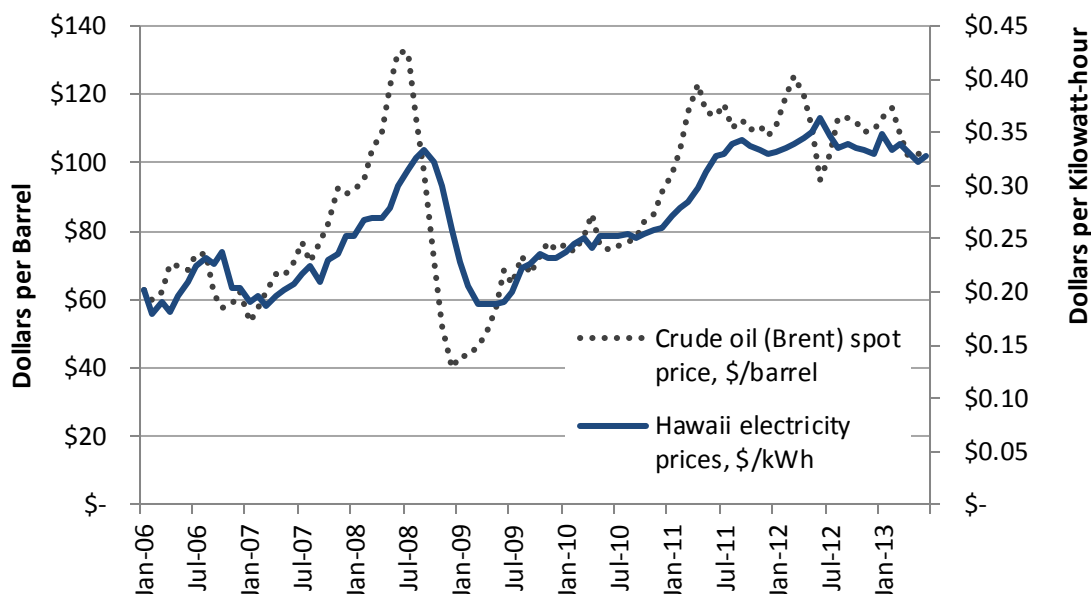
Hawaii, like other island areas,¹⁶ is highly dependent on petroleum-based fuels¹⁷ for electricity generation. A high reliance on oil for electricity generation means that oil price volatility – sudden and extreme changes in oil price – can cause sudden and extreme changes in electricity prices. In Hawaii, with oil as the primary fuel used for electricity generation, electricity prices generally follow oil prices. Oil prices and average Hawaii electricity prices are shown in Figure 4.¹⁸

¹⁵Times are from a letter dated October 22, 2013, from KIUC to the Commission.

¹⁶Energy Development in Island Nations, <http://www.edinenergy.org>; *EU [European Union] Islands: Towards a Sustainable Energy Future*, June, 2012.

¹⁷Fuel oil, diesel, and naphtha, also known as “distillates” and “petroleum liquids.”

¹⁸Hawaii electricity prices are available from DBEDT's Monthly Energy Trends, <http://dbedt.hawaii.gov/economic/energy-trends-2/>. Brent prices are available from the U.S. Energy Information Administration.

Figure 4 - Oil Prices and Average Hawaii Electricity Prices

Over three-quarters of Hawaii's electricity needs are still met with fossil fuels. Also, older "avoided cost" contracts,¹⁹ even for renewable energy sources, often receive contracted payments based as least partly on the cost of oil-fired utility generation.

To reduce the high costs associated with an oil-dependent electricity system, Hawaii's electric utilities have been directed, by State law and Commission regulations, to reduce their dependence on oil for electricity generation. This is discussed further under the section titled Renewable Portfolio Standards (RPS) (see page 35).

To reduce consumers' power bills, as well as to delay the need for increased generation capacity, EEPS (see section on Energy Efficiency Portfolio Standards (EEPS) starting on page 37) have also been established.

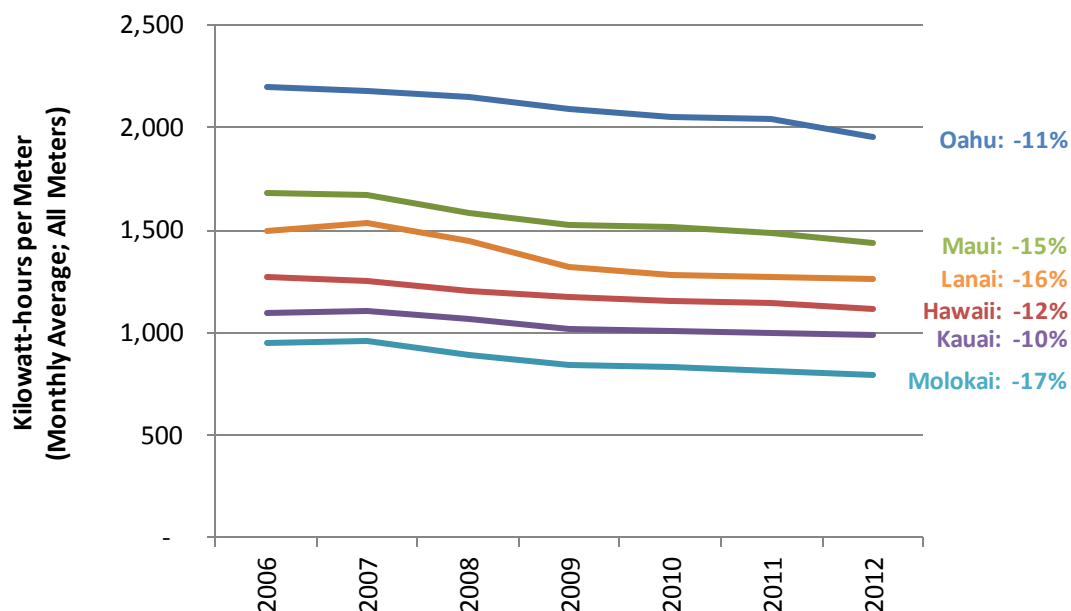
Electricity Use, Rates, and Average Residential Bills

The decline in electricity use, per metered location (all meters, including residential, commercial, etc.), is shown in Figure 5, with the cumulative decline

¹⁹This is not generally accepted in Hawaii any more. However, there are several old (pre-2005) power purchase contracts that provide payments based on avoided cost.

over seven years shown by island: Oahu, 11 percent; Maui, 15 percent; Lanai, 16 percent; Hawaii, 12 percent; Kauai, 10 percent; and Molokai, 17 percent.

Figure 5 - Monthly Average Kilowatt-Hour Demand per Meter, 2006-2012

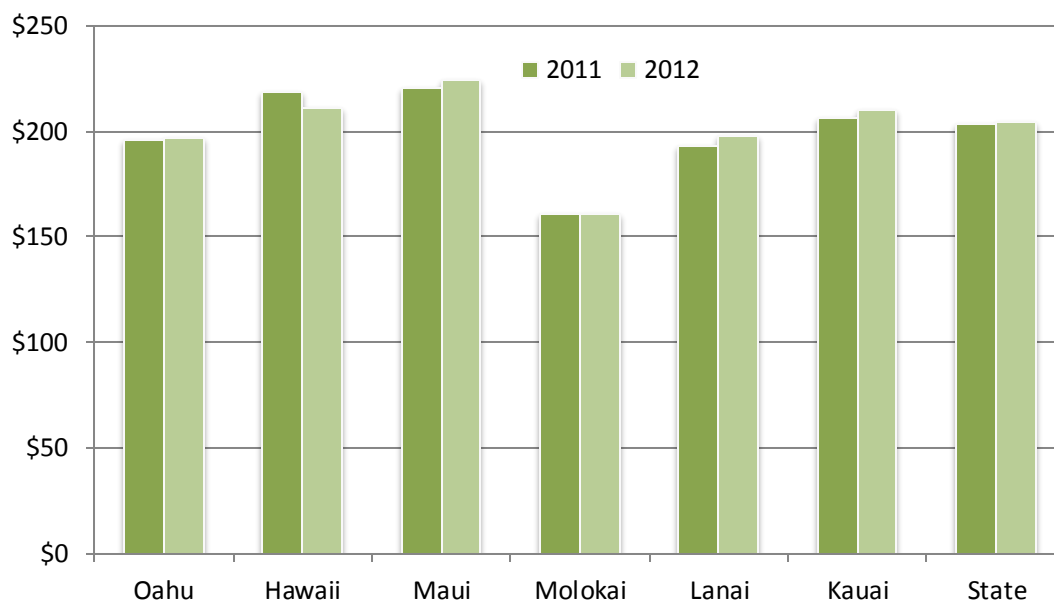


Residential electricity use, rates, and average bills for 2011 and 2012 are shown in Table 4 and Figure 6. In general, annual average rates went up and electricity use declined.

Table 4 - Residential Electricity Use and Average Bills, by Island, 2011 and 2012²⁰

		Oahu	Hawaii	Maui	Molokai	Lanai	Kauai	State
2011	Average use (kWh/month)	611	523	615	374	438	473	586
	Average cost per kWh	\$ 0.32	\$ 0.42	\$ 0.36	\$ 0.43	\$ 0.44	\$ 0.43	\$ 0.35
	Average monthly bill	\$ 196	\$ 219	\$ 220	\$ 161	\$ 193	\$ 206	\$ 203
2012	Average use (kWh/month)	561	498	578	348	425	465	545
	Average cost per kWh	\$ 0.35	\$ 0.42	\$ 0.39	\$ 0.46	\$ 0.47	\$ 0.45	\$ 0.37
	Average monthly bill	\$ 197	\$ 211	\$ 224	\$ 161	\$ 198	\$ 210	\$ 204

Figure 6 - Average Monthly Residential Electric Bills, 2011 and 2012



The following figures and tables show the components of residential rates and how rates have changed from one June to the next, over the past several years. For

²⁰Electricity data is available from DBEDT's *Monthly Energy Trends*, http://dbedt.hawaii.gov/economic/data_reports/energy-trends/

comparison purposes, the rates shown are based on a customer using 600 kWh per month. Data is from PUC records of monthly utility filings of energy cost adjustment factors.

Figure 7 - HECO Six Year Comparison of Residential Rate Components, Including Base Rates, Energy Cost Adjustment Clause (ECAC), and Other Adjustments (for 600 kWh bill)

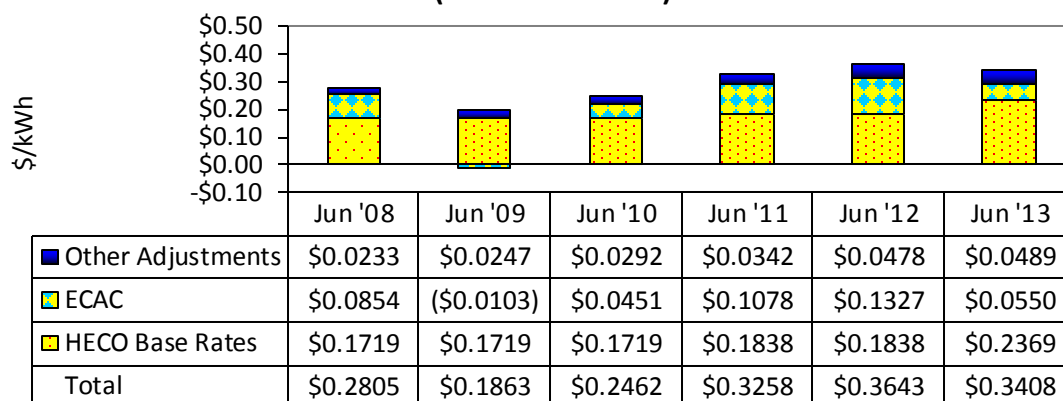


Figure 8 - HELCO Six Year Comparison of Residential Rate Components, Including Base Rates, ECAC, and Other Adjustments (for 600 kWh bill)

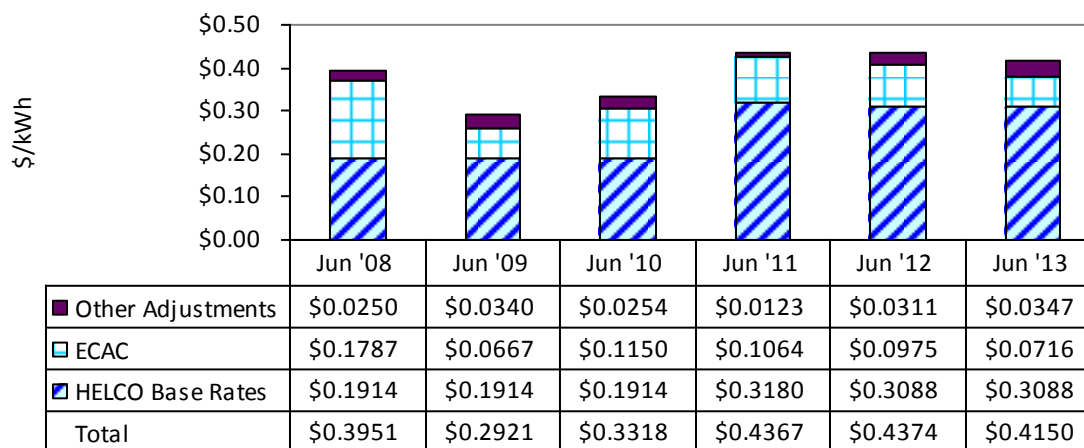


Figure 9 - MECO - Maui Division
Six Year Comparison of Residential Rate Components,
Including Base Rates, ECAC, and Other Adjustments (for 600 kWh bill)

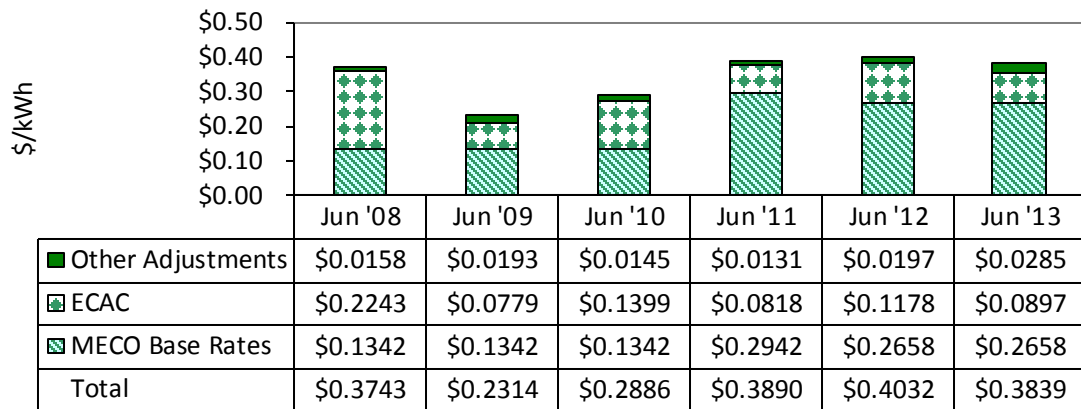


Figure 10 - MECO - Molokai Division
Six Year Comparison of Residential Rate Components,
Including Base Rates, ECAC, and Other Adjustments (for 600 kWh bill)

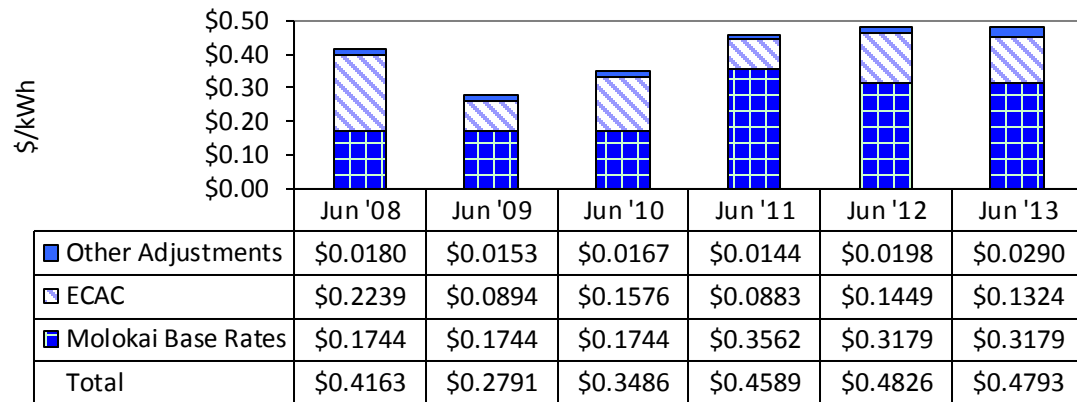


Figure 11 - MECO - Lanai Division
Six Year Comparison of Residential Rate Components,
Including Base Rates, ECAC, and Other Adjustments (Based on 600 kWh bill)

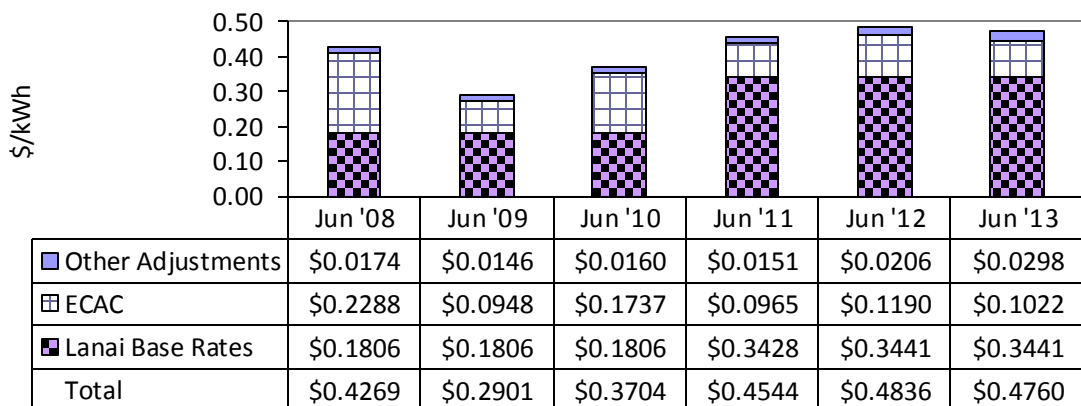
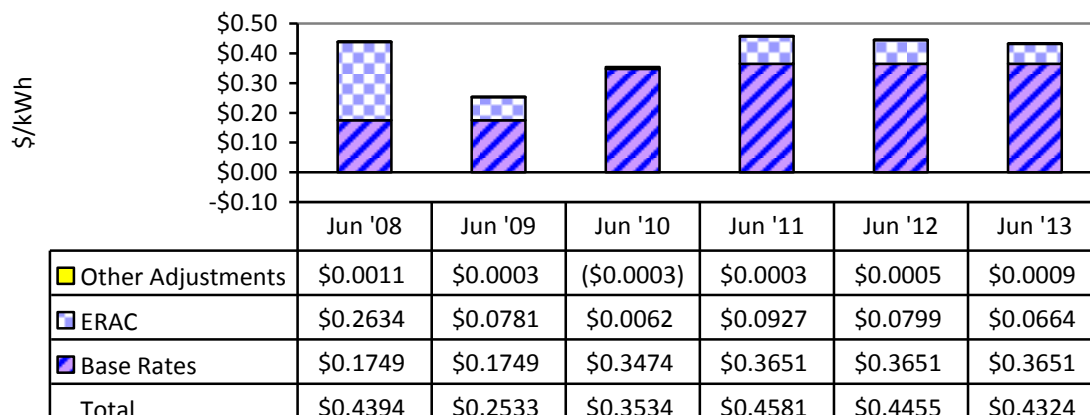


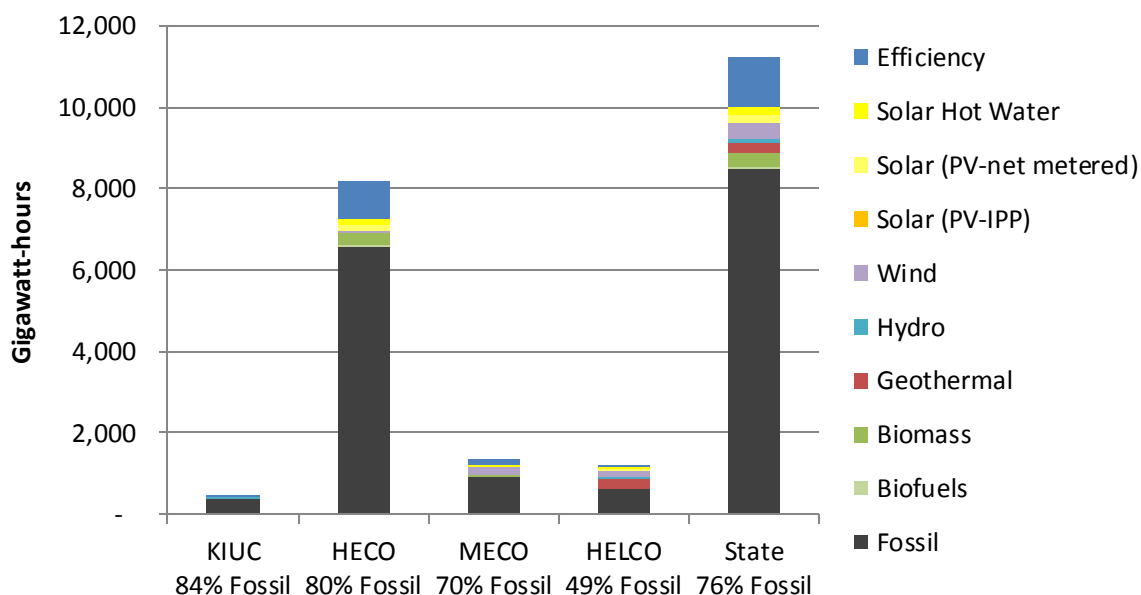
Figure 12 - KIUC
Six Year Comparison of Residential Rate Components, Including Base Rates, Energy Rate Adjustment Clause (ERAC), and Other Adjustments (for 600 kWh bill)



Sources Used to Meet Hawaii's Electricity Needs

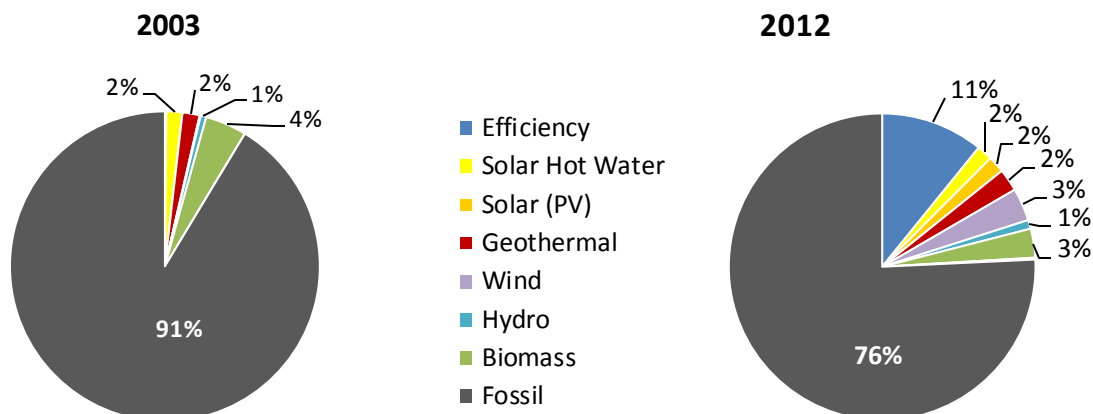
The current energy sources (including efficiency) used to meet Hawaii's electricity needs are shown in Figure 13. Although still heavily dependent on fossil fuels, Hawaii has reduced its dependence on fossil fuels from 91 percent in 2003 to 76 percent in 2012.

Figure 13 - Resources Used in 2012 to Meet Hawaii's Electricity Needs



As shown in Figure 14, Hawaii has diversified its electricity resources (including efficiency as a resource) significantly over the past 10 years.

**Figure 14 - Reduction of Dependence on Fossil Fuels
for Electricity, from 91% in 2003 to 76% in 2012.**



Source: Renewable Portfolio Standard reports submitted to the Commission by HECO and KIUC; and percentages provided in Annual Fuel Mix Disclosure, 2003-2012, submitted by KIUC to the Commission, 4/10/13

Electricity-Related Dockets

Electricity-related dockets include:

Table 5 - Summary of Selected Electricity-Related Dockets and Rate Cases

Docket #	Topic	Note
2003-0372	Competitive bidding framework.	By Order No. 23121, the Commission established a competitive bidding framework for the HECO companies.
2006-0084	Net Energy Metering (NEM).	Docket closed April 10, 2013. From Order No. 31167, "... the Commission intends to further examine technical, economic and social/equity issues associated with NEM in conjunction with a broader reexamination of other renewable energy procurement methods."
2007-0008	Renewable Portfolio Standards (RPS).	Docket Closed. Reports submitted annually, in accordance with Order No. 23912.
2007-0323	Hawaii's Public Benefits Fund.	Public Benefits Fee surcharge to continue at 1.5 percent. Order No. 31005, dated February 19, 2013, approved budget of \$34,929,332 for FY13.
2007-0341	HECO, HELCO, MECO Demand-Side Management (DSM) program.	Order No. 31130, dated March 27, 2013, approved HECO Companies' fast demand response pilot program carryover request and budget modification for the 2013 program year.
2008-0069	Schedule Q payment rates.	Ongoing; utility consultants analyzing Schedule Q approaches.

Docket #	Topic	Action
<u>2008-0083</u>	HECO 2009 Test Year Rate Case (FY 2013 activities relate to items remaining from 12/29/10 Final Decision and Order).	On January 28, 2013, a Stipulated Settlement Agreement was reached. On March 19, 2013, Commission approval included: utility write-off of \$40 million in CT-1 and CIS capital costs in lieu of targeted regulatory audits; assignment of recoverable costs; withdrawal of the HELCO 2013 rate case (until 2016); delay of HECO 2014 rate case to no earlier than 1/2/14.
<u>2008-0273</u>	Feed-In Tariffs (FIT).	April 22, 2013 report by the Independent Observer recommended that the program continue, with modifications. As of April 17, 2013, the FIT program had 141 active (61.6 MW) and 71 reserve (70.5 MW) projects and was full. Docket closed 8/27/13.
<u>2008-0274</u>	Decoupling.	On August 31, 2010, the Commission approved the decoupling of utility revenues from changes in energy sales.
<u>2010-0037</u>	Energy Efficiency Portfolio Standard (EEPS).	Docket Closed. EEPS Framework approved in Order No. 30089.
<u>2010-0080</u>	Application by HECO for test year 2011 rate increase.	By Order No. 30576, dated August 9, 2012, an annual revenue requirement of \$1,772,335,000 for HECO was approved, with an effective date of September 1, 2012.
<u>2010-0165</u>	Fast demand response (DR) pilot program.	2010 application by HECO, HELCO, and MECO. By Order No. 30271, March 19, 2012, two-year program approved. Phase 1: 6 MW HECO and 0.2 MW MECO, semi automated DR programs. Phase 2: 1 MW HECO program, automated.
<u>2011-0038</u>	Competitive bidding for firm capacity on Maui.	Proceeding closed on July 11, 2013, by Order No. 31357. MECO's Adequacy of Supply and Integrated Resources Planning reports show that additional capacity requested is not needed at this time.
<u>2011-0039</u>	Competitive bidding for firm capacity on Oahu.	Proceeding closed on July 11, 2013, by Order No. 31358. HECO's Adequacy of Supply and Integrated Resources Planning reports show that additional capacity requested is not needed at this time.
<u>2011-0092</u>	Application by MECO for revised rates, schedules, and rules.	By Order Nos. 31288, 31343 and 31352, the PUC (1) approved an increase of 1.29 percent; (2) required a refund to ratepayers; (3) acknowledged that the refund would be tempered by the effects of the revenue balancing adjustment; and 4) directed MECO to file a System Improvement and Curtailment Reduction Plan.
<u>2011-0186</u>	On-Bill Financing (OBF).	The PUC: (1) determined OBF can be viable; (2) specified program parameters; (3) required KIUC's participation in informal processes; (4) established a working group; and (5) denied the Simply Solar tariff application by the HECO Companies.

Docket #	Topic	Action
<u>2011-0206</u>	Reliability standards for HECO, HELCO, and MECO.	Independent Facilitator's final report submitted on March 25, 2013 (747 pages); Technical Review Committee report submitted on May 29, 2013 (97 pages). Key work products included ten proposed reliability standards, a glossary of terms, several studies addressing interconnection and curtailment, and recommendations.
<u>2011-0225</u>	Competitive bidding for 200 MW of new renewable energy for Oahu.	On July 11, 2013, by Order No. 31354, new guidance was provided to HECO for development of the draft final Oahu 200 MW renewable energy Request for Proposals.
<u>2012-0036</u>	Integrated Resource Planning (IRP).	On June 28, 2013, an IRP report and action plan (2256 pages) was filed by the HECO Companies for Commission review. See page 52.
<u>2012-0079</u>	Residential Direct Load Control (RDLC).	On April 13, 2012, HECO applied for approval of expansion of the RDLC program. On September 28, 2012, HECO was directed to continue the program at current levels.
<u>2012-0092</u>	Competitive bidding for 50 MW of new geothermal on the island of Hawaii.	On February 28, 2013, a final RFP (995 pages) was issued by HELCO for Renewable Geothermal Dispatchable Energy and Firm Capacity Resources on the Island of Hawaii.
<u>2012-0099</u>	HELCO rate increase request.	January 28, 2013, a Settlement Agreement in Docket No. 2008-0083 was reached between HELCO and the Consumer Advocate. Application withdrawn, 3/22/13; docket closed 3/27/13.
<u>2012-0118</u>	Commercial & Industrial Direct Load Control (CIDLC) program.	On May 17, 2012, HECO applied for approval of expansion of the CIDLC program. On September 28, 2012, Order No. 30663 directed HECO to continue the program at current levels.
<u>2012-0212</u>	Hu Honua Power Purchase Agreement.	On August 30, 2012, HECO requested approval of a contract with Hu Honua for 21.5 MW of firm dispatchable biomass energy.
<u>2013-0082</u>	Maintenance replacements of wood poles by HECO.	On April 12, 2013, by Order No. 31179, the Commission instituted an investigation. One topic is objections to pole heights.
<u>2013-0141</u>	Review decoupling for HECO, HELCO, and MECO.	On May 31, 2013, by Order No. 31289, the Commission instituted an investigation of whether the decoupling mechanisms are serving intended purposes.
Dockets opened soon after the close of the fiscal year:		
Docket #	Topic	Action
<u>2013-0168</u>	Review the progress of Castle & Cooke's proposed Lanai wind project.	On July 11, 2013, by Order No. 31355, the Commission instituted an investigation which, among other items, required a written statement specifying in detail the status of the potential 200 MW wind project and uncertainty created by the Lanai Transaction.

2013-0169	Inter-island undersea cable.	On July 11, 2013, by Order No. 31356, the Commission instituted an investigation of whether an Oahu-Maui interisland transmission system may be in the public interest.
2013-0194	Feed-In Tariff (FIT) for HECO, HELCO, and MECO.	On August 27, 2013, by Order No. 31424, the Commission instituted an investigation to reexamine the Feed-In Tariff program, consistent with Docket No. 2008-0273's direction to reexamine FIT after 2 years.

Renewable Portfolio Standards (RPS)

Hawaii state law²¹ requires that renewable energy be used for an increasing percentage of Hawaii's electricity production. Renewable energy is defined as energy generated or produced from:

- (1) Wind;
- (2) The sun;
- (3) Falling water;
- (4) Biogas, including landfill and sewage-based digester gas;
- (5) Geothermal;
- (6) Ocean water, currents, and waves, including ocean thermal energy conversion;
- (7) Biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste and other solid waste;
- (8) Biofuels; and
- (9) Hydrogen produced from renewable energy sources.

²¹HRS [§ 269-91 through 95](#).

The minimum renewable electricity to be produced by each electric utility²² is:

- (1) Ten percent of its net electricity sales by December 31, 2010.
- (2) Fifteen percent of its net electricity sales by December 31, 2015.
- (3) Twenty-five percent of net electricity sales by December 31, 2020.
- (4) Forty percent of its net electricity sales by December 31, 2030.

Docket No. [2007-0008](#) established penalties of \$20 per megawatt-hour (“MWh”) for failure to meet the requirements, and specified that such penalties shall not be recovered through rates.

Progress in reducing dependence on fossil fuel for electricity generation is shown in Figure 15 (HECO Companies) and Figure 16 (KIUC). Hawaii utilities are in compliance with the requirements. The Commission is required to evaluate the RPS every five years, beginning in 2013 (see report, on the Commission website), and may revise the standards based on the best information available at the time.

Prior to January 1, 2015, up to fifty percent of the RPS can be met with electrical energy savings via the use of renewable displacement technologies, including solar water heating, sea-water air-conditioning, solar air-conditioning, and customer-sited, grid-connected renewable energy systems; and the use of energy efficiency technologies, including heat pump water heating, ice storage, ratepayer-funded efficiency programs, and rejected heat from certain co-generation and combined heat and power systems.

After January 1, 2015, electricity from customer-sited, grid-connected renewable energy systems will count towards the RPS. Electric energy savings from energy efficiency measures and renewable displacement or off-set technologies (including solar water heating and sea-water air-conditioning district cooling systems) will not count toward the RPS; rather, they will count toward energy-efficiency portfolio standards.

²²Related companies (i.e., HECO, MECO, HELCO) may aggregate their data when calculating compliance with RPS.

Energy Efficiency Portfolio Standards (EEPS)

The EEPS²³ is to achieve 4300 GWh of electricity use reductions statewide by 2030. An EEPS Framework and interim standards (Table 6) were set by the Commission in January 2012 by Docket No. [2010-0037](#), Decision and Order No. 30089. The Commission is required to evaluate the EEPS every five years, beginning in 2013 (see report, on the Commission website), and may revise the standards based on the best information available at the time.

Table 6 - RPS and EEPS Standards

Year	RPS	RPS Includes:	EEPS	EEPS Includes:
2010-2014	10%	<ul style="list-style-type: none">• Renewable (wind, solar, biogas, geothermal, ocean, biomass, biofuels, renewable hydrogen) electricity distributed by the utility.• Beginning 1/1/2015, also includes customer-sited, grid-connected renewable electricity generation.• Until 12/31/2014, up to half the requirement may be met by energy efficiency and displacement technologies.	196.5 GWh/yr.	<ul style="list-style-type: none">• Energy efficiency technologies, including heat pump water heaters, ice storage.• Use of rejected heat from combined heat and power systems (but not from units selling fossil-based electricity to utilities).• Solar water heating, sea water air conditioning, and other renewable-based displacement technologies.• Beginning 1/1/2015, does not include customer-sited, grid-connected renewable electricity generation.
2015	15%		1375 GWh (cumulative)	
2020	25%		2350 GWh (cumulative)	
2030	40%		4300 GWh (cumulative)	

²³[HRS § 269-96](#).

Renewable and efficiency levels achieved by Hawaii utilities

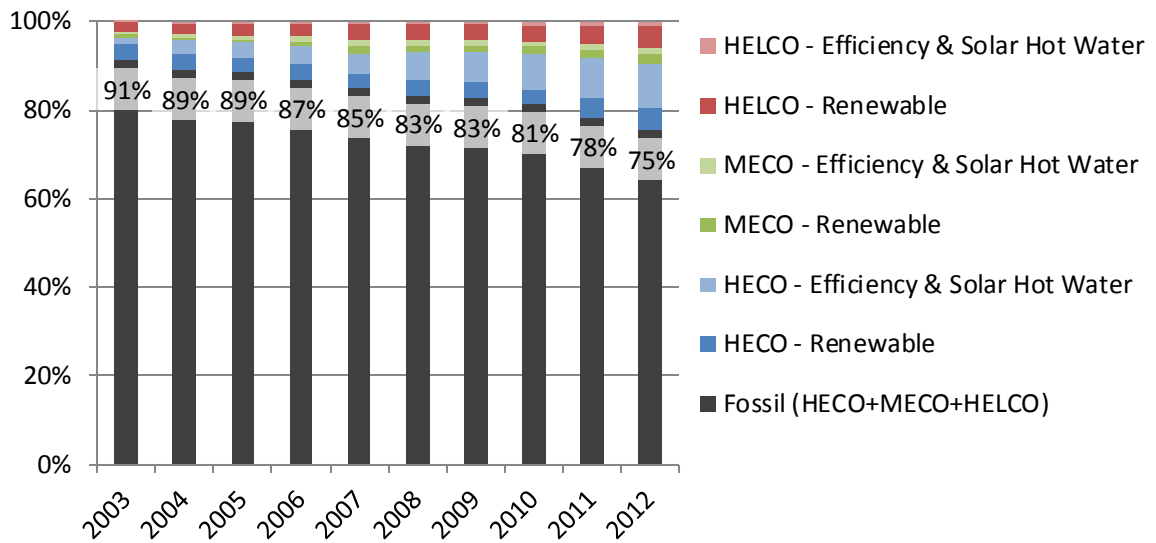
Renewable generation and electricity saved through efficiency measures are shown in Table 7 for the HECO Company territories, and in Table 8 for KIUC. The RPS law allows the Hawaiian Electric Companies to aggregate their companies' renewable portfolios to determine compliance with the RPS. The renewable and efficiency levels reported by the Hawaiian Electric Companies (and declining fossil use) are shown in Figure 15.

**Table 7 - Electricity Saved and Produced by Source, Gigawatt-Hours and Percent
HECO Companies Territories, 2003-2012**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
HECO-Renewable	368	369	333	395	326	359	364	316	431	405
HECO-Efficiency	116	328	343	399	521	684	754	890	1,005	1,216
MECO-Renewable	66	74	75	136	196	170	161	175	189	210
MECO-Efficiency	32	76	100	109	119	109	122	137	155	189
HELCO-Renewable	215	255	268	293	389	399	368	372	436	479
HELCO-Efficiency	24	49	59	67	74	66	74	94	115	148
Fossil (HECO + MECO + HELCO)	8,602	9,366	9,413	9,292	9,207	9,008	8,797	8,716	8,471	8,112
TOTAL Gigawatt- hours ²⁴	9,423	10,517	10,592	10,690	10,832	10,795	10,639	10,699	10,801	10,759
% Renewable	6.9%	6.6%	6.4%	7.7%	8.4%	8.6%	8.4%	8.1%	9.8%	10.2%
% Efficiency	1.8%	4.3%	4.7%	5.4%	6.6%	8.0%	8.9%	10.5%	11.8%	14.4%
% Fossil	91.3%	89.0%	88.9%	87.0%	85.0%	83.4%	82.7%	81.5%	78.4%	75.4%
HECO RPS% (as % of sales)	9%	11%	12%	14%	16%	18%	19%	21%	25%	29%

²⁴Slightly different from GWh used to calculate RPS %, since GWh of efficiency are included in these totals. The RPS % is higher since the denominator is only GWh sales and does not include GWh saved through efficiency.

Figure 15 - Percent Fossil Fuel Use (and Contributions from Renewables and Efficiency) to Meet Electricity Needs, HECO Companies Territories, 2003-2012

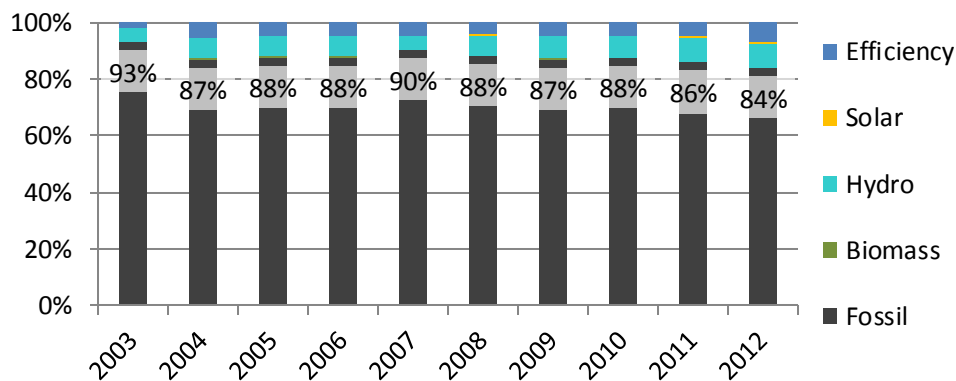


The amounts and percentages of renewable energy and efficiency reported by KIUC are shown in Table 8 and Figure 16.

Table 8 - Electricity Saved and Produced by Source, Electricity Saved and Produced by Source, Gigawatt-Hours and Percent, KIUC, 2003-2012²⁵

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Biomass	1	2	2	2	1	1	2	0	0	0
Hydro	23	34	35	35	25	35	35	34	39	39
Solar	0	0	0	0	0	0	1	1	3	5
Efficiency & Solar Hot Water	7	27	21	22	22	21	23	21	23	31
Fossil	407	411	411	415	440	418	399	400	393	389
TOTAL GWh ²⁴	439	474	470	474	489	475	459	456	458	464
% Renewable	5.4%	7.5%	8.0%	7.8%	5.4%	7.6%	8.2%	7.7%	9.2%	9.5%
% Efficiency	1.7%	5.6%	4.5%	4.5%	4.4%	4.4%	4.9%	4.7%	5.1%	6.7%
% Fossil	92.9%	86.8%	87.6%	87.7%	90.1%	88.0%	86.9%	87.6%	85.7%	83.8%
KIUC RPS% (% of sales)	7%	14%	13%	13%	10%	13%	14%	13%	15%	17%

Figure 16 - Percent Fossil Fuel Use (and Contributions from Renewables and Efficiency) to Meet Electricity Needs, Kauai Island Utility Cooperative



²⁵Renewable and fossil GWh are calculated based on source percentages from "Fuel Mix Disclosure" report filed with the Commission April 12, 2013 (<http://puc.hawaii.gov/wp-content/uploads/2013/07/Fuel-Mix-KIUC-2003-2012.pdf>) applied to total GWh sales from RPS reports. Efficiency numbers are from RPS reports.

Public Benefits Fee (PBF)

The Public Benefits Fee (“PBF”), established by State law,²⁶ is collected by the HECO Companies from ratepayers through a demand-side management surcharge.²⁷ In FY 2013, the funds were used to support energy-efficiency programs and services, subject to the review and approval of the Commission.²⁸ The law authorizes the Commission to contract with a third party administrator to implement and manage energy efficiency programs funded by the PBF. In 2009, following a competitively bid selection process, the Commission selected Science Applications International Corporation (“SAIC”) to serve as the PBF Administrator within the HECO Companies’ service territories. SAIC began administering the Hawaii Energy Efficiency Program (commonly known as “Hawaii Energy”) on July 1, 2009.

Administration of the PBF includes the Bank of Hawaii as the Fiscal Agent; James Flanagan Associates as the Contract Manager; PKF Pacific Hawaii as the independent auditor; and Evergreen Economics (“Evergreen”) as the independent evaluator of Hawaii Energy’s programs.²⁹

The current surcharge amount is 1.5 percent of forecasted utility revenues; the PBF two-year budget for FY 2012 and 2013 was \$71,103,608. The target for FY 2013 was \$37,631,442. For the coming Fiscal Year 2014, the Commission has held the surcharge amount at 1.5 percent, and set the budget at \$34,929,332.

June 30, 2013, marked the completion of Hawaii Energy’s fourth program year. The program year’s activities resulted in a calculated 1.4 billion kWh of lifetime energy savings at a cost of 2.1¢ per kWh. Preliminary results are presented in Table 9, subject to Evergreen’s independent review.

²⁶[HRS § 269-121 through 125.](#)

²⁷Electric utility customers on Kauai pay a demand-side management surcharge that is used in efficiency programs of KIUC.

²⁸New uses in FY 2014, established by Act 211 of 2013, will be: clean energy technology, demand response technology, and energy use reduction and demand-side management infrastructure, programs, and services.

²⁹In September of 2013, SAIC changed its name to Leidos Engineering LLC.

Table 9 - Hawaii Energy FY 2013 Preliminary Results³⁰

Key Performance Metrics	FY 2013 ^a Targets	FY 2013 Results	% of Target FY 2013
Annual Energy Savings Impacts (Net Generation Level)			
First Year Energy Reduction (kWh)	117,558,943	113,198,801	96%
Peak Demand Reduction (kW)	17,771	15,145	85%
Total Resource Benefit (\$)	\$ 125,934,759	\$ 116,789,535	93%
Market Transformation Infrastructure Development			
Community Partnerships	8	21	263%
Financials			
Total Non-Incentives Billed ^b	\$ 10,255,178	\$ 8,680,738	85%
Total Residential and Business Incentives Billed ^c	\$ 35,012,140	\$ 29,297,488	84%
Residential Transformation Program Billed	\$ 1,097,340	\$ 1,059,433	97%
Business Transformation Program Billed	\$ 1,428,224	\$ 1,346,967	94%
Total Program Costs Billed	\$ 37,631,442	\$ 30,903,826	82%
^a Hawaii Energy's "Program Year 2012" is FY 2013. For consistency with the rest of this document, Hawaii Energy's references to "Program Year 2012" in this section have been changed to "FY 2013."			
^b Does not include tax. Does reflect the deduction of performance incentive fees for the award pool.			
^c Includes Transformational Incentives.			

In FY 2013, Hawaii Energy continued to refine their incentive program, focusing on the adoption of sub-metering for condominiums, helping underserved small businesses, establishing benchmarking and metering programs for large buildings, and focusing on the nexus between water and energy efficiency in addition to their many other incentives.

Hawaii Energy continues to operate at about a 70 percent pass-through of PBF collections to ratepayers through incentives. The remaining 30 percent is used for outreach, time and materials (see Table 9, Total Non-Incentives Billed), and supporting services, including administrative services. Additional information may be found on the Hawaii Energy website at www.hawaiienergy.com.

The numbers reported by SAIC are verified after the completion of the plan year by the independent evaluator, Evergreen. During FY13, the Commission awarded SAIC a performance award of \$724,808 for FY 2012. This performance award is based on meeting specified targets in the areas of residential and business energy savings, peak demand savings, total resource benefit, market transformation, and island equity for the program year.

³⁰Hawaii Energy *Annual Report*, revised 8 October 2013.

Island equity is intended to promote equitable participation in PBF programs among the counties, and has as its target that the cost of the projects in each county where the funds were collected represent 80 to 120 percent of the funds collected in those counties. In FY 2013, 74.0 percent of PBF funds came from Oahu, 12.9 percent came from Hawaii, and 13.2 percent came from Maui county ratepayers. Expenditures by county (Table 10), showed a higher than targeted percentage in Hawaii county.³¹

Table 10 - PBF Island Equity Expenditure Targets and Results

County	Target Expenditures	Actual Expenditures	Target %	Actual %
City & County of Honolulu	\$ 19,352,231	\$ 14,053,368	59% - 89%	64%
Hawaii County	\$ 3,366,167	\$ 4,933,056	10% - 15%	23%
Maui County	\$ 3,441,657	\$ 2,827,628	11% - 16%	13%

The uses of the PBF (HRS Section 269-121(b)) were changed by the 2013 Legislature (additions are underlined; deletions are bracketed and stricken):

(b) The public benefits fee shall be used to support ~~[energy-efficiency]~~ clean energy technology, demand response technology, and energy use reduction, and demand-side management infrastructure, programs, and services, subject to the review and approval of the public utilities commission. These moneys shall not be available to meet any current or past general obligations of the State; provided that the State may participate in any ~~[energy-efficiency-or]~~ clean energy technology, demand response technology, or energy use reduction and demand-side management infrastructure, programs, and services on the same basis as any other electric consumer.

For the purpose of this subsection, "clean energy technology" means any commercially available technology that enables the State to meet the renewable portfolio standards, established pursuant to section 269-92, or the energy-efficiency portfolio standards, established pursuant to section 269-96, and approved by the public utilities commission by rule or order.

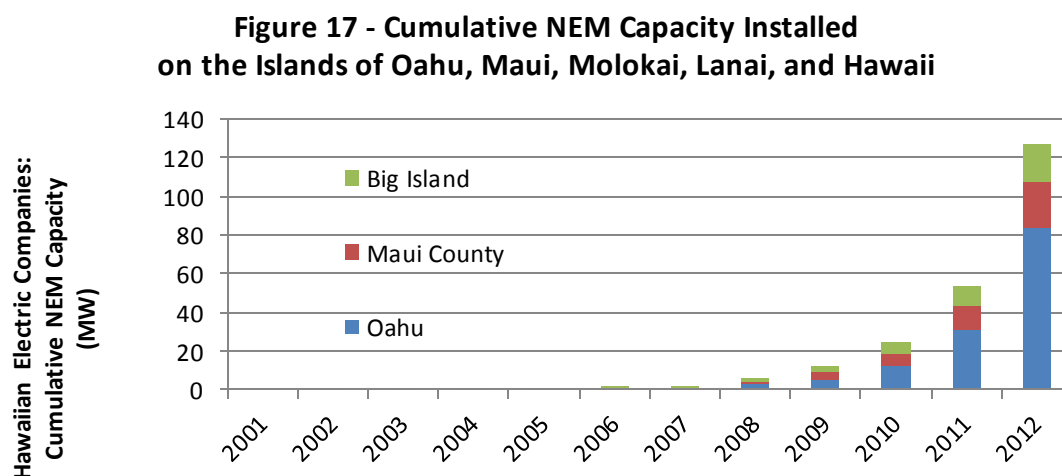
³¹Calculated from Hawaii Energy, *Annual Report Program Year 2012*, dated November 7, 2013, pages 21 and 28.

Net Energy Metering (NEM)

Net energy metering (or “net metering”) is an agreement between the electric utility and a customer, in which the customer connects an on-site renewable energy system to the electrical grid and is credited for any excess power provided by the customer’s energy system to the grid. Each month, the customer is charged for the “net” amount of electricity used. If the customer has provided more electricity than was used that month, the “credits” are carried forward to offset the customer’s usage in the following month. Any excess credits remaining after 12 months are zeroed out.³²

The utilities provide annual reports to the Commission on net metered systems installed over the course of the previous calendar year.³³ The number of systems being installed, and the installed capacity, has been approximately doubling each year over the past several years.

As of December 31, 2012, 133.2 MW (21,227 systems) had been installed on the Oahu (HECO), Maui County (MECO), and Big Island (HELCO) systems, shown in Figure 17.



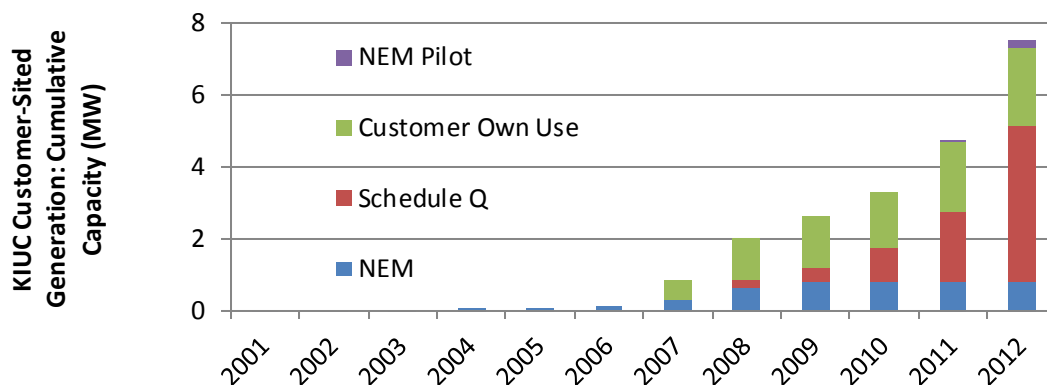
As shown in Figure 18, the KIUC system had 0.8 MW of “net metered” systems by 2009. After reaching the maximum net metered capacity allowed, additional

³²“Net metering” is intended for customers producing electricity for their own use, i.e., customer-generators. Power producers intending to generate more power than they need per year follow Feed-in Tariffs, Rule 14-H, or Schedule Q.

³³<http://puc.hawaii.gov/reports/energy-reports/>. Quarterly updates of installed PV data are also available on the HECO website.

systems were installed under KIUC's Schedule Q tariff and a NEM pilot program. Several large customer-sited projects ("Customer Own Use") were also installed in several locations. As of December 31, 2012, 7.55 MW of customer-sited renewables (1,121 systems), mostly photovoltaics, had been installed on Kauai.

Figure 18 - NEM and Similar Customer-Sited Renewable Generation on the KIUC system



Feed-In Tariff (FIT)

A Feed-In Tariff ("FIT") is an agreement by the electric utility to purchase renewable electricity from a small producer at an agreed-upon rate for 20 years. Different project sizes are assigned to different tiers, and different technologies are eligible for different payment rates. Generation technologies, sizes, and the capacity allowed to connect under the tariff are limited, as shown in Table 11.

As of June 30, 2013, the FIT queue, managed by the Accion Group, listed 12.5 MW of projects in place, 61 MW under active development, 36.8 MW of reserve projects, and was full.³⁴ A review of the FIT program is underway; see Docket No. [2013-0194](#).

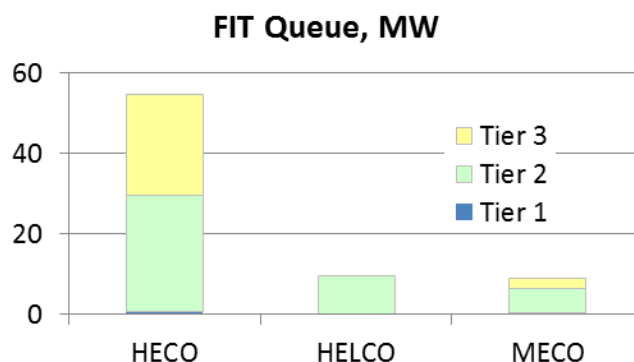


Table 11 - Feed-In Tariff (FIT) Rates, Hawaiian Electric Companies' Service Areas³⁵

Tier	Island	Photovoltaics (PV)		Concentrating Solar Power (CSP)		On-Shore Wind		In-line Hydro	
		rate (¢/kWh)	size limit	rate (¢/kWh)	size limit	rate (¢/kWh)	size limit	rate (¢/kWh)	size limit
1	All Islands	21.8 ^a 27.4 ^b	20 kW	26.9 ^a 33.1 ^b	20 kW	16.1	20 kW	21.3	20 kW
2	Oahu	18.9 ^a 23.8 ^b	500 kW	25.4 ^a 27.5 ^b	500 kW	13.8	100 kW	18.9	100 kW
	Maui & Hawaii	18.9 ^a 23.8 ^b	250 kW	25.4 ^a 27.5 ^b	500 kW	13.8	100 kW	18.9	100 kW
	Lanai & Molokai	18.9 ^a 23.8 ^b	100 kW	25.4 ^a 27.5 ^b	100 kW	13.8	100 kW	18.9	100 kW
3	Oahu	19.7 ^a 23.6 ^b	5 MW	31.5 ^a 33.5 ^b	5 MW	12.0	5 MW	--	--
	Maui & Hawaii	19.7 ^a 23.6 ^b	2.72 MW	31.5 ^a 33.5 ^b	2.72 MW	--	--	--	--
^a With tax credit of 35%. ^b With tax rebate of 24.5%. Rates may also be modified if Federal or State tax laws change.									

³⁴Accion Group, https://www.hecofitio.com/_heco/accionhome.asp

³⁵Docket No. [2008-0273](#).

**Table 12 - Feed-In Tariff (FIT) Capacity in Place,
Under Development, and on Reserve List as of June 30, 2013³⁶**

Utility	FIT Capacity limit (kW)	Tier	In Place (kW)	Under Active Development (kW)	In Place + Active (Total, kW)	Projects on Reserve List (kW)
HECO	54,911	1	428	176	604	0
		2	8,909	20,398	29,307	3,242
		3	0	25,000	25,000	11,249
HELCO	9,519	1	20	20	40	25
		2	1,147	8,332	9,479	5,557
		3	0	0	0	8,710
MECO	9,131	1	117	249	366	90
		2	1,925	4,080	6,005	1,425
		3	0	2,750	2,750	6,480
TOTAL	73,561		12,546	61,005	73,551	36,778

Reliability

As electrical grids become more complex, questions of what constitutes adequate reliability, who determines what is necessary, and who pays for system upgrades, have become more numerous. Commission activities in this area include consideration of reliability standards in relevant dockets and the establishment of a Hawaii Electricity Reliability Administrator.

Reliability Standards Working Group (RSWG)

Realizing the importance of reliability standards to both grid reliability and the ability of distributed generators to interconnect, in September of 2011 the Commission instituted a proceeding to investigate the implementation of reliability standards for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited, Docket No. [2011-0206](#).

This was a follow-on effort to the development of reliability standards under the Feed-In Tariff docket, Docket No. [2008-0273](#), which included a Decision and Order dated September 25, 2009; “Proposed FIT Reliability Standards” (February 8, 2010), and Clarification (February 9, 2010), both from HECO; an Order (August 26, 2010), approving the establishment of a Reliability

³⁶Personal Communication, HECO and Accion Group. October, 2013.

Standards Working Group (“RSWG”), Technical Support Group, and Technical Review Committee; and a June 14, 2011 Order containing instructions for the RSWG. The groups were created under the coordination of an Independent Facilitator.

Opened on September 8, 2011, Docket No. [2011-0206](#) ultimately included twenty-five entities, plus technical consultants and observers, as active participants. The purpose of the RSWG was to recommend fact-based standards, metrics, rules, criteria and processes to "help determine how we can interconnect the maximum amount of renewable generation to the grid while preserving grid reliability" and to define the circumstances under which renewable energy projects of all sizes, technologies and procurement mechanisms could or could not be incorporated into each of the Hawaiian Electric Companies' island grids. The standards, rules, criteria and processes were to be clear, fair, transparent and unambiguous.

Sub-groups included:

- **Gap Analysis** - identify relevant studies and analyses of renewable development potential and integration in the islands, and what is and is not known.
- **IRP Coordination** – track what RSWG work products and information should feed into the parallel Integrated Resource Planning docket.
- **Reliability Definitions and Metrics** - develop a common vocabulary; determine how to measure reliability; consider ancillary services.
- **Reliability Standards Development** - assess and develop reliability standards tailored for Hawaii and large generator interconnection requirements.
- **Minimum Load & Curtailments** – determine how much curtailment is occurring; identify what is causing curtailments and how to reduce them.
- **Photovoltaics & Distributed Generation** - share PV data with the utility to help understand PV generation patterns; develop better interconnection and queuing.
- **Demand-side Options** - identify energy efficiency, demand response and energy storage options to support renewable integration and protect grid reliability.

The sub-groups met frequently, often in all-day meetings, and also had conference calls. Over a 19-month period, numerous work products were developed and approved.

According to the Independent Facilitator's report,

"The RSWG members have developed a shared, sophisticated technical understanding of the relevant issues and developed a number of work products."

". . . not every item the RSWG adopted received uniform or unanimous support. But despite the occasionally controversial nature of the issues studied, it is a mark of the RSWG members' hard work and commitment that they have started from widely divergent positions, worked through a wide range of technical issues, and crafted thoughtful explanations and recommendations that enjoy overwhelming support from the group as a whole."

"All of the RSWG final work products -- and a few documents prepared by other parties to support the RSWG's work -- are submitted to the Commission . . ."

Reliability standards: "The Reliability Standards Drafting subgroup, composed primarily of experienced engineers with utility operational experience, reviewed all of the existing reliability standards adopted by the North American Electric Reliability Corporation and approved by the Federal Energy Regulatory Commission for mandatory usage on mainland North America. The subgroup then drafted ten standards (encompassing the topics in 24 NERC standards) for priority adoption in Hawaii; all of these standards were adopted in full or concept by the RSWG."

System operational flexibility and renewable curtailments: "The fundamental questions ... were, how can a utility that wants to maximize renewable energy use (intermittent and dispatchable) do so while protecting system reliability and minimizing fuel, operations and purchased energy costs? And since high levels of system flexibility are needed to achieve these conflicting goals, what are the ways to increase system flexibility and how much of the burden for assuring flexibility must be borne solely by the utility, or shared with generators and customers?"

New generation interconnection: The RSWG addressed new generation interconnection through the PV-DG subgroup, which developed a suite of recommendations that were unanimously adopted:

- Revisions to Rule 14H with a new, transparent interconnection screening process (based on the sources directed by the Commission) that should allow more projects to interconnect expeditiously without sacrificing safety, reliability and power quality. The rationale for the modified screens is explained in detail in the PV subgroup's final report.
- A proposal to manage all distribution-level interconnection requests with a new queuing proposal that would give the utility and all developers "a window into the interconnection procedures and the status of projects" within the queue for each area of the queue. This could be integrated with the Hawaiian Electric Companies' Feed-in Tariff queue process.

A proposal to enhance the monitoring and controllability of PV production, including sharing PV developers' data on PV production with the utility and plans to expand the HECO Companies' PV monitoring network across the distribution grid.

- A proactive approach for the HECO Companies to plan for higher penetrations of DG, which may require additional tariff modifications.

In FY 2013, 68 documents (2,322 pages) were filed under the docket. Key RSWG documents included: *Final Report of the Independent Facilitator*, 747 pages, filed March 25, 2013; and *Report of the Technical Review Committee*, 97 pages, filed May 29, 2013.

In accordance with Order No. 30371, the Hawaiian Electric Companies have been submitting monthly reliability reports that include information on frequency variations, significant system events, and kWh of curtailment of non-dispatchable renewable resources.

Several of the issues that were raised during the work of the Reliability Standards Working Group are expected to be addressed by the Hawaii Electricity Reliability Administrator.

Hawaii Electricity Reliability Administrator (HERA)

Act 166, SLH 2012, created a new Part, "ELECTRIC RELIABILITY," in HRS Chapter 269. This law authorizes the Commission to perform electric system reliability oversight functions, including the establishment of the Hawaii Electricity Reliability Administrator ("HERA"). The Commission's authority over electric reliability matters also covers non-utility users of the electric grid with respect to reliability and interconnection.³⁷

As described in [Act 166](#), SLH 2012,

"The legislature finds that the capability and accessibility of Hawaii's electrical system must be aligned with both the State's ambitious renewable portfolio standard mandate and the various technologies that generate electricity at both the distribution and transmission levels. Localized energy generation technology has become increasingly attainable for all types of renewable energy developers and the electricity consumer over the past several years. A highly diverse set of generation resources ranging from large wind projects to simple residential photovoltaic systems are now primed to deliver electricity to consumers across the State's isolated island grids. However, in order to ensure that these types of generation resources can be integrated into the island grids, the technical, operational, and regulatory issues associated with running the electrical system must be considered and addressed in order to achieve the full potential of local renewable energy production. The implementation of formal reliability standards to govern all segments of the electric power system and to ensure f a i r a n d

³⁷Codified as [HRS §§ 269-141 through 149](#).

transparent grid access is a critical part of achieving Hawaii's lofty clean energy requirements. In addition, clear regulatory oversight of the State's grids will ensure system reliability, resiliency, and accountability."³⁸

The Hawaii State Legislature granted the Commission discretion in how to best implement the law, and it allows the Commission "to contract for the services of a Hawaii electricity reliability administrator to support the commission in carrying out those critical functions throughout the State."

In FY 2013, the Commission reviewed reliability issues, technologies, regulations, and examples from other jurisdictions in order to determine the scope and types of activities required to implement the law.

Integrated Resource Planning (IRP)

The IRP-2013 is the fifth round³⁹ of Integrated Resource Planning ("IRP") in Hawaii, and it is guided by the revised Framework issued in March, 2011, in Docket No. [2009-0108](#). The goal is:

"to develop an Action Plan that governs how the utility will meet energy objectives and customer energy needs consistent with state energy policies and goals, while providing safe and reliable utility service at reasonable cost, through the development of Resource Plans and Scenarios of possible futures that provide a broader long-term perspective."

On March 1, 2012, the Commission initiated a combined IRP process for the HECO Companies under Docket No. [2012-0036](#). The IRP-2013 process is overseen by the Integrated Resources Planning Independent Entity ("IRPIE") and advised by the Integrated Resources Planning Advisory Group ("IRPAG"),

³⁸[Act 166](#), SLH 2012.

³⁹IRP-1, Docket No. 6617, 1992-1996; IRP-2, Docket Nos. 95-0347, circa 1995-2001; IRP-3, 2003-0253, circa 2003-2007; IRP-4 (draft only), 2007-0084, circa 2007-2008.

comprised of over sixty members representing a diverse array of interests and expertise, including members from each of the affected islands.

Each phase is required to be certified by the IRPIE as to conformance with Framework requirements. The five phases are: 1. Establishment of scenarios to be evaluated; 2. Establishment of planning assumptions; 3. End of the analyses resulting in the resource plans for the scenarios; 4. Development of the Action Plan; and 5. Filing of the Integrated Resource Planning Report.⁴⁰

During FY 2013, the IRPIE and IRPAG participated in monthly day-long in-person meetings, lengthy technical sessions, and phone meetings. Forty-seven documents (7,123 pages) were filed. A website (irpie.com) was established as a repository for notes and documents.

On June 28, 2013, the *2013 Integrated Resource Planning Report*, covering the planning period 2014-2033, was filed by the HECO Companies. The 780-page Report and an additional 1,476 pages of Appendices are under review.⁴¹

Simultaneous statements of position were filed by September 30, 2013, and simultaneous reply statements of position were filed by October 10, 2013, addressing the extent to which the IRP documents and process are compliant with the Framework, and how the Commission should proceed in its review. The Framework anticipated a six-month review period, to the extent feasible and applicable.

⁴⁰Certification reports filed by the IRPIE on January 2, 2013, and July 29, 2013, determined that several aspects of the process, report, and action plans were not compliant with the Framework requirements.

⁴¹On September 9, 2013, the Commission issued Order No. 31443, which included a section on “Inclinations of the Commission,” in which the Commission expressed concerns:

“ . . . the commission intends to determine at this point in the review whether the IRP Report and Action Plans are sufficiently compliant with the Framework and other commission requirements to warrant extensive further examination . . .

“ . . . The commission is concerned, based on its initial review of the Action Plans and associated IRP Report, that several aspects of the Action Plans may lack sufficient depth of supporting analysis and the necessary associated reasoning to support the Hawaiian Electric Companies' conclusions.”

On-Bill Financing (OBF)⁴²

In February of 2013, the Commission found⁴³ that an OBF program for the state can be viable. A 27-member Working Group was established to continue the design of the state's OBF program.

It is hoped that this program will make a real difference to many who have been looking for a way to manage their electricity costs.

The OBF program is designed for renters and ratepayers who would otherwise be unable to afford energy-saving measures. Residential and small business electric utility customers will be able to pay for the equipment or service (for example, a permanently-installed renewable energy system, energy efficiency equipment, or solar water heater) via the utility bill. Payments will be tied to the electric meter, rather than the utility customer. The payment obligation will transfer to successive account holders for the obligated meter.

The OBF program will be administered by three program entities under the guidance of the Commission:

1. The electric utilities⁴⁴ are responsible for tariff application and maintenance; billing of participants; collection of on-bill payments and remittance of these payments to the Finance Program Administrator; disconnection of utility power service in the event of non-payment; communication with participants; and possible collections of overdue amounts.
2. The Program Administrator, Hawaii Energy, is responsible for technical certification of projects and participants; coordination with installation contractors; certification; training; addressing participant inquiries; and customer service.

⁴²[HRS § 269-125](#).

⁴³Docket No. [2011-0186](#), Decision and Order No. 30974, February 1, 2013.

⁴⁴The HECO Companies and KIUC.

3. The Finance Program Administrator is responsible for servicing and origination services; capital pool assembly; oversight of the capital sources used in the OBF program; and management services of the OBF program.⁴⁵

Electric Utility Costs⁴⁶

Statewide electric utility costs, by category, are shown in

. Fuel and purchases power was the largest category, comprising 64 percent of utility expenditures statewide. The next largest category was taxes, followed by depreciation and amortization.

Table 13 - Hawaii's Electric Utility Costs in 2012, by Category, Statewide

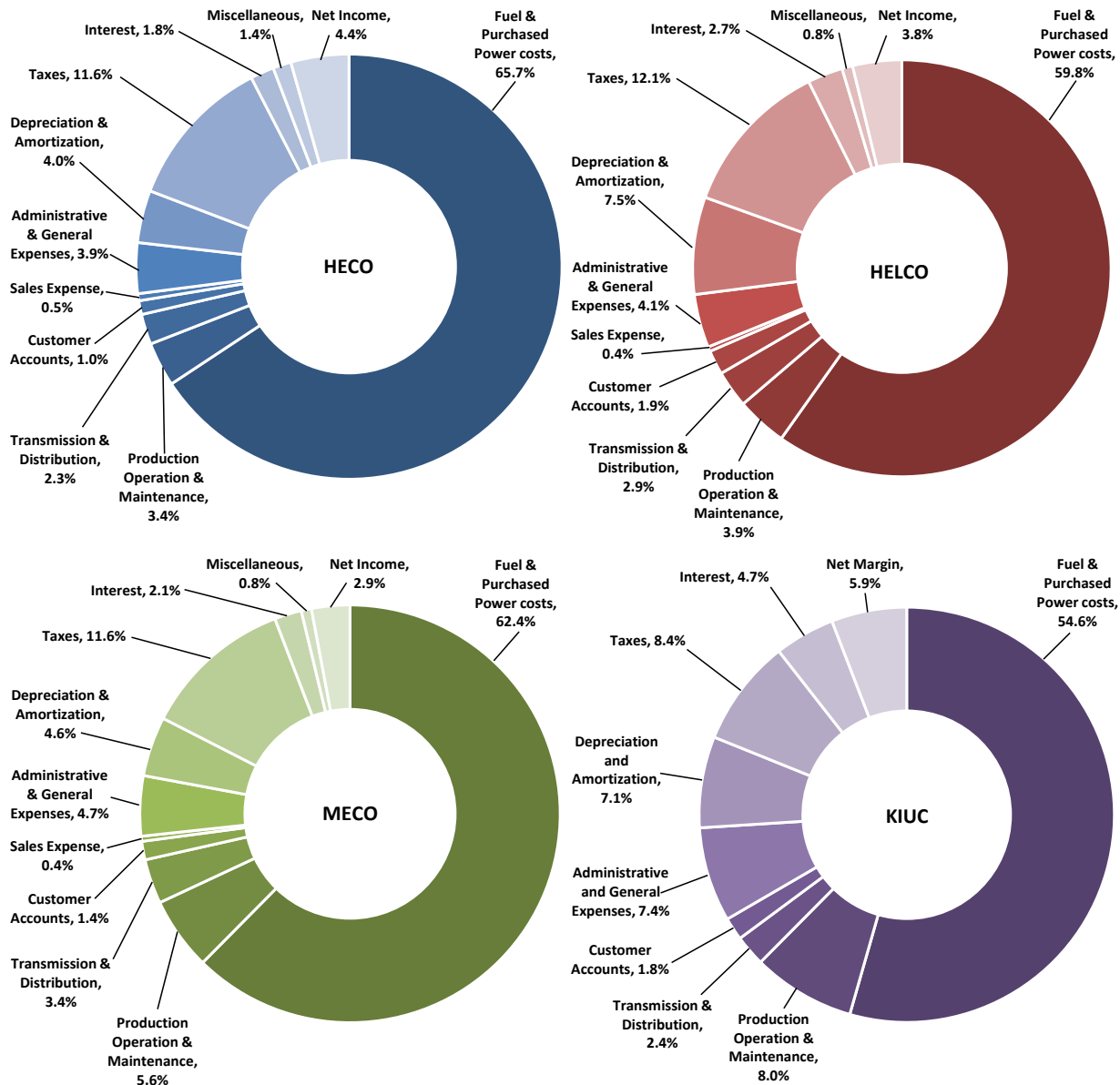
Category	Percent	Category	Percent
Fuel and Purchased Power costs	64%	Taxes	12%
Depreciation and Amortization	5%	Net Income	4%
Administrative and General Expenses	4%	Production Operation & Maintenance	4%
Transmission and Distribution	3%	Interest	2%
Customer Accounts	1%	Miscellaneous	1%

As shown in Figure 19, over half of each utility's revenue in 2012 was used for fuel and purchased power.

⁴⁵The Commission released a Request for Proposals on September 30, 2013, to procure the services of a Finance Program Administrator.

⁴⁶From Annual Financial Reports for the year ending December 31, 2012.

Figure 19 - Electric Utility Revenue, 2012, by Expense Category



Electric Utility Rates of Return

A utility's "authorized rate of return" is the percent return that a utility is authorized to recover in its rates. The authorized rates of return are set by the Commission during rate cases and are designed to attract sufficient investment in Hawaii utilities while keeping the utilities' financing costs relatively low.

Some categories of expenses, such as amounts paid for fuel and purchased power (see previous section), are "pass through" costs and no return is allowed.

Rates of return are not guaranteed. Actual rates of return for Hawaii's investor owned utilities for the past 5 years are shown in Figure 20; authorized rates are shown in Table 14.

Figure 20 - Electric Utility Rate of Return 5 year Comparison⁴⁷

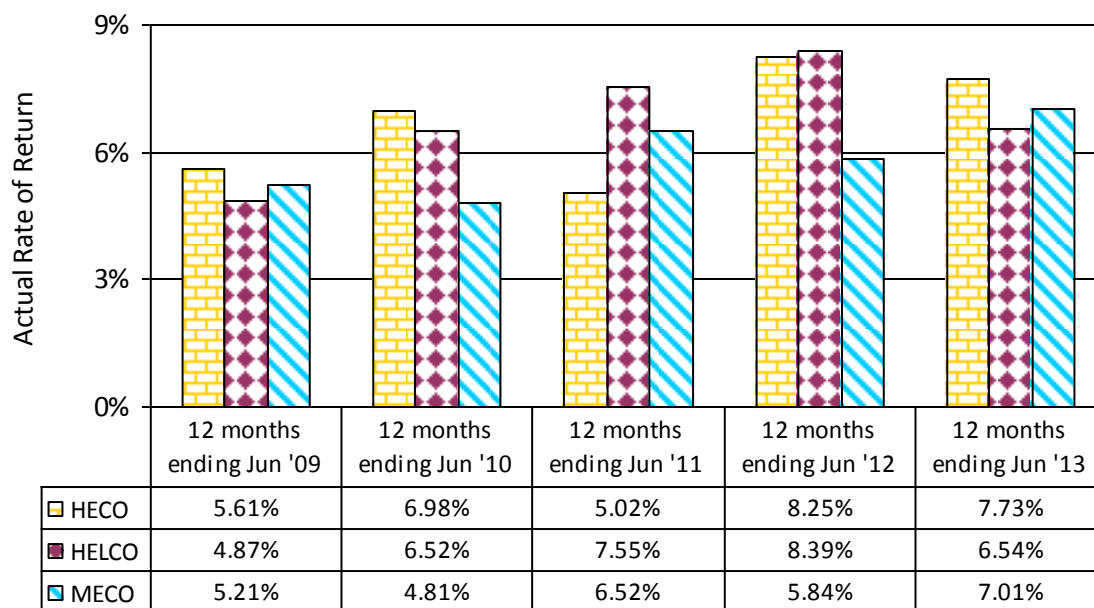


Table 14 - Authorized Rates of Return⁴⁸

Authorized rates of return	Jun '09	Jun '10	Jun '11	Jun '12	Jun '13
HECO	8.62%	8.45%	8.16%	8.11%	8.11%
HELCO	8.33%	8.33%	8.59%	8.31%	8.31%
MECO	8.67%	8.67%	8.43%	7.91%	7.34%

⁴⁷From monthly utility Rate of Return filings with the Commission.

⁴⁸From rate cases, effective from the dates of final orders.

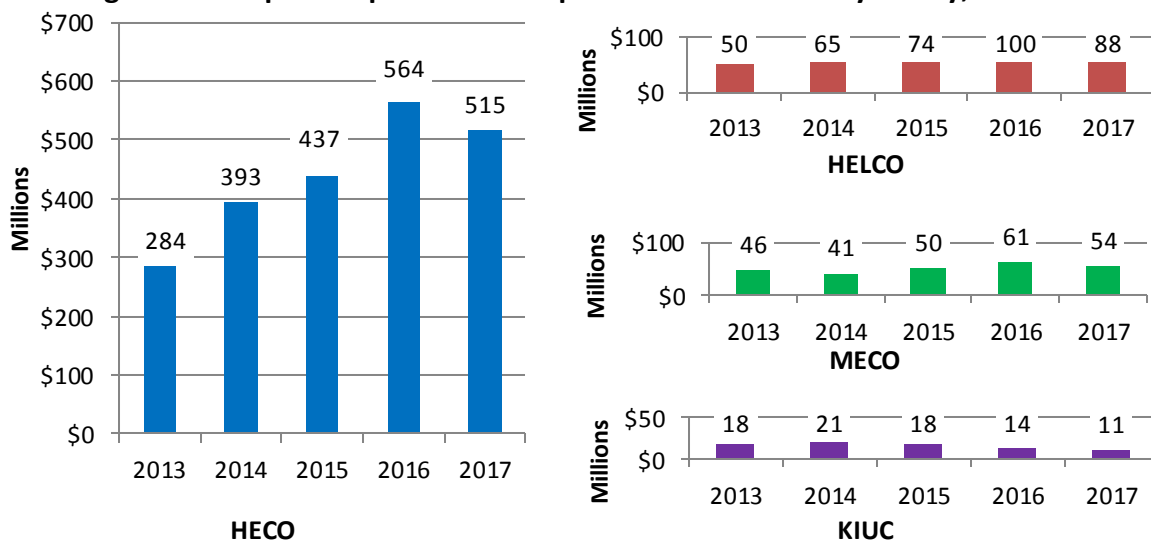
Electric Utility Capital Improvement Expenditure Forecasts⁴⁹

Table 15 shows capital improvement expenditure forecasts for Hawaii's electric utilities, by year, for the period of 2013 through 2017. Over the five-year period, capital improvements of over \$2.9 billion are projected. The projections by utility are shown graphically in Figure 21.

Table 15 - Forecasts of Electric Utility Capital Improvement Expenditures (\$)

	2013	2014	2015	2016	2017
HECO	284,000,000	393,000,000	437,000,000	564,000,000	515,000,000
HELCO	50,000,000	65,000,000	74,000,000	100,000,000	88,000,000
MECO	46,000,000	41,000,000	50,000,000	61,000,000	54,000,000
KIUC	17,873,100	21,203,500	17,630,900	14,449,800	10,814,900
Total	\$ 397,873,100	\$ 520,203,500	\$ 578,630,900	\$ 739,449,800	\$ 667,814,900

Figure 21 - Capital Improvement Expenditure Forecasts by Utility, 2013-2017



⁴⁹Each year, the utilities file reports with the Commission, providing the utilities' projected capital improvement budgets for the ensuing five years, in accordance with paragraph 2.3(g)(1) of General Order No. 7 (HECO, MECO, HELCO) and Order No. 21001 of Docket No. 03-0256 (KIUC).

Quality of service / service reliability

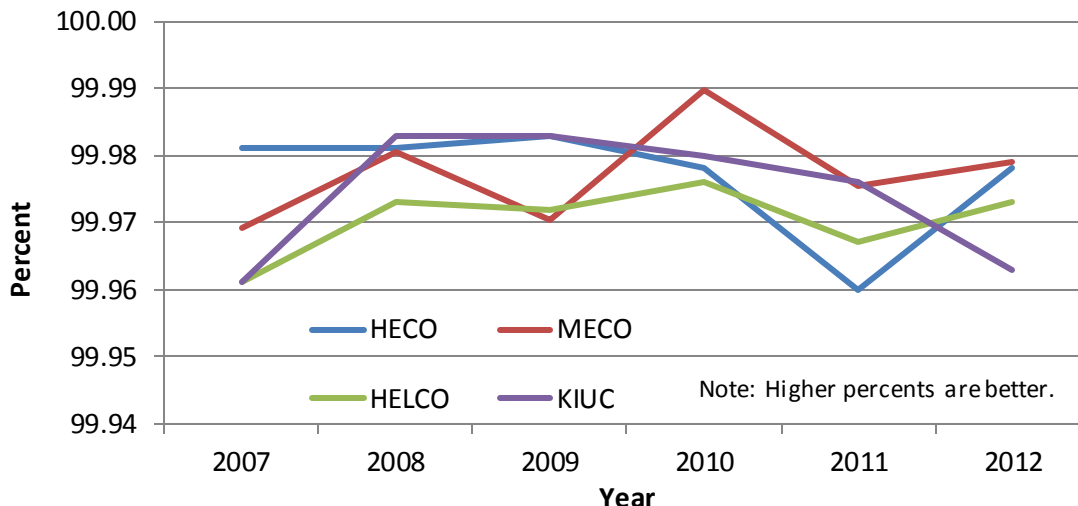
The 2012 service reliability reports submitted to the Commission by HECO, MECO, HELCO, and KIUC cover the 2012 calendar year. The following electric utility service quality information is based on or excerpted directly from those service reliability reports, except where otherwise noted. Different measures are described in an August, 2012 Sandia report, [Hawaii Electric System Reliability](#).

The reliability indices are based on all sustained⁵⁰ system outages. Data normalization is done using the guidelines specified in the "Methodology for Determining Reliability Indices for HECO Utilities," dated December 1990. Normalization is allowed for "abnormal" situations such as hurricanes, tsunamis, earthquakes, floods, catastrophic equipment failures, and single outages that cascade into a loss of load greater than ten percent of the system peak load. These normalizations are made in calculating the reliability indices because good engineering design takes into account safety, reliability, utility industry standards, and economics, but cannot always account for catastrophic events within economic limitations.

Indices used to measure reliability are defined in the box. As shown in Figure 22, the normalized system availabilities of the four utilities over the past six years were between 99.96 and 99.99 percent.

ASAI:	<i>Average Service Availability Index: overall availability of electrical service.</i>
SAIFI:	<i>System Average Interruption Frequency Index: the frequency or number of times a company's customers experience an outage during the year.</i>
CAIDI:	<i>Customer Average Interruption Duration Index: the average length of time an interrupted customer is out of power.</i>
SAIDI:	<i>System Average Interruption Duration Index: the average length of time the company's customers are out of power during the year.</i>

⁵⁰A "sustained" outage is an electrical service interruption of more than one minute. Reliability indices do not include customer maintenance outages.

Figure 22 - Normalized Average Service Availability Index (ASAI)

SAIDI, also an indication of overall system reliability, is the product of SAIFI and CAIDI and incorporates the impact of frequency and duration of outages on the company's total customer base. SAIDI is presented below for each utility; the other indices, and data on the causes of outages, are provided in the Appendix.

HECO Service Quality

HECO's 2012 SAIDI for all events was HECO's second best in the past six years. No outage events were normalized in 2012. HECO's 2012 SAIDI of 113.67 minutes, a 46 percent improvement from 2011, represents a return to a typical normalized SAIDI after the storm of March 4, 2011. The reliability results for 2012 and five prior years are shown in Table 16 (all events), Table 17 (normalized), and Figure 23. Additional data on HECO's indices, ASAI percent, and causes of outages are available in the Appendix; see page 100.

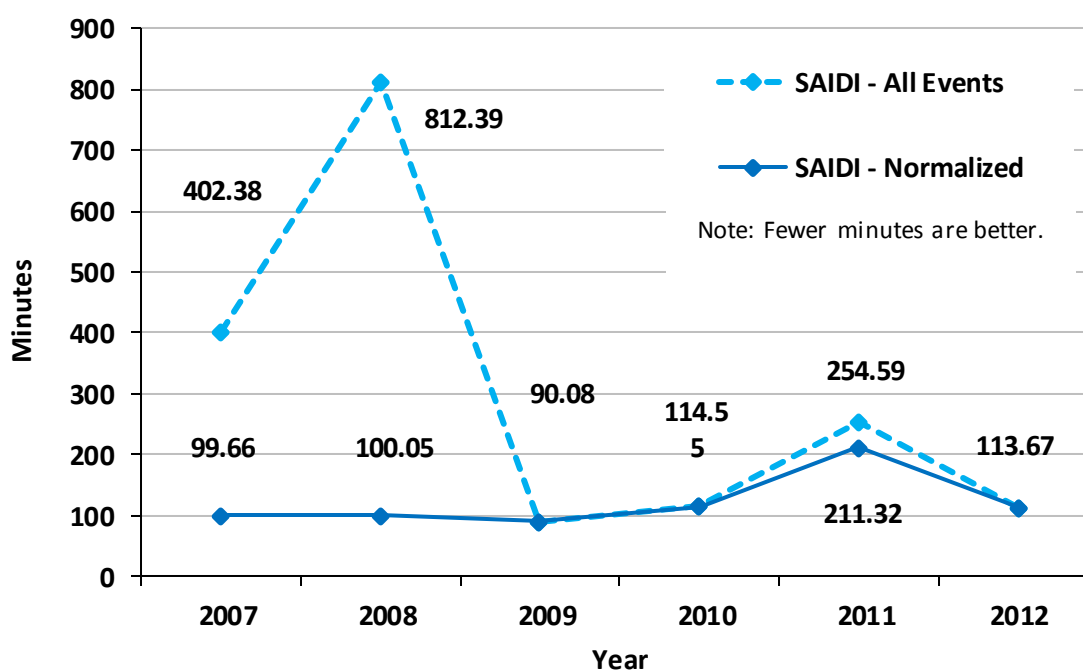
Table 16 - HECO Annual Service Reliability Indices – All Events

	2007	2008	2009	2010	2011	2012
Number of Customers	293,893	294,371	294,802	295,637	296,679	297,598
Customer Interruptions	639,886	729,784	333,908	361,334	502,252	407,197
Customer-Hours Interrupted	1,970,925	3,985,756	442,546	564,424	1,257,338	563,807
SAIDI (Minutes)	402.38	812.39	90.08	114.55	254.59	113.67
CAIDI (Minutes)	184.81	327.69	79.52	93.72	150.20	83.08
SAIFI (Occurrences)	2.177	2.479	1.133	1.222	1.693	1.368
ASAI (Percent)	99.923	99.846	99.983	99.978	99.952	99.978

Table 17 - HECO Annual Service Reliability Indices – Normalized⁵¹

	2007	2008	2009	2010	2011	2012
Number of Customers	293,893	294,371	294,802	295,637	296,679	297,598
Customer Interruptions	367,837	382,124	333,908	361,334	408,326	407,197
Customer-Hours Interrupted	488,144	490,842	442,546	564,424	1,044,904	563,807
SAIDI (Minutes)	99.66	100.05	90.08	114.55	211.32	113.67
CAIDI (Minutes)	79.62	77.07	79.52	93.72	153.54	83.08
SAIFI (Occurrences)	1.252	1.298	1.133	1.222	1.376	1.368
ASAI (Percent)	99.981	99.981	99.983	99.978	99.960	99.978

Figure 23 - HECO System Average Interruption Duration Index (SAIDI)



⁵¹Data on normalized events and outage causes are provided in the Appendix.

HELCO Service Quality

HELCO's 2012 SAIDI for all events was HELCO's best in the past six years. No outage events were normalized in 2012. The 2012 SAIDI is 140.1 minutes, a 19 percent improvement over 2011 (normalized). Reliability results for 2012 and five prior years are shown in Table 18 (all events), Table 19 (normalized), and Figure 24. Additional data on HELCO's CAIDI and SAIFI indices, ASAI percent, and causes of outages are available in the Appendix; see page 111.

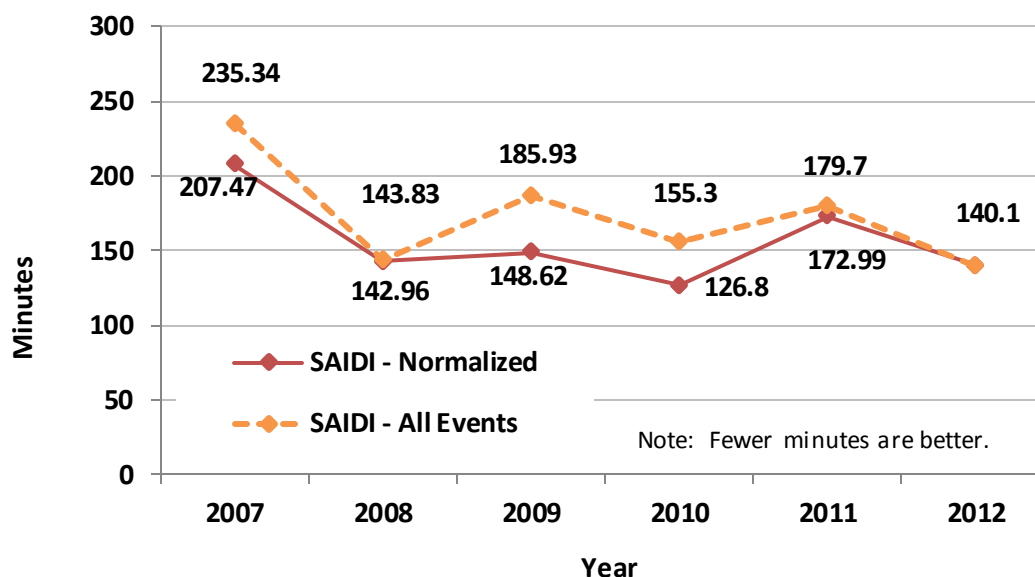
Table 18 - HELCO Annual Service Reliability Indices – All Events

	2007	2008	2009	2010	2011	2012
Number of Customers	77,933	79,386	79,679	80,171	80,807	81,537
Customer Interruptions	257,924	194,807	298,334	302,402	290,616	228,549
Customer-Hours Interrupted	305,681	190,314	246,916	207,607	242,120	190,395
SAIDI (Minutes)	235.34	143.83	185.93	155.3	179.7	140.1
CAIDI (Minutes)	71.11	58.62	49.66	41.19	49.99	49.98
SAIFI (Occurrences)	3.31	2.454	3.744	3.772	3.596	2.803
ASAI (Percent)	99.955	99.973	99.965	99.97	99.966	99.973

Table 19 - HELCO Annual Service Reliability Indices – Normalized⁵²

	2007	2008	2009	2010	2011	2012
Number of Customers	77,933	79,386	79,679	80,171	80,807	81,537
Customer Interruptions	208,000	179,862	246,437	176,622	236,688	228,549
Customer-Hours Interrupted	269,475	189,156	197,371	169,522	232,981	190,395
SAIDI (Minutes)	207.47	142.96	148.62	126.8	172.99	140.1
CAIDI (Minutes)	77.73	63.1	48.05	57.59	59.06	49.98
SAIFI (Occurrences)	2.669	2.266	3.093	2.203	2.929	2.803
ASAI (Percent)	99.961	99.973	99.972	99.976	99.967	99.973

⁵²Data on normalized events and outage causes are provided in the Appendix.

Figure 24 - HELCO System Average Interruption Duration Index (SAIDI)

MECO Service Quality

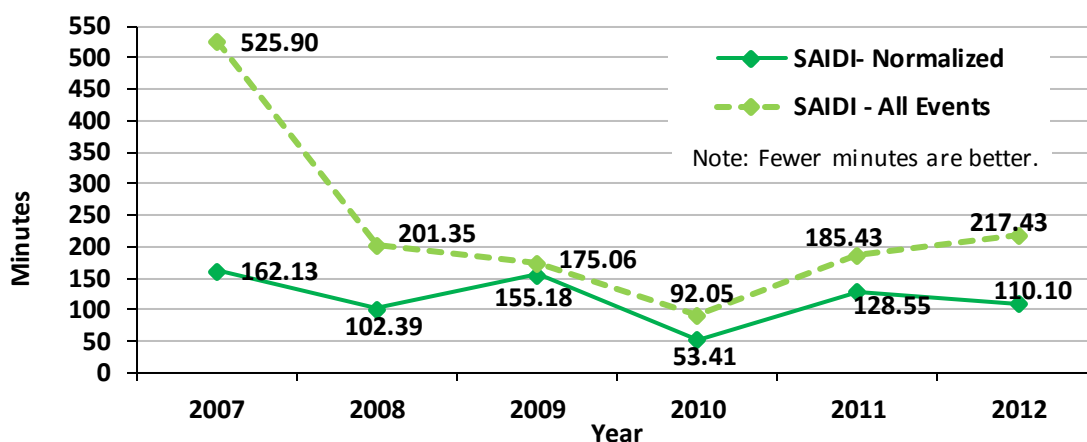
MECO's 2012 SAIDI for all events was MECO's second-worst over the past six years. The normalized 2012 SAIDI of 110.10 minutes is a 14.35 percent improvement compared to 2011. Figure 25 shows the SAIDI for 2012 and the previous five years. Additional data on MECO's CAIDI and SAIFI indices, ASAI percent, and causes of outages are available in the Appendix; see page 115.

Table 20 - MECO Annual Service Reliability Indices (All Islands) – All Events

	2007	2008	2009	2010	2011	2012
Number of Customers	65,728	66,810	67,126	67,405	68,010	68,575
Customer Interruptions	240,028	163,120	124,864	131,294	170,379	195,618
Customer-Hours Interrupted	576,110	224,209	195,853	103,416	210,186	248,501
SAIDI (Minutes)	525.90	201.35	175.06	92.05	185.43	217.43
CAIDI (Minutes)	144.01	82.47	94.11	47.26	74.02	76.22
SAIFI (Occurrences)	3.652	2.442	1.860	1.948	2.505	2.853
ASAI (Percent)	99.8997	99.9617	99.9667	99.9824	99.9646	99.9586

Table 21 - MECO Annual Service Reliability Indices (All Islands) – Normalized⁵³

	2007	2008	2009	2010	2011	2012
Number of Customers	65,728	66,810	67,126	67,405	68,010	68,575
Customer Interruptions	170,445	75,764	108,368	67,481	101,268	81,428
Customer-Hours Interrupted	177,608	114,001	173,602	60,007	145,711	125,836
SAIDI (Minutes)	162.13	102.39	155.18	53.41	128.55	110.10
CAIDI (Minutes)	62.53	90.29	96.12	53.35	86.33	92.72
SAIFI (Occurrences)	2.593	1.134	1.615	1.001	1.489	1.187
ASAI (Percent)	99.9692	99.9805	99.9705	99.9898	99.9755	99.9791

Figure 25 - MECO System Average Interruption Duration Index (SAIDI)

KIUC Service Quality

KIUC's 2012 SAIDI was KIUC's worst for the past five years, although it was better than in 2007. The reliability indices reported by KIUC, and shown in Table 22 and in Figure 26, are not normalized. The major event affecting the 2012 CAIDI and SAIDI occurred on March 28, 2012. An insulator bushing failed at the Port Allen Generating Station, causing loss of generation and eventual load shed of all distribution breakers. The outage affected all customers and ranged in duration from 46 minutes to four hours and 25 minutes.

KIUC currently has 4.5 MW of battery energy storage on its grid. These systems help with "smoothing" power from the island's six MW solar array at Port Allen and nearly 2,000 customer-sited PV systems. According to KIUC, these battery systems have been able to instantly respond to a loss of frequency or power generation on the grid; the battery systems responded to several events that would

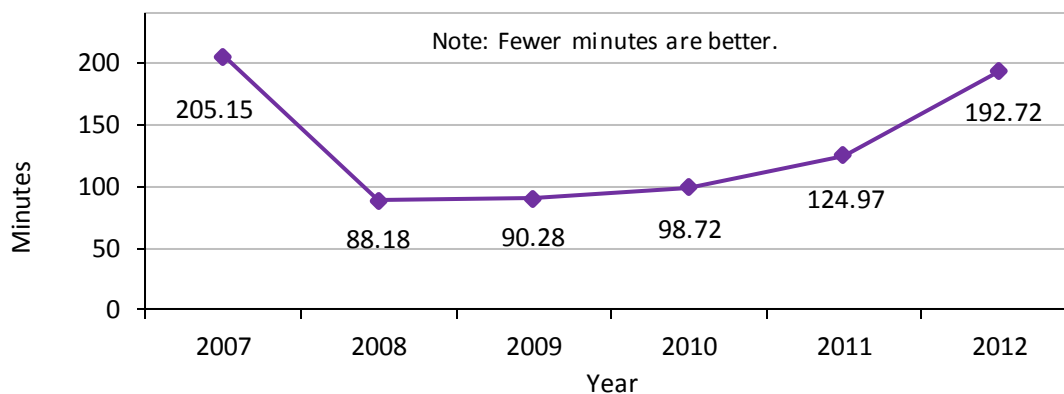
⁵³Data on normalized events and outage causes are provided in the Appendix.

have previously resulted in significant outages. The batteries “bridged the gap,” instantly pushing enough power onto the grid to prevent an outage until more conventional generators could be ramped up to cover the loss. KIUC is planning to add another eight MW of battery energy storage to its grid by 2015.⁵⁴ Additional data on KIUC’s indices may be found on page 121.

Table 22 - KIUC Annual Service Reliability Indices – All Events

	2007	2008	2009	2010	2011	2012
System Peak (MW)	77.75	74.27	75.41	76.54	72.05	73.06
Number of Customers	35,207	35,713	36,004	36,113	36,222	36,473
SAIDI (Minutes)	205.15	88.18	90.28	98.72	124.97	192.72
CAIDI (Minutes)	24.35	19.84	14.63	20.74	21.53	44.20
SAIFI (Occurrences)	8.43	4.45	6.17	4.76	5.80	4.36
ASA (Percent)	99.961	99.983	99.983	99.980	99.976	99.963

Figure 26 - KIUC System Average Interruption Duration Index (SAIDI)



⁵⁴ Letter to the Public Utilities Commission from KIUC, October 23, 2013.

Utility Gas

“Utility gas” service is when gas pipelines deliver fuel directly to a property, using a system of pipes that cross property lines; this service is regulated by the Commission. Sales of gases in cylinders (for example, propane, medical, and industrial gases) are not regulated by the Commission.

Gas utility and operations

The Commission regulates Hawaii's only utility gas provider, The Gas Company (doing business as HAWAII'IGAS⁵⁵), that serves over 35,000 customers (shown in Table 23). Although the number of customers declined between 2008 and 2012, gas sales over the same period increased, from 33.1 million therms in 2008 to 33.3 million therms in 2012 (Table 56 - Utility Gas Customers, Therms, and Revenues, by Island, 2012, page 124).⁵⁶

Table 23 - Utility Gas Customers, 2008-2012

Gas District	2008	2009	2010	2011	2012
Honolulu	32,358	32,179	32,109	32,019	31,876
Hilo	1,796	1,784	1,781	1,767	1,779
Maui	479	512	516	518	516
Molokai	82	78	78	75	89
Lanai	11	13	17	19	21
Kauai	737	835	837	858	888
HAWAII'IGAS Totals	35,463	35,401	35,338	35,256	35,169

Sources used to meet Hawaii's gas needs

Both synthetic natural gas (“SNG,” produced from by-products of Hawaii refinery operations) and propane are delivered to Hawaii's utility gas customers. The synthetic natural gas is delivered from the HAWAII'IGAS production facility in Campbell Industrial Park to customers via a pipeline network on the southern side of the island of Oahu. Propane (either purchased from local refinery operations or imported from sources outside the state, and stored in facilities throughout the islands) is used to supply utility gas service to other locations in the state via

⁵⁵Name style from the “Hawaii'IGAS” brochure, <http://www.hawaiiigas.com/media/20550/hawaiiigas-company-profile.pdf>

⁵⁶From Annual Financial Reports.

neighborhood networks of pipes. SNG comprises almost 79 percent, and propane, about 21 percent, of the HAWAIIIGAS utility sales.

On January 8, 2013, Tesoro Hawaii Corporation announced its intent to cease refinery operations by April 30, 2013 and to terminate its supply of naphtha to HAWAIIIGAS as of May 31, 2013. This was a major event for HAWAIIIGAS in FY13. From its Application in Docket No. 2013-0075,

“Since 1974, HAWAIIIGAS has by design relied on naphtha supplied by the neighboring Tesoro Refinery as its sole source of feedstock to manufacture SNG for the O’ahu Utility Gas District . . . The pending closure of the Tesoro Refinery is expected to occur by April 30, 2013. Closure of the Tesoro refinery will disrupt the supply of naphtha used to manufacture SNG and eliminate one of two local sources of LPG . . .”⁵⁷

On April 30, 2013, HAWAIIIGAS filed an application for approval of a Naphtha Feedstock Continuation Agreement with Tesoro, Docket No. [2013-0101](#). On May 29, 2013, the Commission approved the Agreement and the inclusion of fuel costs in the Fuel Adjustment Clause.⁵⁸ Subsequent activities, beyond the FY 2013 period covered by this report, include the sale of the refinery to a purchaser who has expressed an interest in continuing to operate the refinery.

Renewable natural gas is produced at a facility located next to the synthetic natural gas plant on Oahu. This facility uses renewable, non-food-grade oils and fats to produce methane, propane, and hydrogen.⁵⁹ In 2012, 2.4 percent of total feedstock used to produce synthetic natural gas in Hawaii was from non-petroleum sources.⁶⁰

⁵⁷Docket No. [2013-0075](#), Application, March 28, 2013.

⁵⁸On September 25, 2013, the sale of the Tesoro Hawaii refinery in Kapolei to Hawaii Pacific Energy, LLC, a subsidiary of Par Petroleum of Texas, was completed. The Continuation Agreement with Tesoro terminated effective October 1, 2013.

⁵⁹<http://www.hawaiiigas.com/media/20550/hawaiiigas-company-profile.pdf>

⁶⁰Report from HAWAIIIGAS to the Public Utilities Commission, “Gas Utility Companies Renewable Energy Reporting requirements in compliance with Hawaii Revised Statutes (HRS) § 269-45,” March 20, 2013.

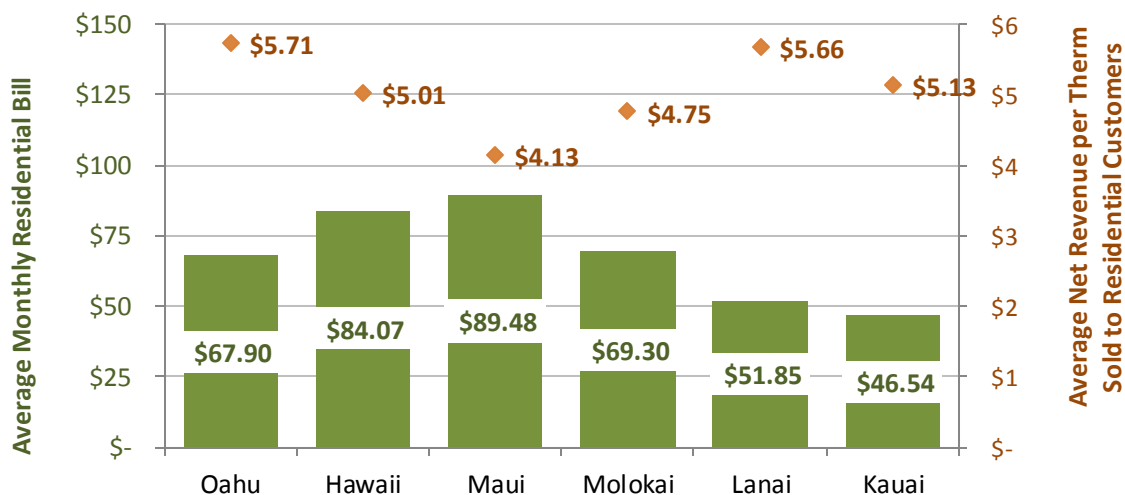
Importing natural gas has also been a topic of interest to several parties. On August 9, 2012, HAWAII GAS filed an application to the Federal Energy Regulatory Commission requesting authorization to operate facilities to receive and vaporize domestic liquefied natural gas. In January, 2013, the Federal Energy Regulatory Commission (“FERC”) ruled that the proposed project did not constitute an LNG terminal as envisioned under the Natural Gas Act section 3 and that the FERC would not have jurisdiction over the proposal.⁶¹ The potential use of natural gas for the production of electricity is also mentioned elsewhere in this report as a potential resource for generation (page 6) and as an alternative evaluated in response to federal environmental issues (page 96).

Gas use, rates, and average residential bills

As shown in Table 24, the bulk (82 percent) of HAWAII GAS’ revenues are from non-residential customers. This includes commercial and industrial customers; multi-unit housing; large firm gas service; interruptible service; and stand-by (emergency power generator) service.

Statewide, residential utility gas service provides 18 percent of statewide utility gas revenues. As shown in Figure 27, average residential utility gas bills range from \$46.54 on Kauai to \$89.48 on Maui. Additional information is provided in the Appendix (page 124).

Figure 27 - Average Monthly Residential Utility Gas Bills and Cost Per Therm, 2012



⁶¹<http://www.ferc.gov/whats-new/comm-meet/2013/ca01-17-13.asp>

Table 24 - Annual Customers, Sales, and Revenues, Utility Gas in Hawaii, 2012⁶²

Island	Oahu	Hawaii	Maui	Molokai	Lanai	Kauai	Statewide
Residential Customers (12 month average)	28,622	1,470	427	89	21	872	31,501
Therms Sold to Residential Customers	4,080,929	296,286	111,024	15,598	2,308	94,928	4,601,073
Net Revenue (\$) Received from Residential Customers	23,321,304	1,483,019	458,482	74,013	13,065	486,948	25,836,831
Average Annual Therms Sold Per Residential Customer	143	202	260	175	110	109	146
Average Net Revenue (\$) per Therm Sold to Residential Customers	5.71	5.01	4.13	4.75	5.66	5.13	5.62
Average Net Revenue (\$) Per Customer (annual)	815	1,009	1,074	832	622	558	820
Average Monthly Residential Bill (\$)	67.90	84.07	89.48	69.30	51.85	46.54	68.35
Non-residential Customers	3,254	309	89	-	-	16	3,668
Therms Sold to Non-Residential Customers	25,814,160	2,067,192	776,565	-	-	60,676	28,718,593
Net Revenue (\$) from Non-Residential Sources	110,937,158	5,916,688	2,168,776	1,608	126	184,071	119,208,427
Total Customers	31,876	1,779	516	89	21	888	35,169
Total Therms Sold	29,895,089	2,363,478	887,589	15,598	2,308	155,604	33,319,666
Total Revenue (\$) Received	134,258,462	7,399,707	2,627,258	75,621	13,191	671,019	145,045,258

⁶²From Annual Financial Reports.

Gas Utility Transmittals and Dockets

There were two non-docketed tariff transmittals in FY 2013.⁶³ Under Transmittal No. 2012-01, filed on October 31, 2012, HAWAII GAS submitted a request for approval to change and to republish its tariff. The changes, approved on November 30, 2012 by Decision and Order No. 30864, were effective December 1, 2012. Transmittal No. 2013-01, submitted in February of 2013, requested approval to amend the Oahu Gas District tariff. In March of 2013, the Commission approved the proposal to remove the sunset provision from the Schedule 92 interruptible gas service rate, subject to the proviso that the Commission retains the right to cap the enrollment of future Schedule 92 customers, consistent with the public interest. There were also several gas-related dockets, as shown in Table 25.

Table 25 - Selected Gas Utility Dockets

Filing Date	Docket	Docket Title	Topic	Comments	Closed Date
04/05/12	2012-0073	Proposed financing and security arrangements and related matters.	Financing	Approved, subject to conditions. Decision and Order No. 30679.	10/18/12
12/27/12	2012-0389	Purchase & installation of a backup diesel generator	Other	Dismissed.	5/21/13
03/13/13	2013-0061	After-the-fact request for pipeline safety inspection expenses	System	Dismissed.	4/30/13
03/28/13	2013-0075	Liquefied Natural Gas ("LNG") transfer price mechanism	Other	Withdrawn. Feedstock available through mid-summer.	5/10/13
03/28/13	2013-0076	After-the-fact request to extend gas mains to serve the University of Hawaii-West Oahu	System	Dismissed.	4/30/13
04/30/13	2013-0101	Naphtha feedstock continuation agreement w/ Tesoro	Fuel	Approved, subject to reporting requirements.	6/4/13

⁶³Non-docketed decisions for calendar year 2012: http://dms.puc.hawaii.gov/dms/DocketSearch?V_DocketNumber=2012-0000&QuickLink=1. Non-docketed decisions for calendar year 2013: http://dms.puc.hawaii.gov/dms/DocketSearch?V_DocketNumber=2013-0000&QuickLink=1. Click on "Documents" tab.

Dockets opened soon after the close of the fiscal year:

08/01/13	2013-0179	New petroleum feedstock agreement with Tesoro Hawaii	Fuel	Interim Decision and Order No. 31452 9/18/13.	open
08/12/13	2013-0184	SNG system backup enhancement project	System	Opened.	open

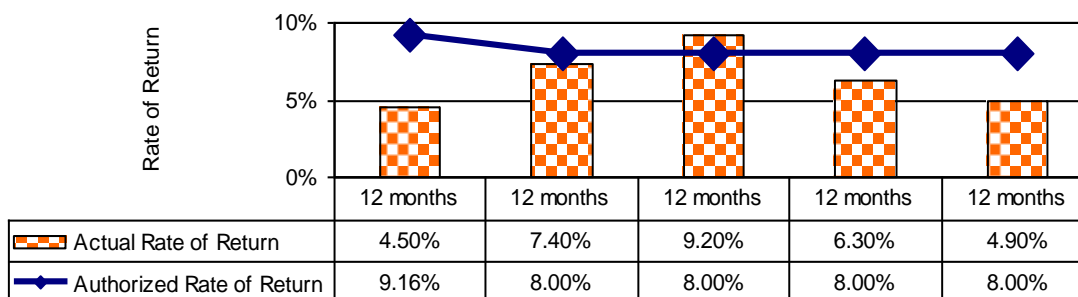
Integrated Resources Planning (IRP)

The revised Framework for Integrated Resource Planning (IRP) in Hawaii, issued in March of 2011, under Docket No. [2009-0108](#), covers gas as well as electric utility planning. The IRP cycle for HAWAII'IGAS will follow the HECO Companies' docket.⁶⁴

Gas utility costs

The authorized and actual rates of return for the Oahu Gas District of HAWAII'IGAS are shown in Figure 28, for each 12-month period ending on the date shown.

Figure 28 - Gas Utility Rate of Return, 5 year Comparison, Oahu Gas District



Gas Utility Capital Improvement Expenditure Forecasts

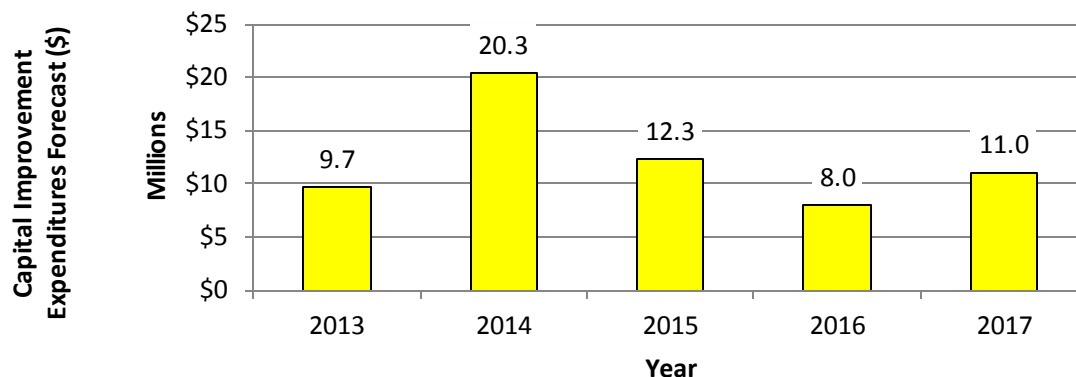
HAWAII'IGAS files its annual five-year capital budget report pursuant to General Order No. 9, rule 2.3 f.1. The capital expenditure forecast for HAWAII'IGAS is approximately \$10 million in 2013, \$20 million in 2014, \$12.3 million in 2015, \$8 million in 2016, and \$11 million in 2017, for a total of \$61 million over the five-year period. Table 26 and Figure 29 show the five-year capital expenditure budget forecast for HAWAII'IGAS.

Table 26 - Gas Utility Expenditure Forecast

	2013	2014	2015	2016	2017
HAWAII'IGAS	\$9,668,000	\$20,349,000	\$12,298,000	\$7,954,000	\$11,033,000

⁶⁴Docket No. [2012-0036](#), Order No. 30233, March 2012: "This docket is to be followed by commencement of the IRP cycles for the Kauai Island Utility Cooperative and The Gas Company in the near future."

Figure 29 - Five-year Capital Expenditure Budget Forecast for Hawaii Gas



Quality of service / service reliability

Monthly Line Breakage/Service Interruption Reports are filed by HAWAII GAS each month. Between July 1, 2012, and June 30, 2013, there were 111 line breaks, all damaged by third parties, causing 299 customer-hours of interruption.

Table 27 - Gas Line Breaks and Service Interruptions

Month, Year	Number of breaks	Customer-hours of interruption	# Damaged By Third Party	Other
July, 2012	9	9.50	9	0
August, 2012	13	41.50	13	0
September, 2012	4	7.00	4	0
October, 2012	11	13.50	11	0
November, 2012	8	14.50	8	0
December, 2012	10	13.00	10	0
January, 2013	10	15.75	10	0
February, 2013	7	5.50	7	0
March, 2013	13	12.00	13	0
April, 2013	5	0.00	5	0
May, 2013	12	143.25	12	0
June, 2013	9	23.50	9	0
FY 2013	111	299.00	111	0

Meter Performance Control Program Annual Reports are filed by HAWAII GAS each calendar year. The objective of the program is to (1) provide accurate measurement of gas delivery to consumers and (2) extend the service life of meters. Separate reports are compiled for meters with flow rates of between zero and 250 cubic feet per hour (“CFH”) and for those between 251 and 1500 CFH. In 2012, 94 percent of the meters tested had accurate flow rates. If a group of meters is identified as not meeting performance standards, all members of that group are scheduled for removal over the next calendar year, regardless of its years in service.

Table 28 - Meter Performance Control Program

	Meters in Service	Removed	Tested	OK	% OK
0-250 CFH meters	22,835	2,486	2,420	2,276	94%
251-1500 CFH meters	2,795	298	286	260	91%
Total meters tested:			2,706	2,536	94%

Private Water and Sewage Utilities

The Commission regulates 38 privately owned water and sewage treatment utilities that serve suburban, rural, and resort areas throughout the State. The majority of these utilities are located on the neighbor islands. In 2013, the PUC began drafting administrative rules to provide standards for uniform practices by private water utilities, and expects to begin hearings on these rules in 2014. In addition to its traditional regulatory duties, the PUC has been helping private water utilities address growing energy costs through energy efficiency incentive programs offered through Hawaii Energy. Examples of dockets in FY 2013 are shown in Table 29.

Table 29 - Selected Water and Wastewater Dockets

Docket #	Applicant / Topic	Action / Status
<u>2008-0180</u>	North Shore Water Company, LLC	On December 27, 2012, North Shore Water Company submitted an action plan to address the infrastructure conditions required by Decision and Order No. 30472.
<u>2011-0148</u>	Rates and tariffs of Pukalani Wastewater District	On December 20, 2012, a Stipulation in Lieu of Evidentiary Hearing was filed by Hawaii Water Service Company, Inc. and the Division of Consumer Advocacy.
<u>2011-0331</u>	Waikoloa Resort Utilities, Inc., dba West Hawaii Utility Company	On August 28, 2012, an application was filed for a rate increase and tariff revisions. Review is ongoing with numerous information requests and other filings.
<u>2012-0147</u>	Waikoloa Sanitary Sewer Co., Inc. dba West Hawaii Sewer Company	On August 29, 2012, an application was filed for a general rate increase and tariff revisions. Review is ongoing with numerous information requests and other filings.
<u>2012-0148</u>	Waikoloa Water Co., Inc. dba West Hawaii Water Company	On August 28, 2012, an application was filed for a general rate increase and tariff revisions. Review is ongoing with numerous information requests and other filings.
<u>2012-0157</u>	Manele Water Resources, LLC	By Decision and Order No. 30998 dated February 8, 2013, the indirect sale and transfer of Manele Water Resources, Lanai Water Company, and Lanai Transportation Company were approved, subject to certain conditions. The docket is closed.
<u>2012-0181</u>	Puhi Sewer & Water Co., Inc.	On July 27, 2012, an application was filed to amend the Certificate of Public Convenience and Necessity (CPCN) to provide non-potable water service on the island of Kauai; and for approval of rules, regulations, and rates.
<u>2013-0001</u>	Puhi Sewer & Water Co., Inc.	On January 4, 2013, an application was filed for approval of expansion of service territory.
<u>2013-0134</u>	Kalaeloa Water Company, LLC	On May 23, 2013, an application was filed for a CPCN to provide potable water and wastewater services in Kalaeloa, Oahu; and for approval of rules, regulations, and rates.
<u>2013-0131</u>	Puhi Sewer & Water Co., Inc. and Aqua Puhi, LLC	On May 21, 2013, an application was filed for approval of the sale and transfer of assets and related matters.

Telecommunications

The Commission oversees the intrastate cellular, paging, mobile telephone, and other services of 186 telecommunications providers in addition to the services of Hawaiian Telcom, Inc., the State's largest provider of intrastate services. In FY 2013, seventeen new telecommunication service providers received approval to provide telecommunications services in Hawaii. As of June 30, 2012, the Hawaii PUC had granted eligible telecommunications carrier ("ETC") status to five carriers; in FY 2013, TracFone Wireless, Inc. ("TracFone") also received designation for lifeline services only.

Table 30 - Eligible Telecommunications Carriers in Hawaii, FY 2013

Eligible Telecommunications Carriers ("ETCs")	Carrier Type	Date Designated	Docket No.
Hawaiian Telcom, Inc.	Incumbent	12/04/1997	1997-0363
Sandwich Isles Communications, Inc.	Incumbent	12/09/1998	1998-0317
Coral Wireless, LLC, dba Mobi PCS	Wireless	2/23/2007	2005-0300
T-Mobile West LLC	Wireless	3/14/2011	2010-0119
Pa Makani LLC, dba Sandwich Isles Wireless	Wireless	4/10/2012	2011-0145
TracFone Wireless, Inc. dba SafeLink Wireless	Wireless	3/27/2013	2012-0144

Examples of FY 2013 telecommunications dockets are shown in Table 31.

Table 31 - Selected Telecommunications-Related Dockets

Docket #	Topic	Notes
2011-0052	Amend annual certification requirements.	By Order No. 30932 issued December 28, 2012, the Commission adopted annual certification requirements for ETCs consistent with Federal requirements for the high cost support program.
2012-0045	Lifeline Only ETC	YourTel America Inc. Withdrawn, 10/21/13.
2012-0057	Lifeline Only ETC	Pinnacle Telecommunications Group, LLC. Pending.
2012-0144	Lifeline Only ETC	TracFone Wireless, Inc. Approved, 3/27/13, Decision and Order No. 31132.
2012-0233	Lifeline Only ETC	Total Call Mobile, Inc. Approved, 7/9/13, Decision and Order No. 31353.
2012-0327	Lifeline Only ETC	Budget PrePay, Inc. Approved, 7/26/13, Decision and Order No. 31731.
2013-0029	Lifeline Only ETC	Blue Jay Wireless, LLC. Approved, 8/21/13, Decision and Order No. 31416.
2013-0066	Certification of ETCs participating in the high-cost program	Commission instituted proceeding: 1. Whether reports and information . . . comply with the requirements of Docket No. 2011-0052; 2. Whether the Commission should provide certifications regarding federal high-cost support payments.
2013-0102	Relinquish Federal High Cost Universal Service Support Element...	On May 1, 2013, T-Mobile West LLC applied for relinquishment of the Federal High Cost Universal Service Support Element of Its Eligible Telecommunications Carrier Designation, effective as of December 31, 2013, while retaining ETC designation for the purpose of providing Lifeline service in Hawaii.

Transportation: Motor Carriers

The Commission regulates passenger and property motor carriers transporting passengers or property for compensation or hire on the public highways.⁶⁵ By law, certain transportation services, including taxis, school and city buses, ambulance services, refuse haulers, farming vehicles, and persons transporting personal property, are exempt from Commission regulation.⁶⁶ Passenger carriers are classified by authorized vehicle seating capacity. They include tour companies, limousine services, and other transportation providers. Property carriers are classified by the types of commodities transported and the nature of services performed, namely: general commodities, household goods, commodities in dump trucks, and specific commodities. The Commission performs the following functions in the regulation of motor carriers: (1) certification and licensing; (2) ratemaking; and (3) business regulation.

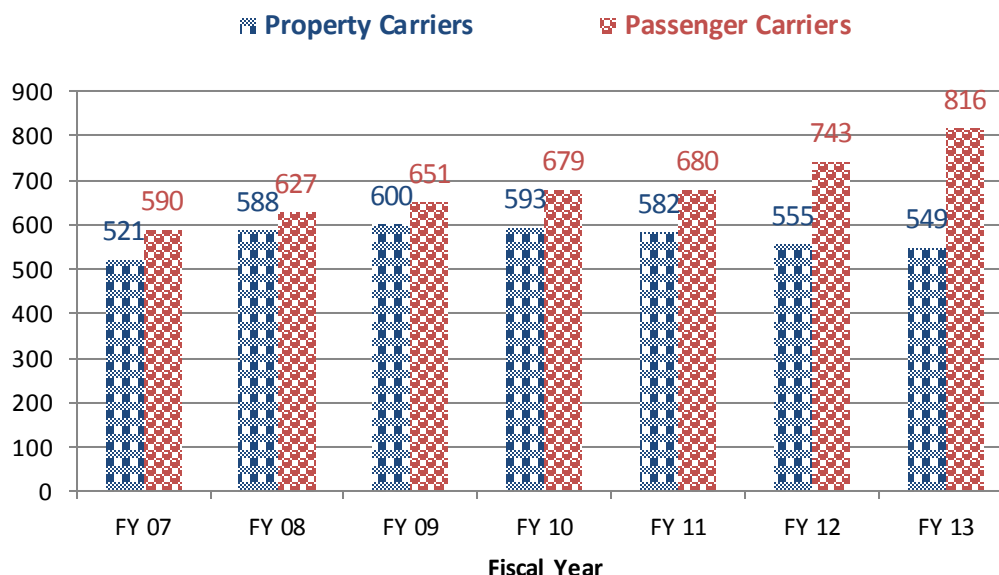
Number of Active Motor Carriers

The Commission regulates 1365 motor carriers: 549 property and 816 passenger carriers. During FY 2013, new certificates or permits were issued to 108 new passenger carriers and 19 new property carriers. As shown in Figure 30, the number of property carriers declined and the number of passenger carriers increased.

⁶⁵[HRS Chapter 271](#).

⁶⁶[HRS § 271-5](#).

Figure 30 - Number of Active Motor Carriers, Fiscal Years 2007-2013



Many of the State's motor carriers are members of either the Western Motor Tariff Bureau, Inc. or the Hawaii State Certified Common Carriers Association, nonprofit organizations engaged in the research, development, and publication of motor carrier tariffs. During the fiscal year, both organizations filed requests for rate changes for their members and represented their members in ratemaking proceedings before the Commission. The Commission also reviewed and approved rate requests from 34 independent motor carriers.

Rates that are increased or decreased by ten percent within a calendar year are presumed to be just and reasonable, pursuant to the zone of reasonableness. Motor carriers who request rate increases or decreases that do not fall within the ± 10 percent zone are required to show that their rate requests are just and reasonable. In reviewing a request, the Commission requires the carrier to submit financial statements containing the carrier's revenues, expenditures, and operating ratio. The Commission will review and may approve the rate change based on an acceptable operating ratio reported in the financial statements. Tariffs and tariff-related documents filed in the previous 365 days are available on the Commission's website: <http://dms.puc.hawaii.gov/dms/TariffReport.jsp>.

Transportation: Water Carriers⁶⁷

The Commission regulates four water carriers: Young Brothers, Limited, a provider of inter-island cargo service between all major islands; Sea Link of Hawaii, Inc., a passenger and cargo carrier providing water transportation services between the islands of Maui and Molokai; Hone Heke Corporation, a passenger and cargo carrier providing water transportation services between the islands of Maui and Lanai; and Pasha Hawaii Transport Lines LLC, a provider of cargo service between the ports of Honolulu, Kahului, and Hilo with authorization to make calls to Nawiliwili, Barbers Point, and Pearl Harbor upon a customer's request.

The statute governing the regulation of water carriers is HRS Chapter 271G, the Hawaii Water Carrier Act.⁶⁸

Selected dockets are shown in Table 32.

Table 32 - Selected Water Carrier-Related Dockets and Rate Cases

Docket #	Topic	Applicant	Comment	Date Filed
<u>2011-0345</u>	Disposal of Barges Makoa and Kakela	Young Brothers, Ltd.	Approved, subject to conditions	11/04/2011
<u>2012-0074</u>	Leases of Material-Handling Equipment	Young Brothers, Ltd.	Approved.	04/09/2012
<u>2012-0231</u>	Zone of Reasonableness	Young Brothers, Ltd.	Withdrawn.	09/20/2012
<u>2013-0032</u>	Annual Freight Rate Adjustment	Young Brothers, Ltd.	Opened.	02/11/2013

⁶⁷Intrastate marine transport.

⁶⁸[HRS 271G](#).

One Call Center

Hawaii's One Call Center was established to coordinate the location of subsurface installations, including underground utilities, and to provide advance notice of proposed excavation work to the operators of these systems. The Commission began operation of the One Call Center in 2006.⁶⁹

When an excavator calls the Hawaii One Call Center to schedule an excavation, the Hawaii One Call Center notifies facility operators in the area of excavation. Within five working days of the notification, each facility operator must provide one of the following: (1) an indication that the facility operator does not have any subsurface installations that may be affected by the excavation; (2) an indication that facilities in the area of excavation could be affected; (3) an indication that records of the subsurface installations are publicly available to the excavator; or (4) a representative to locate and mark the approximate location of the subsurface installation. When the facility operator has fulfilled at least one of the four requirements, the Hawaii One Call Center provides notice to excavators.

Under a contract that runs through June 30, 2014, the Center is operated by One Call Concepts, Inc., which also provides one call services for centers in Minnesota, Kansas, Louisiana, Missouri, Oregon and Washington. An 18-member Advisory Committee advises the Commission on implementation of the One Call Center. In FY 2013, the Advisory Committee held quarterly meetings to deliberate on a variety of issues regarding the One Call Center.

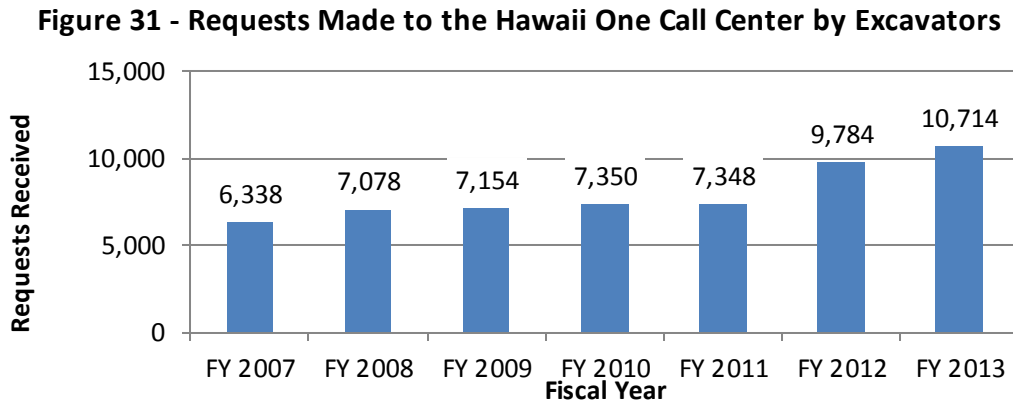
In November 2012 and May 2013, One Call Concepts held training seminars on Oahu, Maui, Kauai and the Island of Hawaii. The training seminars educated participants in the many facets of the One Call Center law including notification of excavation, marking of excavation sites, identification of subsurface installations by operator, excavation procedures and more. Approximately 400 participants attended the training.

On May 9, 2013, the Commission ruled on its findings of its investigation on assessing the risks of the excavation activities of pest control operators in Docket No. 2013-0043. The Commission gathered information from the Hawaii Pest Control Association, Hawaiian Electric Company, Inc., Maui Electric Company, Limited, Hawaiian Electric Light Company, Inc., Kauai Electric Utility Cooperative, HAWAII GAS, Hawaiian Telcom, Inc., and the Hawaii One Call Center, and found that the risks of pest control operators are

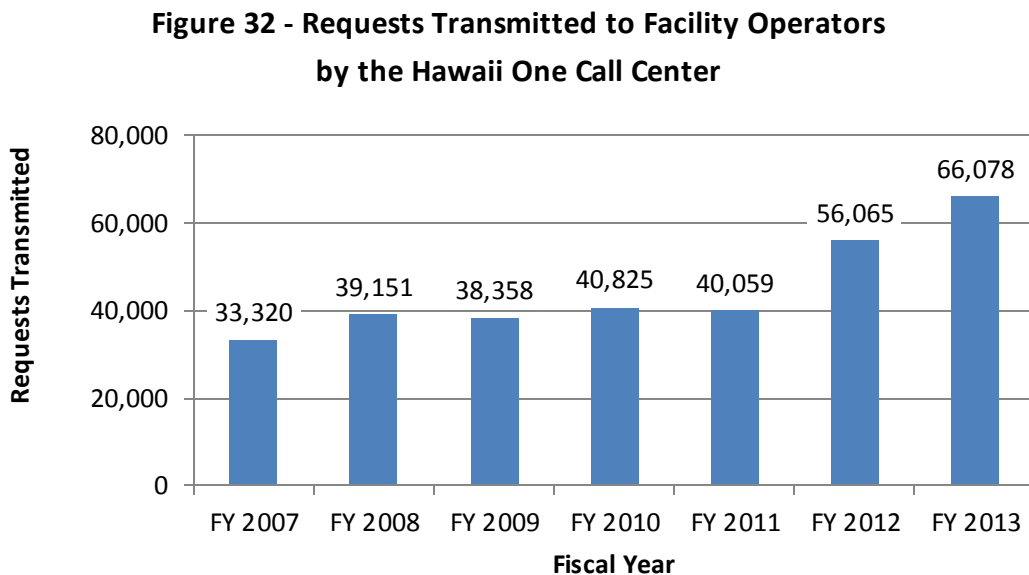
⁶⁹Pilot program established by Act 141, SLH 2004; made permanent by Act 72, SLH 2009; codified in [HRS Chapter 269E](#).

minimal. Until and unless evidence to the contrary is presented, pest control companies are exempt from the One Call Center law.

In FY 2013, the Hawaii One Call Center had an approximately 10 percent increase in the number of requests called in from excavators, compared to the previous year (Figure 31).



The Hawaii One Call Center had a corresponding 18 percent increase in the number of requests transmitted to facility operators (Figure 32).



Possible causes for the increase in requests include, but are not limited to, the effects of educational outreach by the Hawaii One Call Center (attendance at the Hawaii One Call Center training seminars doubled from FY 2012 to FY 2013) and the possibility of more excavation activities (i.e., Honolulu Rail Transit Project) during the fiscal year.

Enforcement Activities

The Commission enforces its rules, regulations, standards, and tariffs by monitoring the operating practices and financial transactions of the regulated utilities and transportation carriers. Enforcement activities involve customer complaint resolution, compliance with financial reporting and other requirements, and motor carrier citations.

Complaint Resolution

The Commission's role in protecting the public is carried out in part through its investigation and resolution of complaints. The Commission collects and compiles utility and consumer complaints to track trends and patterns in the utility and transportation industries. The Commission accepts complaints against any public utility, water carrier, motor carrier, or others subject to the Commission's jurisdiction. There are two kinds of written complaints — formal and informal.

The Commission's rules of practice and procedure, HAR Chapter 6-61, provide the requirements for formal and informal written complaints. Written formal complaints should: (1) be in writing; (2) comply with filing and other requirements set forth in HAR Sections 6-61-15 to 6-61-21; (3) state the full name and address of each complainant and of each respondent; (4) set forth fully and clearly the specific act complained of; and (5) advise the respondent and the Commission completely of the facts constituting the grounds of the complaint, the injury complained of, and the exact relief desired. If the Commission accepts a formal complaint for adjudication, it assigns a docket number and sets the matter for an evidentiary hearing, if necessary.

Written informal complaints should: (1) state the name of the respondent, the date and approximate time of the alleged act, and set forth fully and clearly the facts of the act complained of; (2) advise the respondent and the Commission in what respects the provisions of the law or rules have been or are being violated or will be violated and should provide the facts claimed to constitute the violation; and (3) specify the relief sought or desired. The Commission assigns a tracking number to each written informal complaint filed with the Commission and also assigns these complaints to certain Commission staff, who are tasked to, among other things, investigate and attempt to resolve the complaints through correspondence or conference rather than through the formal complaint process.

Formal Complaints

There were three formal complaints processed in FY 2013. The complaints were investigated in Docket Nos. 2012-0163, 2012-0171, and 2012-0330.

Written Informal Complaints

As shown in Table 33, the Commission received a total of 169 written informal complaints in FY 2013 against regulated and unregulated utility and transportation companies. There was a 48 percent increase in informal complaints received over the previous fiscal year, mainly due to the 141 percent increase in the number of electric utility complaints. The increase in electric utility complaints was largely caused by HECO's transition to a new customer billing and information system on May 29, 2012, with problems and resultant high call volume that continued for several months.

Table 33 - Total Number of Informal Complaints Received by the Commission

	FY 2010	FY 2011	FY 2012	FY 2013
Utilities				
Telecommunications	70	63	50	50
Wire line (telephone)	27	30	28	24
Cellular and Paging	36	32	22	20
Other	7	1	0	6
Electricity	31	30	41	99
Gas	7	4	3	8
Water/Sewer	6	5	2	3
Other	0	5	2	2
Transportation Carriers				
Water Carrier	1	0	1	1
Motor Carrier	22	17	15	6
Total Complaints	137	124	114	169

Informal Complaint Survey

In an effort to improve the Commission's service to consumers, a survey is sent to complainants when their case is closed. The survey includes four questions:

1. Do you feel that we responded to your complaint in a reasonable amount of time?
2. Did we provide you with a response that was clear and understandable?
3. Was your complaint resolved to your satisfaction?
4. If you called us and spoke with our staff, were they courteous and professional?

In FY 2013, the Commission received 23 responses to its informal complaint survey. They indicated that overall, the response time was reasonable and responses were clear and understandable. The majority (61 percent) of the complaints were resolved to complainants' satisfaction. Almost all who responded felt that Commission staff was courteous and professional.

Civil Citations

The Commission issues civil citations to motor carriers and freight forwarders for violations of the Motor Carrier Law, HRS Chapter 271, and Hawaii Water Carrier Act, HRS Chapter 271G. The citations impose a civil penalty, typically \$500 to \$2,000 per violation. Some of the common types of citations relate to operating without a certificate or permit issued by the Commission, failure to publish a tariff, failure to maintain the required liability insurance, improper vehicle marking, and stop-in-transit violations (i.e., shipping intrastate cargo described as interstate cargo).

In FY 2013, civil citations issued totaled \$19,000. The Commission also revoked 34 motor carriers' certificates for failure to pay the civil penalties imposed and/or for failure to file an Annual Financial Report and/or for failure to pay the requisite Motor Carrier Gross Revenue Fee.

Special Reports

Special Fund Update for Fiscal Year 2013

Act 226, SLH 1994, established the Commission's Special Fund to be administered by the Commission and to be used by the Commission and the Division of the Consumer Advocacy, Department of Commerce and Consumer Affairs ("Consumer Advocate") for all expenses incurred in the administration of HRS Chapters 269, 269E, 271, and 271G. This update on the Special Fund is provided to the legislature as required by HRS Section 269-33(c), as amended by Act 24, SLH 2013. At the beginning of each fiscal year, the Special Fund starts with a \$1 million balance carried over from the prior fiscal year. Pursuant to HRS Section 269-33(d), moneys in excess of \$1 million remaining in the Special Fund at the end of each FY are required to lapse to the General Fund.

All fees and other revenues collected by the Commission are deposited into the Special Fund. Public utilities are generally required to pay an annual fee of one-half of one percent (0.5 percent) of the gross income of each respective public utility's previous year's business, paid semi-annually, in July and December. Motor carriers pay annual fees of one-fourth of one percent (0.25 percent) of their gross revenues of the previous year's business. Other Special Fund revenues include filing fees, duplication fees, interest and penalties, and Hawaii One Call Center fees. The Commission also may assess civil penalties, subject to providing the alleged violators with notice and opportunity to be heard in accordance with HRS Chapter 91. For motor carriers, the Commission may impose penalties for the late payment of annual fees, civil penalties up to \$1,000 per violation of the Motor Carrier Law, HRS Chapter 271, and the Commission's applicable rules, orders and regulations. For water carriers, the Commission may impose various civil penalties for violating the Water Carrier Law, HRS Chapter 271G, and the Commission's applicable rules, orders and regulations. For any other public utility violating HRS Chapter 269, and the Commission's applicable rules, orders and regulations, the Commission may impose various civil penalties not to exceed \$25,000 each day so long as such violation continues. Pursuant to HRS § 269E-6, facility operators are required to pay fees to finance the operation of the One Call Center established pursuant to HRS § 269E-5.

Revenues

Total FY 2013 Special Fund revenues of \$21,761,873, reflect an increase compared to FY 2012 revenues. The Commission collected \$20.1 million in public utility fees for FY 2013, 12.9 percent more than FY 2012 public utility fees. Motor carrier fees of \$1.5 million collected in FY 2013 were 11.7 percent more than the fees collected in FY 2012. The revenues derived from each source of income for FY 2013 are shown in Figure 33 and Table 34.

Figure 33 - Public Utilities Commission Special Fund FY 2013 Revenues

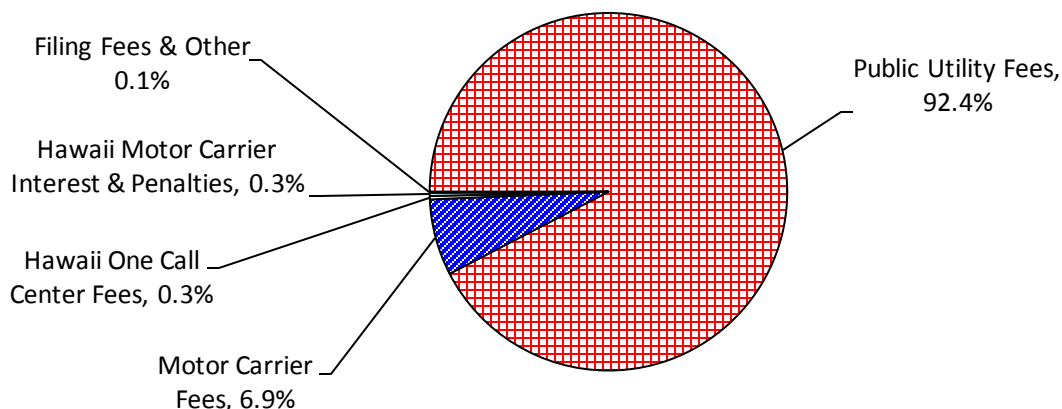


Table 34 - Public Utility Commission Special Fund Revenues, FY 2012 and 2013

Description of Revenues	FY 2012	FY 2013
Public Utility Fees	17,809,902	20,111,411
Motor Carrier Fees	1,344,118	1,500,947
Hawaii One Call Center Fees	68,186	66,353
Motor Carrier Interest/Penalties	23,815	35,775
Hawaii Motor Carrier Act Penalties	12,731	26,988
Filing Fees & Other	12,914	20,399
Total Revenues	\$ 19,270,946	\$ 21,761,873
<i>(Note: All figures are rounded to the nearest dollar.)</i>		

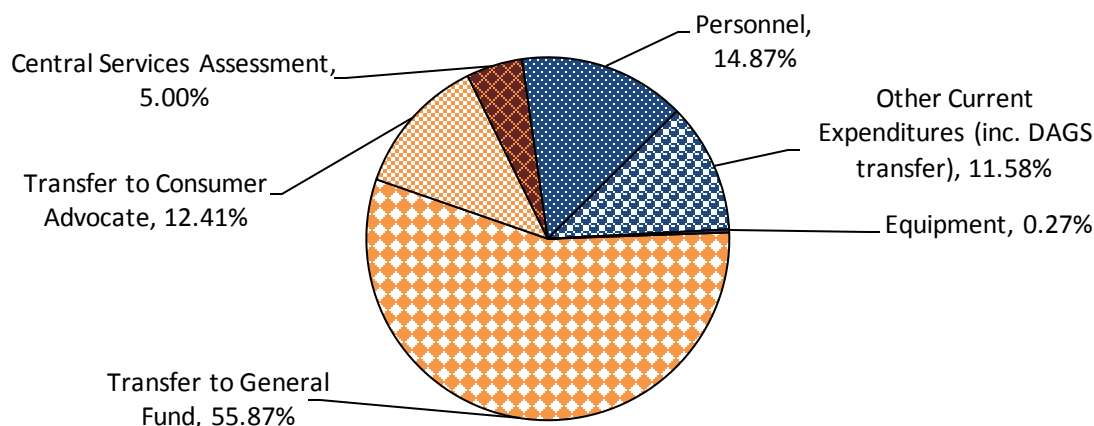
Expenditures and Transfers

In FY 2013, a total of 73.28 percent of the Special Fund revenues were transferred: over half (55.87 percent) to the General Fund, 12.41 percent to the Consumer Advocate, and five percent for Central Services Assessment. As shown in Table 35 and Figure 34, only 26.72 percent of the special fund revenues were available to the Commission for personnel, other current expenditures, and equipment.

Table 35 - Amount Expended and Transferred

FY 2013	Amount	Percent
Expenditures	5,814,938	26.72%
Transfers	15,946,935	73.28%

Figure 34 - Public Utilities Commission Special Fund FY 2013 Expenditures and Transfers



The Commission expended \$3,236,240 for personnel, \$2,519,075 for other current expenditures (including \$811,000 that was transferred to DAGS Jobs #22-13-7454 and #22-13-7519 for the Commission's renovation project), and \$59,623 for equipment.

Transfers included \$2,701,465 to the Office of the Consumer Advocate to cover its operating expenses; \$1,087,895 to DAGS Central Services Division pursuant to HRS Section 36-37; and (pursuant to HRS Section 269-33), the Commission transferred the Special Fund's excess balance of \$12,157,575 to the General Fund, an increase of 19.5 percent over FY 2012. Table 36 shows the breakdown of all Commission expenditures and transfers out of the Special Fund in FY 2012 and FY 2013.

**Table 36 - Public Utilities Commission Special Fund
Expenditures and Transfers, FY 2012 and 2013**

Description of Expenditures and Transfers	FY 2012	FY 2013
Personnel (Appn. Acct. S-13-352-O)	3,206,522	3,236,240
Other Current Expenditures (includes DAGS Transfer)	1,797,301	2,519,075
Equipment	136,173	59,623
Transfer to Consumer Advocate	3,003,599	2,701,465
Central Services Assessment	951,573	1,087,895
Transfer to General Fund	10,175,778	12,157,575
Total	\$ 19,270,946	\$ 21,761,873
<i>(Note: All figures are rounded to the nearest dollar.)</i>		

Total Special Fund expenditures and transfers (excluding General Fund transfer) for FY 2013 increased 5.6 percent over FY 2012, primarily due to the DAGS transfer for the Commission's office renovation project, which increased "Other Current Expenditures" by 40.2 percent.

As required by [Act 260](#) of 2013, summaries of power purchase agreements, including pricing, are provided in the tables below. "On peak" is the 14 hours between 7 AM and 9 PM; off peak is the 10 hours between 9 PM and 7 AM.

[illegible]

Table 39 - Summary of Power Purchase Agreements in Effect on Maui Island, FY 2013

MAUI Facility Name	Export Capacity (MW)	Facility Type	Average FY13 Energy Price (\$ per kWh) ^a	Time of Production	Fuel / Energy Source	Identifying Docket or In Service Date	End Date / Term ^b
Hawaiian Commercial & Sugar Company	16	Firm	\$0.20368	On Peak	Biomass and Hydro	6616, 6374, 4072	12/31/2014
			\$0.19499	Off Peak			
Kaheawa Wind Farm	30	As Available	\$0.13121	On Peak	Wind	2004-0365 6/9/2006	6/9/2026
			\$0.12351	Off Peak			
Kaheawa Wind Power II	21	As Available	\$0.23142	Any	Wind	2010-0279 7/2/2012	7/2/2032
Auwahi Wind Energy	21	As Available	\$0.20257	Any	Wind	2011-0060 12/8/2012	12/28/2032
Makila Hydroelectric Plant	0.5	As Available	\$0.20368	On Peak	Hydro	05-0161 9/22/2006	9/22/2026
			\$0.19499	Off Peak			
Feed-in Tariff	Varied	As Available	\$0.2419	Any	Solar	2008-0273	20 years
Avoided Energy Cost Rate			\$0.20368	On Peak	Docket No. 7310 Decision and Order No. 24086		
			\$0.19499	Off Peak			
a Based on 12-month averages of actual energy costs; do not include capacity payments (if applicable).							
b All non-FIT agreements automatically continue in effect thereafter until terminated by either party.							

Table 40 - Power Purchase Agreement^a in Effect on Lanai, FY 2013

LANAI Facility Name	Facility Capacity (MW)	Facility Type	Average FY13 Energy Price (\$ per kWh)	Time of Production	Fuel / Energy Source	Identifying Docket or In Service Date	End Date / Term ^b
Lanai Sustainability Research, LLC	1.2	As Available	\$0.2700	Any	Solar	2008-0167 12/19/2008	12/19/2033
a There are no FIT projects on Lanai.							
b Non-FIT agreements automatically continue in effect thereafter until terminated by either party.							

Table 41 - Power Purchase Agreements in Effect on Molokai, FY 2013

MOLOKAI Facility Name	Facility Capacity (MW)	Facility Type	Average FY13 Energy Price (\$ per kWh)	Time of Production	Fuel / Energy Source	Identifying Docket or In Service Date	End Date / Term
Feed-in Tariff	Varied	As Available	\$0.2545	Any	Solar	2008-0273	20 years

[illegible]

Green Infrastructure Finance / Green Energy Market Securitization (GEMS)

The Green Infrastructure Finance legislation, also known as the Green Energy Market Securitization (GEMS) program, is intended to help renters and other “hard-to-reach” market segments to be able to use lower cost energy systems (including energy efficiency and customer-sited solar photovoltaic systems) in their homes.⁷⁰

The framework for Hawaii’s GEMS program⁷¹ was signed into law by the Governor on June 27, 2013, as Act 211.⁷² According to Act 211, the Department of Business, Economic Development and Tourism may apply to the Commission for one or more financing orders, to be considered in docketed proceedings.

The initial capital raised for the GEMS program is to be deployed according to terms specified and approved in Commission orders. Repayment of deployed capital is anticipated to use On-Bill Financing (“OBF”), currently under development by the Commission (see page 54); therefore, it is expected that those who install clean energy technology under the GEMS program will repay the obligations through a charge on their utility bills.

As the GEMS program is still in development following the signing of Act 211 into law in June of 2013, no regulatory proceedings or associated financing or program orders have yet been issued by the Commission. Both DBEDT and the Commission have been working to develop the necessary financing- and program-side mechanisms and to establish the appropriate regulatory processes to create a successful GEMS program as expeditiously as possible. The State has set its target for the issuance of initial GEMS financing and program orders within the first quarter of 2014.

⁷⁰Traditional utility securitizations (used by mainland utilities for stranded cost or emergency cost recovery) served as the model for the GEMS Program. Hawaii made some revisions to the typical setup to suit the Program’s unique purposes.

⁷¹The program was developed through a collaborative effort involving the Hawaii State Legislature, the Office of the Governor, the Commission, the Department of Budget and Finance, the Division of Consumer Advocacy, DBEDT, Hawaii’s Department of the Attorney General, and various other clean energy community stakeholders.

⁷²[Act 211, SLH 2013](#).

National Association of Regulatory Utility Commissioners 2013 SERCAT Grant

Under a State Electricity Regulators Capacity Assistance and Training grant from the U.S. Department of Energy via the National Association of Regulatory Utility Commissioners, Energy and Environmental Economics, Inc. (“E3”) was retained to develop a methodology and compare the economics of different renewable energy procurement options in Hawaii.

In the project, E3 developed a methodology for modeling avoided costs on an hourly basis for each of four islands included in the study (Kauai, Oahu, Maui, and Hawaii). These will be used in the development of scenarios to indicate the relative impacts of changes to key drivers of avoided costs (including energy, capacity, and ancillary services).

The avoided cost (i.e., value of the renewable electricity to the system) is then compared to the cost of renewable electricity received via agreements such as utility-scale contracts, net energy metering,⁷³ or feed-in tariffs. A comparison between the calculated value of the electricity and the amount paid to procure the renewable electricity can give an indication of the net cost or value to the system.

The report will also provide an overview of alternative renewable procurement approaches (such as virtual net metering, community solar, and feed-in tariffs) from other jurisdictions.

The final report is expected to be available in 2014.

⁷³For net metering, the cost of renewable electricity procurement is the difference in the hourly value of produced electricity compared to the hourly cost of electricity, plus system (fixed) costs.

Environmental Matters and Actions of the Federal Government

Several environmental matters and actions of the Federal government affect the regulation of public utilities in Hawaii. Changes in laws and regulations can change utility service costs significantly. Attempting to predict or plan for future requirements can add uncertainty to cost estimates. The uncertainties apply to both existing and potential facilities, since they may face major upgrade costs or need to use different fuels to comply with the requirements.

Mercury and Air Toxics Standards (MATS)

The Mercury and Air Toxics Standards ("MATS") final rule, published by the United States Environmental Protection Agency ("EPA") on February 16, 2012, will affect Hawaii's oil- and coal-fired generating units with capacities of 25 MW or greater.⁷⁴ Compliance with MATS is required by April 16, 2015, unless the EPA approves a maximum of two possible separate one-year extensions.

National Ambient Air Quality Standards (NAAQS)

The National Ambient Air Quality Standards ("NAAQS")⁷⁵ are the limits established by the U.S. EPA for commonly occurring air pollutants. If the air in an area has pollutant levels that are below the limits, the area is "in attainment of air quality standards." The standards were updated on February 9, 2010 for nitrogen dioxide; on June 22, 2010 for sulfur dioxide; on August 31, 2011 for carbon monoxide; and on December 14, 2012 for particulates. In calendar year 2012, Hawaii was in attainment of NAAQS except for sulfur dioxide and particulates less than 2.5 microns in size (on the Island of Hawaii, due to volcanic emissions and brush fires).^{76,77}

⁷⁴USEPA, "[Mercury and Air Toxics Standards](#)," and "[Power Plants Likely Covered by the Toxics Rule](#)," accessed July 26, 2013.

⁷⁵USEPA, "[National Ambient Air Quality Standards](#)," accessed July 26, 2013.

⁷⁶USEPA, "[EPA Region 9 2009-2011 Sulfur Dioxide Monitoring Site Design Values](#)," accessed July 26, 2013.

⁷⁷Hawaii State Department of Health, "[List of Exceedances of the National Ambient Air Quality Standards](#)," and "[2012 Hawaii Air Quality Data](#)," September, 2013.

Estimated Cost of Compliance with MATS and NAAQS

HECO⁷⁸ estimated the capital costs for Hawaii's electric utilities to comply with MATS and NAAQS to be \$1.4 billion (\$975 million for utility-owned generators on Oahu, \$209 million for utility-owned generators on Hawaii island; and \$221 million for utility-owned generators on Maui) if additional emissions control equipment was installed on existing units, and current fuels (low- and intermediate-sulfur fuel oil) continued to be used. The estimated monthly cost per Oahu ratepayer under this scenario was a gradual increase over five years to an additional \$17 per month.⁷⁹ Alternatives presented were the use of lower sulfur distillate fuels, resulting in an increase over one year to an additional \$20 per month; or a switch to LNG in 2020, with a projected reduction in monthly bills after 2020. Results for Hawaii and Maui customers projected fuel switching to lower sulfur industrial fuel oil and lower sulfur diesel to be the least cost compliance option.⁸⁰ These cost estimates did not include costs that would be incurred on Kauai, or by independent power producers, some of whom could have additional fuel or equipment costs, and/or receive higher avoided cost payments due to higher utility fuel costs.

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE-NESHAP)

The National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines ("RICE-NESHAP")⁸¹ had an initial compliance deadline of May, 2013 and have been incorporated into Hawaii utilities' plans.⁸²

⁷⁸Hawaiian Electric Company, *2013 Integrated Resource Planning Report*, June 28, 2013.

⁷⁹Assuming 600 kWh/month.

⁸⁰*Hawaiian Electric Companies Fuels Master Plan*, Docket No. [2009-0346](#), January 31, 2013, (also 2013 IRP report Appendix I).

⁸¹USEPA, "[National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines](#)," accessed July 26, 2013; and Federal Register Notice, "[40 CFR Parts 60 and 63, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines . . . Final Rule](#)," accessed July 26, 2013. On September 15, 2013, EPA announced [reconsideration](#) of three specific items relating to emergency engines and grid emergencies.

⁸²Hawaiian Electric Company, *2013 Integrated Resource Planning Report*, June 28, 2013; and USEPA, "[Summary of public comments received on the draft air](#)

Maximum Achievable Control Technology (MACT)

Nationwide standards for controlling hazardous air pollutant emissions from industrial, commercial, institutional boilers and process heaters, published by the EPA on January 31, 2013,⁸³ will affect the power plant at Hawaiian Commercial and Sugar Company, and possibly other facilities. The effective date of the rule is April 1, 2013, with compliance required by April 1, 2016, unless a one-year extension is granted.⁸⁴

Regulation of Greenhouse Gases (GHG)

The Final Step 3 of the greenhouse gas emission tailoring rule, published in the *Federal Register* on July 12, 2012, requires that large sources of greenhouse gases obtain air permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs for new and existing industrial facilities.⁸⁵

In data reported to the EPA for 2011 and 2012, emissions from Hawaii's large electric power plants dropped 5.1 percent between calendar year 2011 and calendar year 2012 (Figure 35).

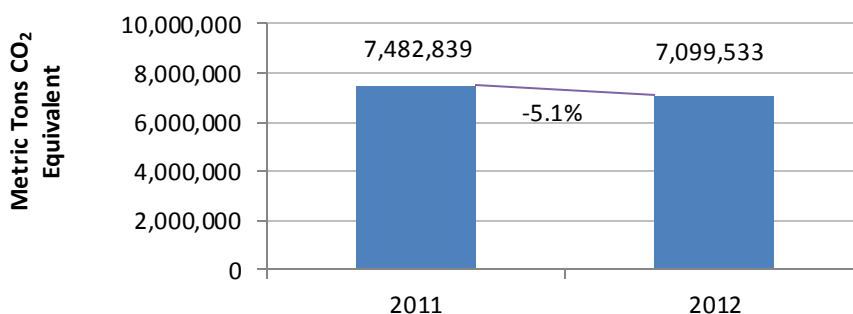
[permit for Kauai Island Utility Cooperative Port Allen generating station](#)," October 10 - November 9, 2012, accessed July 26, 2013.

⁸³USEPA, Air Quality Planning and Standards, "[Regulatory Actions](#)," accessed July 25, 2013.

⁸⁴Alexander and Baldwin, [SEC form 10-Q for the period ending March 31, 2013](#), accessed July 25, 2013.

⁸⁵Permits are required for new emitters of at least 100,000 tons of CO₂ equivalent GHG per year, and any existing 100,000 ton per year emitter planning to increase GHG emissions by 75,000 tons of CO₂ equivalent GHG per year. USEPA, "[New Source Review, Regulations & Standards](#)," accessed July 26, 2013.

**Figure 35 - Greenhouse Gas Emissions
Reported by Large Power Plants in Hawaii, 2011-2012**



Source: USEPA, <http://ghgdata.epa.gov/ghgp/main.do>

Under Section 111(b) of the Federal Clean Air Act, EPA is expected to establish carbon pollution standards for new power plants. The EPA published proposed GHG regulations for new facilities in April of 2012.⁸⁶

On June 25, 2013, President Obama announced the President's Climate Action Plan,⁸⁷ which, among other things, acknowledged the progress of renewable energy targets in 35 states and energy efficiency targets in more than 25 states; set as a goal "to double renewable electricity generation once again by 2020;" and directed EPA to "build on state leadership, provide flexibility, and take advantage of a wide range of energy sources and technologies"⁸⁸ in issuing standards, regulations, or guidelines for CO₂ emissions applicable to modified, reconstructed and existing power plants.⁸⁹

Under Section 111(d) of the Federal Clean Air Act, the EPA is expected to develop guidelines for States to use in developing plans to control carbon emissions from the existing electricity production system. The EPA's schedule includes issuing

⁸⁶However, the EPA announced on September 20, 2013, that it intends to rescind the April, 2012 proposed rules. USEPA, "[Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units](#)," September 20, 2013.

⁸⁷<http://www.whitehouse.gov/the-press-office/2013/06/25/fact-sheet-president-obama-s-climate-action-plan>

⁸⁸The White House, "[President Obama's Action Plan](#)," and "[Infographic](#)," June 25, 2013.

⁸⁹ Congressional Research Service, "[President Obama's Climate Action Plan](#)," June 26, 2013.

proposed guidelines by June 2014 and final guidelines by June 2015. States are expected to use the federal guidelines to develop and submit state plans to EPA by June 2016.⁹⁰

Under the "Hawaii Clean Energy Initiative Plus" scenario, Hawaii's electricity-sector greenhouse gas emissions are projected to be at or below 1990 levels before 2020,^{91,92} meeting both Federal and State goals for overall statewide greenhouse gas emissions reductions in the electricity sector.⁹³

Regional Haze – Restoring “Natural Visibility” Levels in National Parks

The Regional Haze Federal Implementation Plan for Hawaii will limit emission of sulfur dioxide from three sources on the island of Hawaii: Kanoiehua Hill Generating Station, Hill 5 and Hill 6; Puna Power Plant, Boiler 1; Shipman Power Plant, Boiler S-3 and Boiler S-4, on and after December 31, 2018.⁹⁴

⁹⁰USEPA, “Carbon Pollution Standards,” <http://www2.epa.gov/carbon-pollution-standards>, accessed July 25, 2013.

⁹¹Greenhouse Gas Emissions Reduction Task Force, [*Report to the Twenty-Fifth Legislature*](#), December 30, 2009.

⁹²Honolulu Star-Advertiser, [*“Local utilities: We're on board with Obama's emissions goals,”*](#) June 25, 2013; accessed July 25, 2013.

⁹³Hawaii's greenhouse gas law (Act 234, SLH 2007; [HRS § 342B-71 to 73](#)) requires statewide emissions by 2020 to be less than 1990 levels.

⁹⁴USEPA Final Rule, published in the *Federal Register*, [“Approval and Promulgation of Implementation Plans; State of Hawaii; Regional Haze Federal Implementation Plan,”](#) October 9, 2012.

Appendix

Table of Acronyms	101
Table of Figures	103
Table of Tables	104
Electrical System Reliability – Additional Information	
HECO	106
HELCO	111
MECO	115
KIUC	121
Utility Gas Pricing and Revenues – Additional Information	124

Table of Acronyms

ASAI	Average Service Availability Index
CAIDI	Customer Average Interruption Duration Index
CFH	Cubic Feet per Hour
CFR	Code of Federal Regulations
Commission	Public Utilities Commission, State of Hawaii
CPCN	Certificate of Public Convenience and Necessity
DAGS	Department of Accounting and General Services, State of Hawaii
DBEDT	Department of Business, Economic Development, and Tourism, State of Hawaii
DCA	Division of Consumer Advocacy, Department of Commerce and Consumer Affairs, State of Hawaii
DG	Distributed Generation
DR	Demand Response
DSM	Demand-side Management
ECAC / ERAC	Energy Cost Adjustment Clause / Energy Rate Adjustment Clause
EEPS	Energy Efficiency Portfolio Standards
EPA	United States Environmental Protection Agency
ETC	Eligible Telecommunications Carrier
FCC	Federal Communications Commission
FERC	Federal Energy Regulatory Commission
FIT	Feed-in Tariff
FY	Fiscal Year for the State of Hawaii (FY 2013 runs from July 1, 2012 to June 30, 2013)
GEMS	Green Energy Market Securitization
GHG	Greenhouse Gas
GWh	Gigawatt-hour (1,000,000,000 watt-hours), a measure of the amount of energy produced or used over time
HAR	Hawaii Administrative Rules
HB	House Bill
HECO	Hawaiian Electric Company, Inc.
HECO Companies	HECO, HELCO and MECO
HELCO	Hawaii Electric Light Company, Inc.
HEP	Hamakua Energy Partners
HERA	Hawaii Electricity Reliability Administrator
HRS	Hawaii Revised Statutes
HTI	Hawaiian Telecom, Inc.
IRP	Integrated Resource Planning
KIUC	Kauai Island Utility Cooperative
kW	Kilowatt (1000 watts), a measure of instantaneous energy capacity or demand
kWh	Kilowatt-hour (1000 watt-hours), a measure of the amount of energy produced or used over a time period
LNG	Liquefied Natural Gas
MATS	Mercury Air Toxics Standard
MECO	Maui Electric Company, Limited
Mobi PCS.....	Coral Wireless, LLC
MW	Megawatt: 1,000,000 (1 million) watts, a measure of instantaneous energy capacity or demand
MWh	Megawatt-hour: 1,000,000 (1 million) watt-hours, a measure of energy produced or used over a time period
NAAQS	National Ambient Air Quality Standards
NARUC	National Association of Regulatory Utility Commissioners
NEM	Net Energy Metering
OBF	On-Bill Financing
PBF	Public Benefits Fee
PV / photovoltaic.....	A system that generates electricity from the sun (solar power)
PUC	Public Utilities Commission, State of Hawaii
RFP	Request for Proposals

RICE NESHAP	Reciprocating Internal Combustion Engine - National Emission Standards for Hazardous Air Pollutants
RPS	Renewable Portfolio Standards
RSWG	Reliability Standards Working Group
SAIC	Science Application International Corporation, now Leidos Engineering LLC
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SB	Senate Bill
SNG	Synthetic Natural Gas

Table of Figures

	Page
Figure 1 - Number of Dockets Opened and Closed, Fiscal Years 2008-2013.....	18
Figure 2 - The Four Electric Utilities Serving the State of Hawaii.....	22
Figure 3 - Annual Electricity Sales, By Island, 2008-2012.....	24
Figure 4 - Oil Prices and Average Hawaii Electricity Prices.....	26
Figure 5 - Monthly Average Kilowatt-Hour Demand per Meter, 2006-2012.....	27
Figure 6 - Average Monthly Residential Electric Bills, 2011 and 2012.....	28
Figure 7 - HECO Residential Rate Components.....	29
Figure 8 - HELCO Residential Rate Components.....	29
Figure 9 - MECO - Maui Division Residential Rate Components.....	30
Figure 10 - MECO - Molokai Division Residential Rate Components.....	30
Figure 11 - MECO - Lanai Division Residential Rate Components.....	30
Figure 12 - KIUC Six Year Comparison of Residential Rates.....	31
Figure 13 - Resources Used in 2012 to Meet Hawaii's Electricity Needs.....	31
Figure 14 - Reduction of Dependence on Fossil Fuels for Electricity, from 91% in 2003 to 76% in 2012.....	32
Figure 15 - Percent Fossil Fuel, Renewables, and Efficiency, HECO Territories, 2003-2012.....	39
Figure 16 - Percent Fossil Fuel, Renewables, and Efficiency, KIUC.....	40
Figure 17 - Cumulative NEM Capacity Installed on the Islands of Oahu, Maui, Molokai, Lanai, and Hawaii.....	44
Figure 18 - NEM and Similar Customer-Sited Renewable Generation on the KIUC system.....	45
Figure 19 - Electric Utility Revenue, 2012, by Expense Category.....	56
Figure 20 - Electric Utility Rate of Return 5 year Comparison.....	57
Figure 21 - Capital Improvement Expenditure Forecasts by Utility, 2013-2017.....	58
Figure 22 - Normalized Average Service Availability Index (ASAI).....	60
Figure 23 - HECO System Average Interruption Duration Index (SAIDI), by Year.....	61
Figure 24 - HELCO System Average Interruption Duration Index (SAIDI), by Year.....	63
Figure 25 - MECO System Average Interruption Duration Index (SAIDI), by Year.....	64
Figure 26 - KIUC System Average Interruption Duration Index (SAIDI), by Year.....	65
Figure 27 - Average Monthly Residential Utility Gas Bills and Cost Per Therm, 2012.....	68
Figure 28 - Gas Utility Rate of Return, 5 year Comparison, Oahu District.....	72
Figure 29 - Five-year Capital Expenditure Budget Forecast for Hawaii Gas.....	73
Figure 30 - Number of Active Motor Carriers, FY13.....	78
Figure 31 - Requests Made to the Hawaii One Call Center by Excavators.....	81
Figure 32 - Requests Transmitted to Facility Operators by the Hawaii One Call Center.....	81
Figure 33 - Public Utilities Commission Special Fund FY 2013 Revenues.....	86
Figure 34 - Public Utilities Commission Special Fund FY 2013 Expenditures and Transfers.....	87
Figure 35 - Greenhouse Gas Emissions Reported by Large Power Plants in Hawaii, 2011-2012.....	98
Figure 36 - HECO Customer Average Interruption Duration Index (CAIDI), by Year.....	107
Figure 37 - HECO 2012 Outage Causes, by Number of Customers Affected.....	108
Figure 38 - HECO System Average Interruption Frequency Index (SAIFI), by Year.....	110
Figure 39 - HECO Average Service Availability Index (ASAI), by Year.....	110
Figure 40 - HELCO Customer Average Interruption Duration Index (CAIDI), by Year.....	112
Figure 41 - HELCO 2012 Outage Causes.....	113
Figure 42 - HELCO System Average Interruption Frequency Index (SAIFI), by Year.....	114
Figure 43 - HELCO Average Service Availability Index (ASAI), by Year.....	114
Figure 44 - MECO Customer Average Interruption Duration Index, by Year.....	116
Figure 45 - MECO 2012 Outage Causes.....	117
Figure 46 - MECO System Average Interruption Frequency Index, by Year.....	120
Figure 47 - MECO Average Service Availability Index, by Year.....	120
Figure 48 - KIUC Customer Average Interruption Duration Index (CAIDI), by Year.....	121
Figure 49 - KIUC System Average Interruption Frequency Index (SAIFI), by Year.....	121
Figure 50 - KIUC Average Service Availability Index, by Year.....	122
Figure 51 - KIUC 2012 Sustained Interruptions by Frequency.....	122
Figure 52 - KIUC 2012 Sustained Interruptions by Magnitude.....	123

Table of Tables

	Page
Table 1 - Public Utilities Commission Dockets	17
Table 2 - Number of Electric Utility Customers, Calendar Years 2008-2012	23
Table 3 - Annual Electricity Sales in Gigawatt-hours, By Island, Calendar Years 2008-2012	23
Table 4 - Residential Electricity Use and Average Bills, by Island, 2011 and 2012	28
Table 5 - Summary of Selected Electricity-Related Dockets and Rate Cases	32
Table 6 - RPS and EEPS Standards.....	37
Table 7 - Gigawatt-Hours of Electricity Saved, and Produced by Source, HECO Territories, 2003-2012.....	38
Table 8 - Gigawatt-Hours of Electricity Saved, and Produced by Source, KIUC, 2003-2012	40
Table 9 - Hawaii Energy FY 2013 Preliminary Results	42
Table 10 - PBF Island Equity Expenditure Targets and Results	43
Table 11 - Feed-In Tariff (FIT) Rates	46
Table 12 - Feed-In Tariff (FIT) Capacity as of June 30, 2013.....	47
Table 13 - Hawaii's Electric Utility Costs in 2012, by Category, Statewide	56
Table 14 - Authorized Rates of Return	57
Table 15 - Forecasts of Electric Utility Capital Improvement Expenditures (\$).....	58
Table 16 - HECO Annual Service Reliability Indices – All Events, by Year.....	60
Table 17 - HECO Annual Service Reliability Indices – Normalized, by Year.....	61
Table 18 - HELCO Annual Service Reliability Indices – All Events, by Year.....	62
Table 19 - HELCO Annual Service Reliability Indices – Normalized, by Year.....	62
Table 20 - MECO Annual Service Reliability Indices (All Islands) – All Events, by Year.....	63
Table 21 - MECO Annual Service Reliability Indices (All Islands) – Normalized, by Year.....	64
Table 22 - KIUC Annual Service Reliability Indices – All Events, by Year.....	65
Table 23 - Utility Gas Customers, 2008-2012	66
Table 24 - Annual Customers, Sales, and Revenues, Utility Gas in Hawaii, 2012.....	69
Table 25 - Selected Gas Utility Dockets.....	70
Table 26 - Gas Utility Expenditure Forecast.....	72
Table 27 - Gas Line Breaks and Service Interruptions.....	73
Table 28 - Meter Performance Control Program.....	74
Table 29 - Selected Water and Wastewater Dockets	75
Table 30 - Eligible Telecommunications Carriers in Hawaii, FY 2013	76
Table 31 - Selected Telecommunications-Related Dockets	76
Table 32 - Selected Water Carrier-Related Dockets and Rate Cases	79
Table 33 - Total Number of Informal Complaints Received by the Commission.....	83
Table 34 - Public Utility Commission Special Fund Revenues, FY 2012 and 2013.....	86
Table 35 - Amount Expended and Transferred.....	87
Table 36 - Public Utilities Commission Special Fund Expenditures and Transfers, FY 2012 and 2013.....	88
Table 37 - Summary of Power Purchase Agreements in Effect on Oahu, FY 2013	89
Table 38 - Summary of Power Purchase Agreements in Effect on Hawaii Island, FY 2013	90
Table 39 - Summary of Power Purchase Agreements in Effect on Maui Island, FY 2013.....	91
Table 40 - Power Purchase Agreement in Effect on Lanai, FY 2013	91
Table 41 - Power Purchase Agreements in Effect on Molokai, FY 2013.....	91
Table 42 - Summary of Power Purchase Agreements in Effect on Kauai, FY 2013	92
Table 43 - HECO Annual Service Reliability Indices – All Events, by Year.....	106
Table 44 - HECO Annual Service Reliability Indices – Normalized, by Year.....	106
Table 45 - HECO's Top 5 Outage Causes, 2012.....	108
Table 46 - "Other" Causes of HECO Outages, 2012.....	109
Table 47 - HELCO Annual Service Reliability Indices – All Events.....	111
Table 48 - HELCO Annual Service Reliability Indices – Normalized.....	111
Table 49 - HELCO Outage Categories and Sample Causes.....	112
Table 50 - "Other" Causes of HELCO Outages, 2012.....	113
Table 51 - MECO Annual Service Reliability Indices (All Islands) – All Events.....	115
Table 52 - MECO Annual Service Reliability Indices (All Islands) – Normalized.....	115
Table 53 - MECO Outage Categories and Sample Causes.....	117
Table 54 - "Other" Causes of MECO Outages, 2012.....	118

Table 55 - KIUC Outage Categories Ranked by Frequency, with Sample Causes	122
Table 56 - Utility Gas Customers, Therms, and Revenues, by Island, 2012	124

Electrical System Reliability – Additional Information

The information provided below is in addition to the discussion and data presented in the section on electrical system reliability, starting on page 59.

HECO

For completeness, the two tables below (Table 43, all events, and Table 44, normalized) are similar to those presented on page 60.

Table 43 - HECO Annual Service Reliability Indices – All Events, by Year

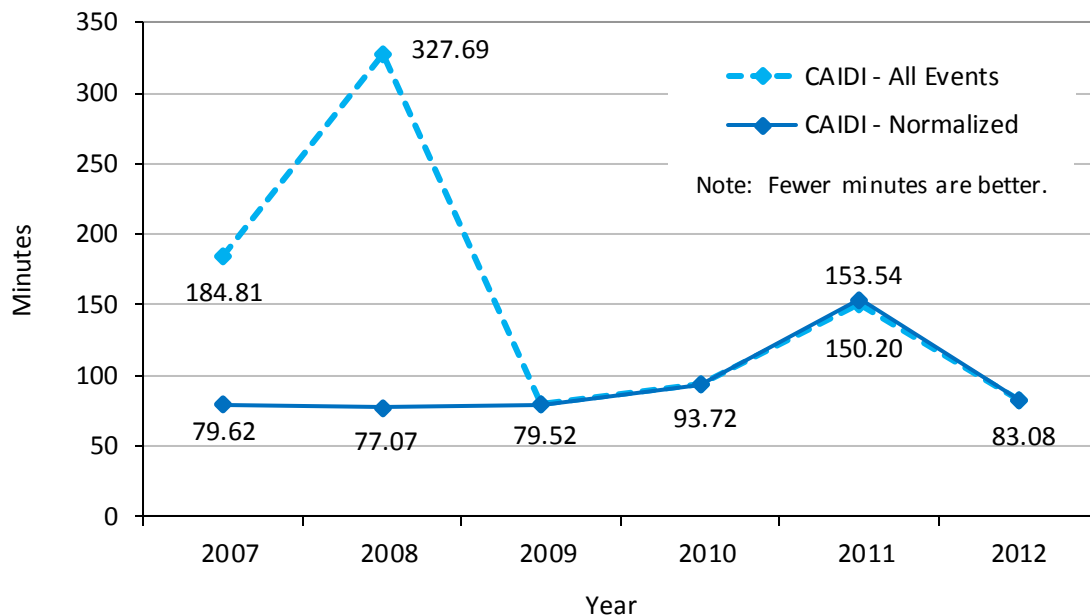
	2007	2008	2009	2010	2011	2012
Number of Customers	293,893	294,371	294,802	295,637	296,679	297,598
Customer Interruptions	639,886	729,784	333,908	361,334	502,252	407,197
Customer-Hours Interrupted	1,970,925	3,985,756	442,546	564,424	1,257,338	563,807
SAIDI (Minutes)	402.38	812.39	90.08	114.55	254.59	113.67
CAIDI (Minutes)	184.81	327.69	79.52	93.72	150.20	83.08
SAIFI (Occurrences)	2.177	2.479	1.133	1.222	1.693	1.368
ASAI (Percent)	99.923	99.846	99.983	99.978	99.952	99.978

Table 44 - HECO Annual Service Reliability Indices – Normalized, by Year

	2007	2008	2009	2010	2011	2012
Number of Customers	293,893	294,371	294,802	295,637	296,679	297,598
Customer Interruptions	367,837	382,124	333,908	361,334	408,326	407,197
Customer-Hours Interrupted	488,144	490,842	442,546	564,424	1,044,904	563,807
SAIDI (Minutes)	99.66	100.05	90.08	114.55	211.32	113.67
CAIDI (Minutes)	79.62	77.07	79.52	93.72	153.54	83.08
SAIFI (Occurrences)	1.252	1.298	1.133	1.222	1.376	1.368
ASAI (Percent)	99.981	99.981	99.983	99.978	99.960	99.978
2007	Data normalized to exclude the 1/29/07 and 02/02/07 High Wind Outages					
	Data normalized to exclude the 11/04/07 - 11/05/07 and 12/04/07 - 12/06/07 Storms					
2008	Data normalized to exclude the 12/10/08 - 12/14/08 High Wind Outages					
	Data normalized to exclude the 12/26/08 Island Wide Blackout					
2011	Data normalized to exclude the 03/04/11 Labor Work Stoppage					
	Data normalized to exclude the 05/02/11 - 05/03/11 Lightning Storm					

Figure 36 shows the CAIDI (all events and normalized) for the past six years. The average duration of a customer's outage in 2012, as normalized, was 83.08 minutes, a 46 percent decrease compared to the normalized 2011 CAIDI of 153.54 minutes. This decrease is a return to typical CAIDI after the March 4, 2011 storm. The normalized 2012 CAIDI is an improvement over the normalized CAIDIs of the past two years and trends toward the normalized levels obtained in 2008 and 2009.

Figure 36 - HECO Customer Average Interruption Duration Index (CAIDI), by Year



Three major events increased the 2012 CAIDI by over three minutes:

- February 20, 2012 – An automobile accident on University Avenue caused outages to 1,310 customers affecting some of them from 40 minutes to 12 hours and nine minutes. Over the duration of the outage, groups of customers were restored and the outage was isolated to a small group of customers that remained out of service until the damaged pole could be replaced.
- March 11, 2012 – High winds in the areas from Kalihi to Kahala caused outages affecting 2,972 customers from one hour and seven minutes to seven hours and 34 minutes.
- September 28, 2012 – A cable fault in Mililani affected about 1,820 customers from 44 minutes to eight hours and 15 minutes. For outages caused by the failure of a cable, customers were restored by switching their electrical service to an alternate source. However,

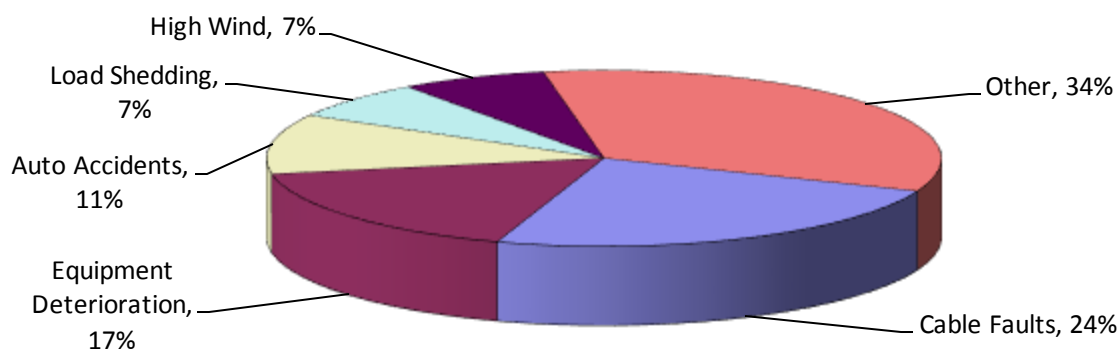
the customers in the direct vicinity of the failed cable needed to wait until repairs were made before their service could be restored.

HECO's top five outage categories for 2012, shown in Table 45 and Figure 37, equate to about 66 percent of the total customer interruptions in 2012.

Table 45 - HECO's Top 5 Outage Causes, 2012

Rank	Outage Category	Sample Causes
1	Cable Faults	Underground equipment failures
2	Equipment Deterioration	Failed, broken, corroded equipment
3	Auto Accidents	Vehicular contact with poles, vaults, and support structures
4	Load Shedding	Loss of generation, major disruptions to distribution
5	High Wind	Objects blown into lines, conductor swing shorts

Figure 37 - HECO 2012 Outage Causes, by Number of Customers Affected



The 34 percent categorized as "other" included trees, animals, and mylar balloon in lines; manual underfrequency load shedding; company and personnel errors; flashovers; construction accidents; scheduled and unscheduled maintenance; lightning; and several other causes. Causes and approximate percentages of normalized sustained customer interruptions are shown in Table 46.

Table 46 - "Other" Causes of HECO Outages, 2012

OUTAGE CAUSE	%	OUTAGE CAUSE	%
Trees/Branches in Lines	4.72%	Foreign Object in Lines	0.40%
Unknown	4.07%	Faulty Equipment Operation	0.34%
Animal in Lines	3.13%	Fire	0.28%
Manual Under Frequency Load Shed	3.06%	Landslide/Flooding	0.22%
Company Switching Error	2.84%	Transformer Failure	0.22%
Contamination Flashover	2.80%	Transform Overload	0.20%
Construction Accident	2.62%	Equip Overload	0.17%
Company Personnel Error	2.39%	Customer Equipment	0.06%
Scheduled Maintenance	2.03%	Moving Equipment Accident	0.05%
Mylar Balloon	1.76%	Transfer Load Maintenance	0.03%
Lightning	1.30%	Vandalism	0.01%
Forced Maintenance	1.28%	Other	0.01%
Overgrown Vegetation	0.65%	System Load Maintenance	0.01%
Flashover	0.44%		

The major outage causes for 2012 and 2011 were similar, except that "Lightning" in 2011 was replaced by "Auto Accidents" in 2012.

The total number of customer interruptions in 2012 was 407,197 compared with 408,326 in 2011. In the six-year period, 2012 was the second worst performing year for the number of interruptions. The number of interruptions due to "Cable Faults" went from 84,523 in 2011 to 88,965 in 2012, a 5 percent increase. The number of customer interruptions due to "Equipment Deterioration" also increased from 55,216 in 2011 to 59,320 in 2012, a 7 percent increase. Outages due to "High Winds" decreased from 57,562 in 2011 to 37,807, a 34 percent decrease. The decrease in outages due to "High Winds" may be attributed primarily to the vegetation management program, which focuses on trimming trees and other vegetation away from the lines, and the second is the pole replacement and overhead line maintenance program.

In 2012, there was one event that resulted in the loss of more than 10,000 customers. On January 5, 2012, the island experienced a load shedding event due to the loss of three generating units, affecting 57,116 customers, or 19 percent of HECO's customers, with outage durations ranging from 14 minutes to three hours.

Figure 38 shows the SAIFI (all events and normalized) for the past six years. It shows that the normalized SAIFI of 1.368 for 2012 was the second worst performance in the past six years, improving slightly from the six-year high in 2011.

Figure 38 - HECO System Average Interruption Frequency Index (SAIFI), by Year

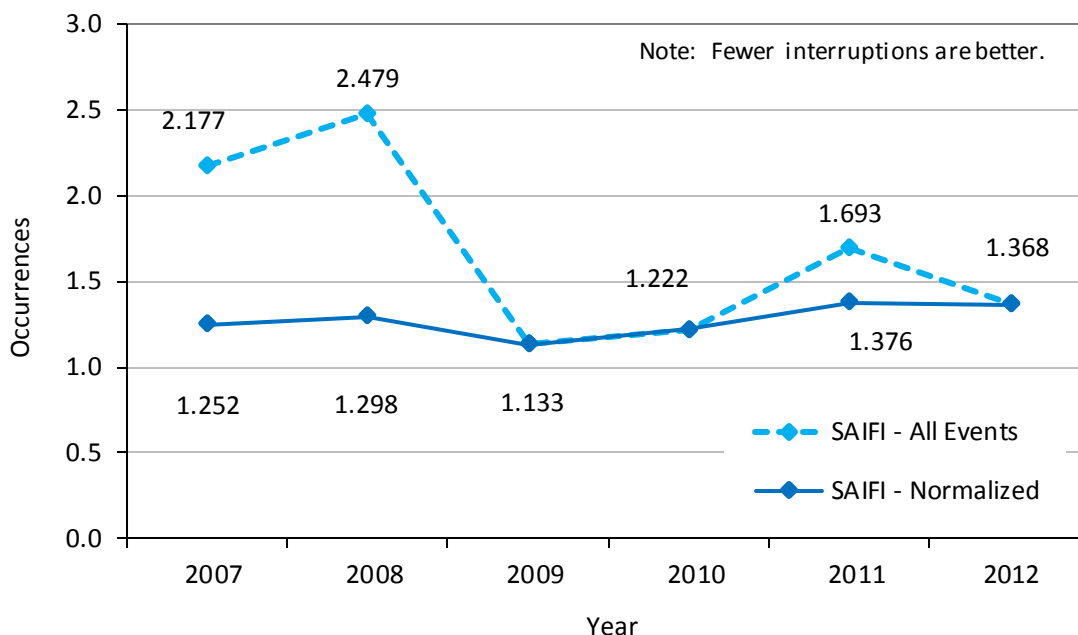
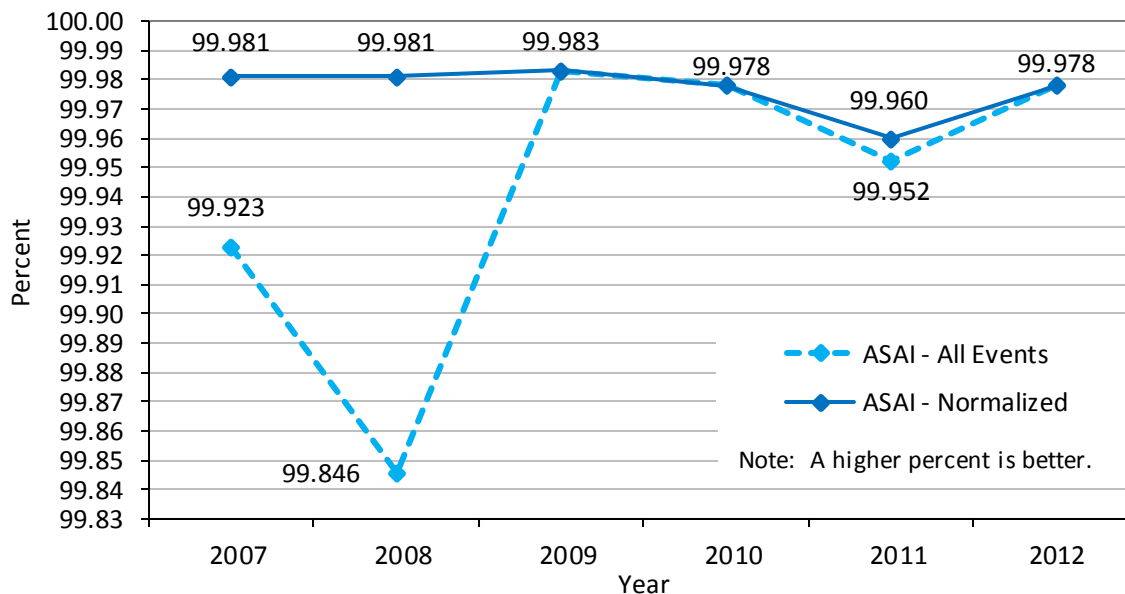


Figure 39 shows that HECO's normalized 2012 ASAI improved, compared to the normalized 2011 results. Approximately 46 percent fewer hours of outages were sustained during 2012 compared to the previous year, raising this statistic from 99.960 percent in 2011 to 99.978 percent in 2012.

Figure 39 - HECO Average Service Availability Index (ASAI), by Year



HELCO

For completeness, the two tables below (Table 47, all events, and Table 48, normalized) are similar to those presented on page 62.

Table 47 - HELCO Annual Service Reliability Indices – All Events

	2007	2008	2009	2010	2011	2012
Number of Customers	77,933	79,386	79,679	80,171	80,807	81,537
Customer Interruptions	257,924	194,807	298,334	302,402	290,616	228,549
Customer-Hours Interrupted	305,681	190,314	246,916	207,607	242,120	190,395
SAIDI (Minutes)	235.34	143.83	185.93	155.3	179.7	140.1
CAIDI (Minutes)	71.11	58.62	49.66	41.19	49.99	49.98
SAIFI (Occurrences)	3.31	2.454	3.744	3.772	3.596	2.803
ASAI (Percent)	99.955	99.973	99.965	99.97	99.966	99.973

Table 48 - HELCO Annual Service Reliability Indices – Normalized

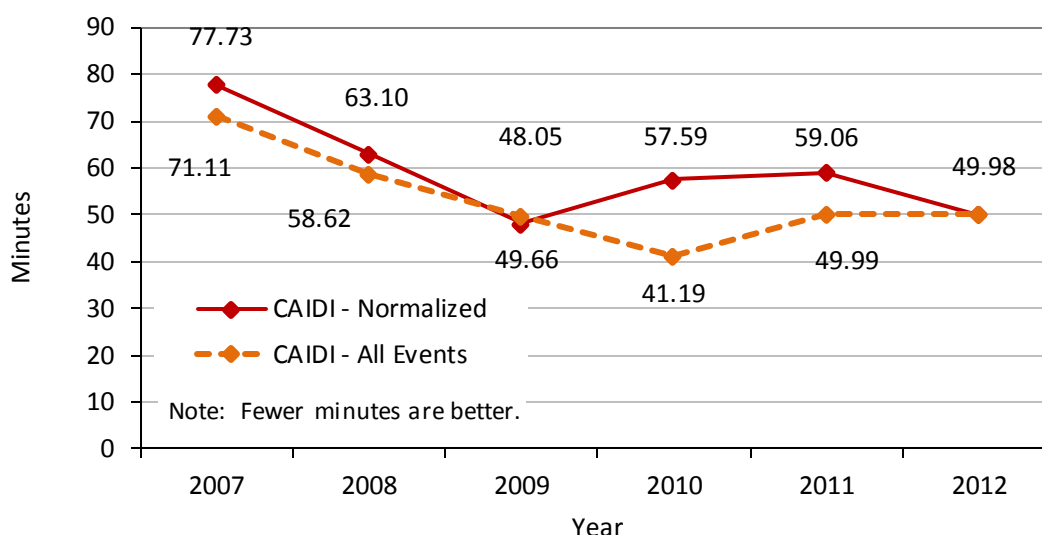
	2007	2008	2009	2010	2011	2012
Number of Customers	77,933	79,386	79,679	80,171	80,807	81,537
Customer Interruptions	208,000	179,862	246,437	176,622	236,688	228,549
Customer-Hours Interrupted	269,475	189,156	197,371	169,522	232,981	190,395
SAIDI (Minutes)	207.47	142.96	148.62	126.8	172.99	140.1
CAIDI (Minutes)	77.73	63.1	48.05	57.59	59.06	49.98
SAIFI (Occurrences)	2.669	2.266	3.093	2.203	2.929	2.803
ASAI (Percent)	99.961	99.973	99.972	99.976	99.967	99.973
<p>2007 Data normalized to exclude the 1/29 high winds event; and 9/25 trip of Hamakua Energy Partners (HEP).</p> <p>2008 Data normalized to exclude the underfrequency loadshedding event on 7/2 due to trip of HEP.</p> <p>2009 Data normalized to exclude the 6/25 transmission line insulator failure; 9/22 trip of Keahole ST-7; and 12/19-20 lightning storm.</p> <p>2010 Data normalized to exclude events due to 1/26 trip of the Puna plant; 4/9 trip of Keahole CT-5, CT-4 and ST-7; 7/3 trip of Keahole CT-5; and 10/27 trip of Keahole CT-4 and HEP.</p> <p>2011 Data normalized to exclude events due to 6/30 trip of Keahole CT-4; 7/16 trip of Keahole CT-5 and ST-7; and 8/2 trip of HEP CT1, CT2, and ST.</p>						

Figure 40 shows the normalized average duration of a customer's outage for 2012 was 49.98 minutes, an improvement of 15 percent from the 2011 normalized CAIDI of 59.06 minutes.

Three major events increased the 2012 CAIDI by over six minutes:

- February 11, 2012 – automobile accident in Kamuela caused an outage affecting 722 customers and 15,644 customer-hours.
- May 29, 2012 – 3100 Line insulator caused an outage affecting 1,299 customers and 6,259 customer-hours.
- September 25, 2012 – fallen tree in Hawaiian Beaches caused an outage affecting 1,498 and 5,332 customer-hours.

Figure 40 - HELCO Customer Average Interruption Duration Index (CAIDI), by Year

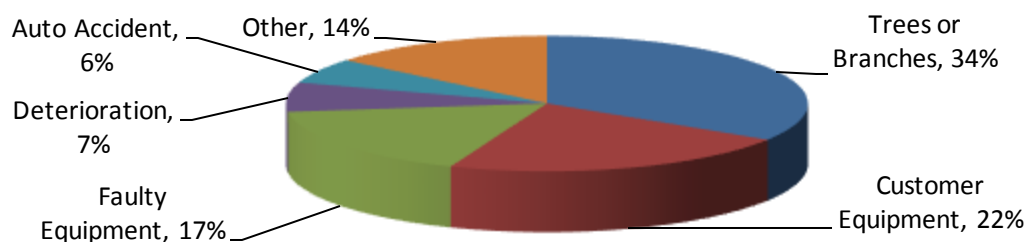


The top 5 outage categories by number of customer affected, shown in Table 49 and Figure 41, equate to about 86 percent of the total customer interruptions in 2012.

Table 49 - HELCO Outage Categories and Sample Causes

Rank	Outage Category	Sample Causes
1	Trees or Branches	Tree or branch contact
2	Customer Equipment	IPP generation load shedding
3	Faulty Equipment	HELCO generation load shedding
4	Deterioration	Rotten poles/cross arms, rusted hardware and insulators, corroded connections
5	Auto Accidents	

Figure 41 - HELCO 2012 Outage Causes



The 14 percent categorized as “other” included scheduled and unscheduled maintenance; cable faults; company and personnel errors; vandalism; people, animals, balloons, and kites in lines; equipment contact; construction; transformer failures and overloads; loose connections; high winds; equipment failure; lightning; and several other causes. Causes and approximate percentages of normalized sustained customer interruptions are shown in Table 50.

In 2012, the HELCO system experienced 12 load shed events: HELCO generation experienced five, Puna Geothermal Ventures experienced two, Hamakua Energy Partners experienced three, and Pakini Nui Wind Farm experienced two load shed events.

Table 50 - "Other" Causes of HELCO Outages, 2012

OUTAGE CAUSE	%	OUTAGE CAUSE	%
Scheduled Maintenance	2.56%	Excavate Construction	0.07%
Unknown	2.16%	Transformer Failure	0.06%
Cable Fault	1.87%	Loose Connection	0.06%
Other Personnel Err	1.78%	High Wind	0.05%
Forced Maintenance	1.10%	Balloon/Kite	0.05%
Vandalism	0.79%	Equipment Failure	0.01%
Flashover	0.64%	Lightning	0.01%
Man or Animal	0.47%	Equipment Overload	0.00%
Equipment Contact	0.32%	Transfer Load	0.00%
Balance Load	0.13%	Transformer Overload	0.00%
Sys Add/Removal	0.08%		

Figure 42 shows the SAIFI (all events and normalized) for the past six years. HELCO’s 2012 normalized SAIFI improved four percent from the 2011 normalized SAIFI. Figure 43, HELCO’s ASAI (all events and normalized) for the past six years, shows that the normalized ASAI values improved from 99.967 percent in 2011 to 99.973 percent in 2012.

Figure 42 - HELCO System Average Interruption Frequency Index (SAIFI), by Year

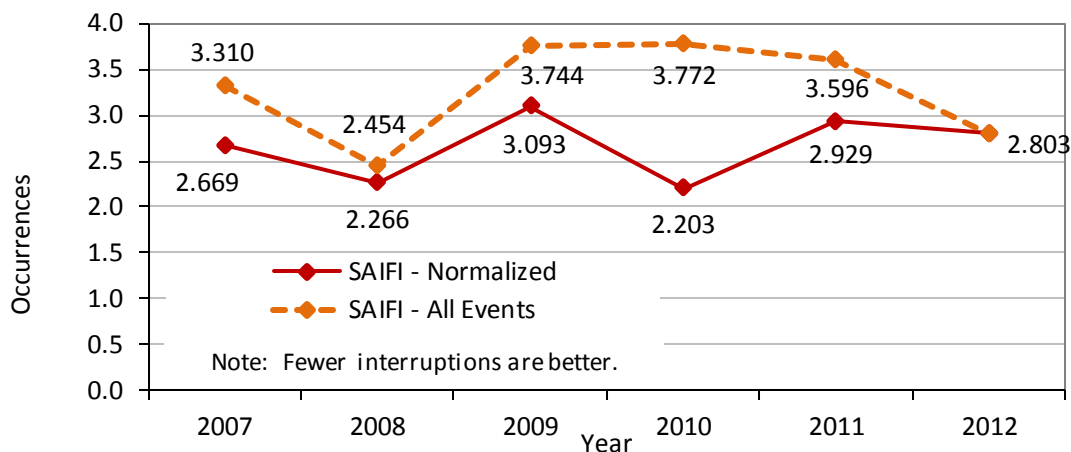
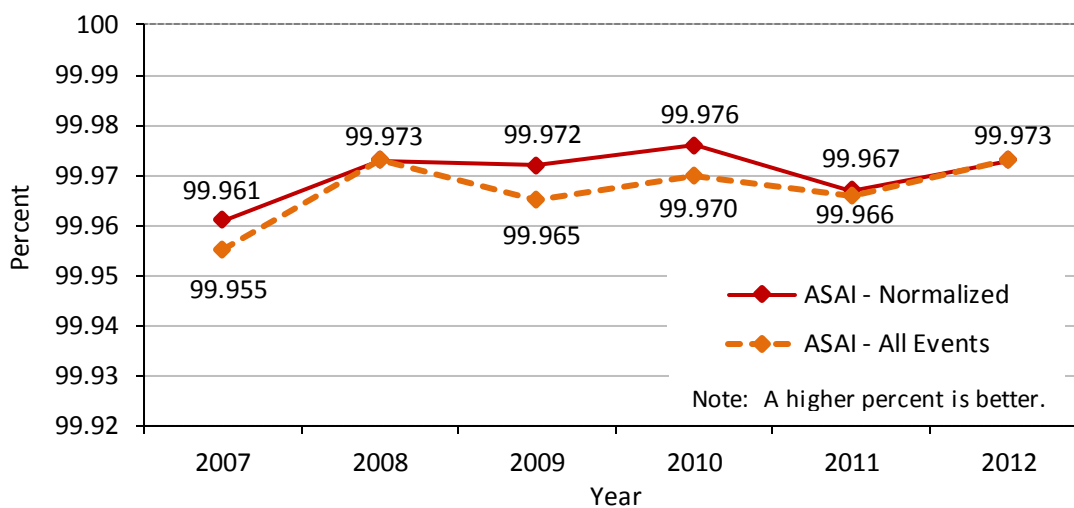


Figure 43 - HELCO Average Service Availability Index (ASAI), by Year



MECO

For completeness, the two tables below (Table 51, all events, and Table 52, normalized) are similar to those presented on page 63.

Table 51 - MECO Annual Service Reliability Indices (All Islands) – All Events

	2007	2008	2009	2010	2011	2012
Number of Customers	65,728	66,810	67,126	67,405	68,010	68,575
Customer Interruptions	240,028	163,120	124,864	131,294	170,379	195,618
Customer-Hours Interrupted	576,110	224,208	195,853	103,416	210,185	248,500
SAIDI (Minutes)	525.90	201.35	175.06	92.05	185.43	217.43
CAIDI (Minutes)	144.01	82.47	94.11	47.26	74.02	76.22
SAIFI (Occurrences)	3.652	2.442	1.860	1.948	2.505	2.853
ASAI (Percent)	99.8997	99.9617	99.9667	99.9824	99.9646	99.9586

Table 52 - MECO Annual Service Reliability Indices (All Islands) – Normalized

	2007	2008	2009	2010	2011	2012
Number of Customers	65,728	66,810	67,126	67,405	68,010	68,575
Customer Interruptions	170,445	75,764	108,368	67,481	101,268	81,428
Customer-Hours Interrupted	177,608	114,001	173,602	60,007	145,711	125,836
SAIDI (Minutes)	162.13	102.39	155.18	53.41	128.55	110.10
CAIDI (Minutes)	62.53	90.29	96.12	53.35	86.33	92.72
SAIFI (Occurrences)	2.593	1.134	1.615	1.001	1.489	1.187
ASAI (Percent)	99.9692	99.9805	99.9705	99.9898	99.9755	99.9791
2007	Data normalized to exclude the 1/29/07 and 12/05/07 Kona storms and various equipment failures and faults on Lanai and Molokai.					
2008	Data normalized to exclude the 3/15/08 flashover; 4/02/08, 8/05/08, and 12/17/08 equipment failures; 8/07/08 deterioration, corrosion; various equipment failures and faults on Lanai and Molokai.					
2009	Data normalized to exclude the 1/16/09 and 6/19/09 high winds; various equipment failures and faults on Lanai and Molokai.					
2010	Data normalized to exclude the 3/28/10 – 4/01/2010 high winds; 6/07/10 flashover; 12/09/10 – 12/10/10 Kona storm; various equipment failures and faults on Lanai and Molokai.					
2011	Data normalized to exclude the 1/10/11 and 12/24/11 high winds; 1/12/11 – 1/14/11 high winds and lightning storm; various equipment failures and faults on Lanai and Molokai.					
2012	Data normalized to exclude the 2/07/12 - 2/08/12 high winds; 9/05/12 operator error; 11/06/12 flashover; 12/04/12 substation fire; various equipment failures and faults on Lanai and Molokai.					

Figure 44 - MECO Customer Average Interruption Duration Index, by Year

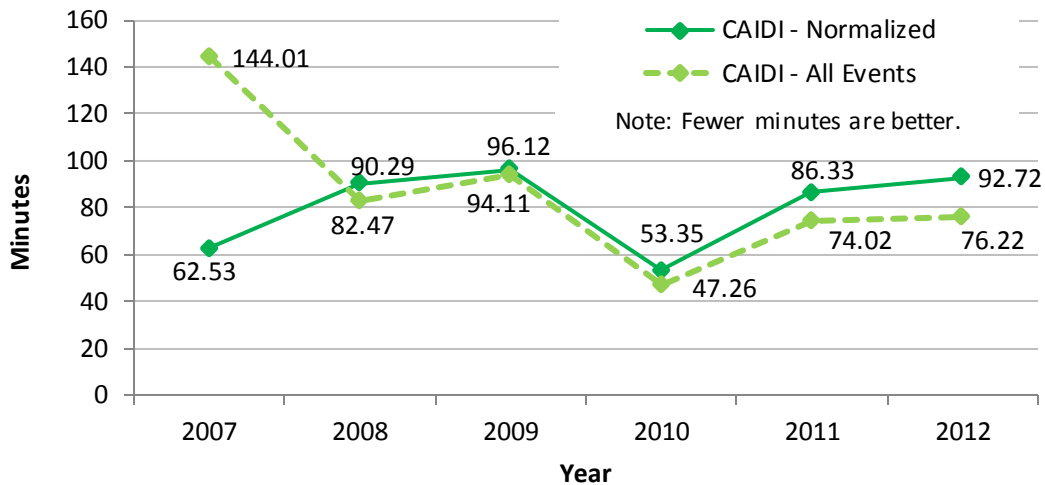


Figure 44 shows that the normalized average duration of a customer outage for 2012 was 92.72 minutes, 7.4 percent worse than the normalized 2011 CAIDI result of 86.33 minutes.

Factors contributing to the increase include: longer outages related to deterioration or corrosion (increased from 19,229.7 customer interruption hours in 2011 to 23,657.0 customer interruption hours in 2012, accounting for 18.8 percent of all customer interruption hours in 2012); scheduled maintenance (increased from 9,914.0 customer interruption hours in 2011 to 14,004.1 customer interruption hours in 2012, accounting for 11.1 percent of all customer interruption hours in 2012); and high winds (increased from 3,886.3 customer interruption hours in 2011 to 5,009.9 customer interruption hours in 2012, accounting for 4.0 percent of all customer interruption hours in 2012).

Three major events, which increased MECO's 2012 CAIDI by over 20 minutes, were:

- January 31, 2012 – A prearranged outage to perform maintenance work on the Hana 23 kV line caused outages affecting 644 customers from ten hours and 47 minutes to 11 hours and 30 minutes.
- August 13, 2012 – A pole fell due to a corroded anchor rod in Pukalani affecting 2,702 customers from one hour and ten minutes to 14 hours and 24 minutes.

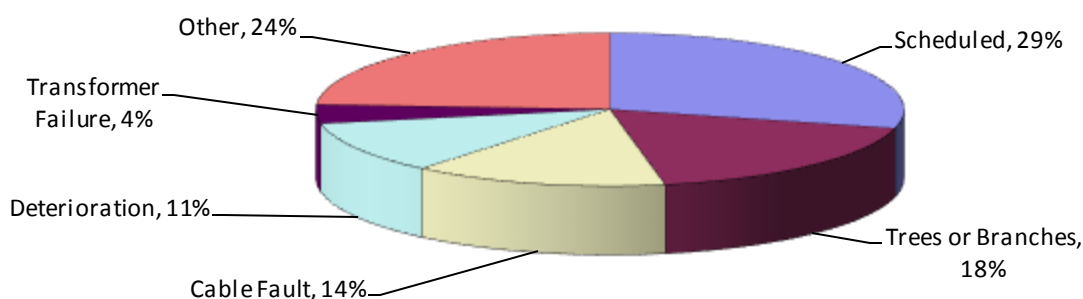
- December 2012 – High winds in areas across Maui and Molokai caused outages affecting 17,548 customers from five minutes to 21 hours and 32 minutes.

The top 5 outage categories by number of customer affected, shown in Table 53 and Figure 45, equate to about 76 percent of the total customer interruptions in 2012. The major causes for 2012 were similar to the 2011 major causes.

Table 53 - MECO Outage Categories and Sample Causes

Rank	Outage Category	Sample Causes
1	Scheduled Maintenance	Replacement of equipment still in service
2	Trees or Branches	Trees falling or contacting overhead lines
3	Cable Faults	Underground equipment failures
4	Deterioration	Failed, broken, corroded equipment
5	Transformer Failure	Transformers failing not related to overloading

Figure 45 - MECO 2012 Outage Causes



The 24 percent categorized as “other” included personnel error; forced, scheduled, and unscheduled maintenance; automobile accidents; people, animals, or other foreign objects in lines or equipment; flashover, high winds, lightning, and fire; transformer failures and overloads; system additions or removals; failures of customer equipment; and several other causes. Causes and approximate percentages of normalized sustained customer interruptions are shown in Table 54.

Table 54 - "Other" Causes of MECO Outages, 2012

OUTAGE CAUSE	%	OUTAGE CAUSE	%
Company Personnel Error	5.77%	Excavation and Construction	0.49%
Forced Maintenance	5.65%	Unknown Failure	0.49%
Automobile Accident	4.56%	Faulty Operation of Equipment	0.42%
Scheduled Maintenance	3.42%	Foreign Object in Line or Equipment	0.30%
Man or Animals In Line or Equipment	3.41%	Equipment Overload	0.10%
Flashover	3.04%	Fire	0.08%
Operator or Switching Error	1.67%	Failure of Customer's Equipment	0.04%
High Winds	1.59%	Contact by Moving Equipment	0.01%
Transformer Failure	0.77%	Transform Overload	0.01%
Lightning	0.76%	Loose Connection	0.01%
System Additions or Removals	0.62%		

The total number of customer interruptions in 2012 was 81,428 compared with 101,268 interruptions in 2011. In the six-year period, 2012 was the third-best performing year for the number of interruptions. The number of customer interruptions due to flashovers decreased 77.4 percent, from 10,975 in 2011 to 2,477 in 2012. The number of customer interruptions due to man or animal interference with equipment decreased 69.3 percent, from 9,033 in 2011 to 2,777 in 2012. However, the number of customer interruptions due to the interruption to balance load increased from 0 in 2011 to 6,356 in 2012, as did the number of customer interruptions due to other company personnel errors, which increased from 242 in 2011 to 4,695 in 2012.

In 2012, there were six events that resulted in the loss of more than 10,000 customers.

- On January 26, 2012, Maui experienced a load shedding event due to the loss of a generating unit. This event caused 11,844 customers (17 percent of MECO customers) to experience outages from nine minutes to 30 minutes.
- On March 1, 2012, Maui experienced a load shedding event due to the loss of a generating unit. This event caused 26,295 customers (38 percent of MECO customers) to experience outages from eight minutes to three hours and 25 minutes.

- On September 5, 2012, Maui experienced a major outage due to an operator error while testing relays. This event caused 13,093 customers (19 percent of MECO customers) to experience outages from 14 minutes to 51 minutes.
- On November 6, 2012, Maui experienced a load shedding event due to the loss of two generating units. This event caused 16,280 customers (24 percent of MECO customers) to experience outages from seven minutes to 51 minutes.
- On November 24, 2012, Maui experienced a major outage due to incorrect relay settings while energizing the Auwahi wind farm substation. This caused 10,453 customers (16 percent of MECO customers) to experience outages from nine minutes to one hour and 46 minutes.
- On December 13, 2012, Maui experienced a major outage due to the loss of the Kanaha to Kula transmission line. This event caused 16,260 customers (24 percent of MECO customers) to experience outage durations ranging from five minutes to 20 minutes.

Figure 46 shows that the normalized 2012 SAIFI of 1.187 was the third-best performance in the past six years, improved from the 2011 normalized SAIFI of 1.489.

The contributing factors to the decrease of the SAIFI from 2011 were fewer outage interruptions related to flashovers (10,975 in 2011; 2,477 in 2012; 0.3 percent of all hours of customer interruption in 2012); man or animal interference with lines or equipment (9,033 in 2011; 2,777 in 2012; 1.6 percent of all hours of customer interruption in 2012); and transformer overload (4,705 in 2011; eight in 2012; 0.01 percent of all hours of customer interruption in 2012).

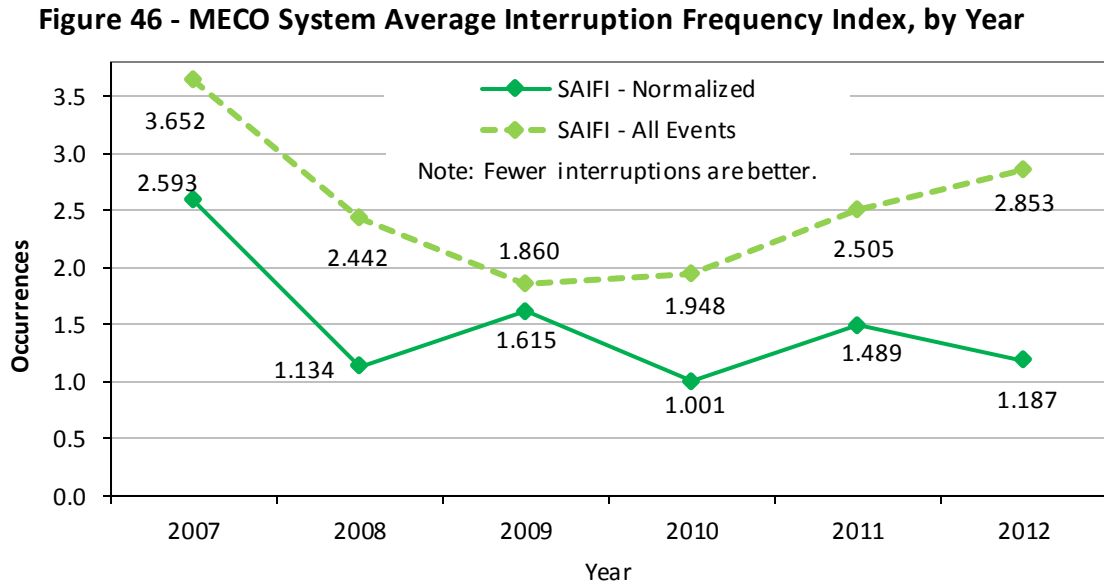
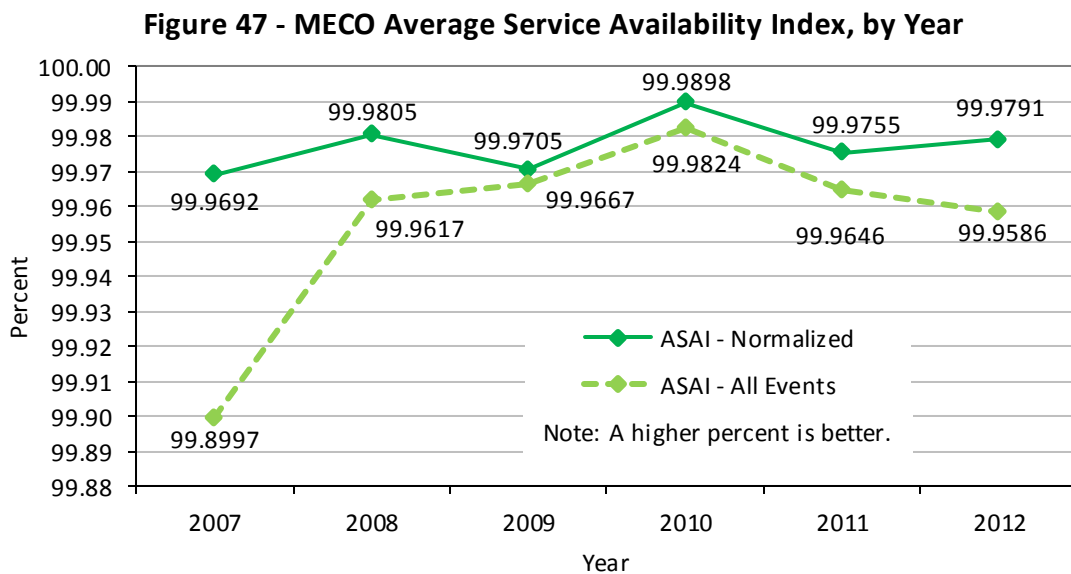


Figure 47, MECO's ASAI (all events and normalized) for the past six years, shows that the normalized ASAI improved from 99.9755 percent in 2011 to 99.9791 percent in 2012; a 14 percent reduction in hours of service interruption during 2012 compared to 2011.



Factors that contributed to the improvement of the ASAI in 2012 from 2011 were a reduction of customer hour interruptions related to equipment failure in lines (17,761.1 in 2011; 7,945.8 in 2012; 6.3 percent of all customer interruption hours in 2012); transformer overload (5,307.7 in 2011; 37.1 in 2012; 0.01 percent of all customer interruption hours in 2012); and automobile accidents (13,548.5 in 2011; 8,939.4 in 2012; 7.1 percent of all customer interruption hours in 2012).

KIUC

Figure 48 shows KIUC's CAIDI for the past six years. The 2012 CAIDI of 44.20 minutes was the highest (worst) of the period. Figure 49 shows that KIUC's SAIFI in 2012 was the best of the past six years.

Figure 48 - KIUC Customer Average Interruption Duration Index (CAIDI), by Year

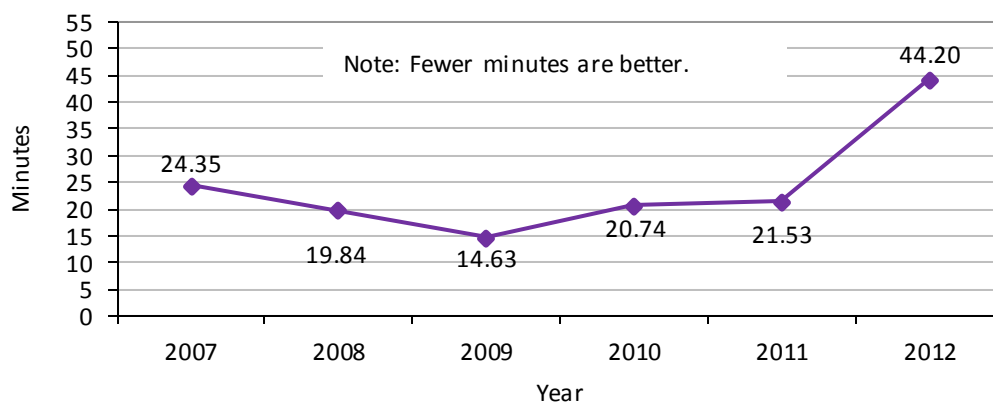


Figure 49 - KIUC System Average Interruption Frequency Index (SAIFI), by Year

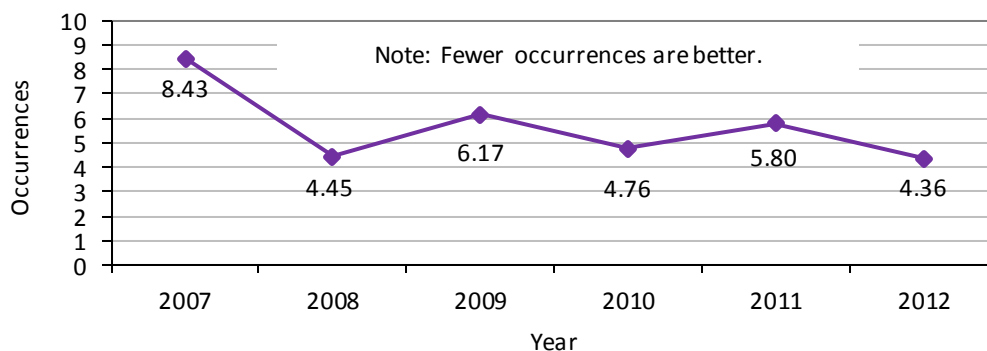
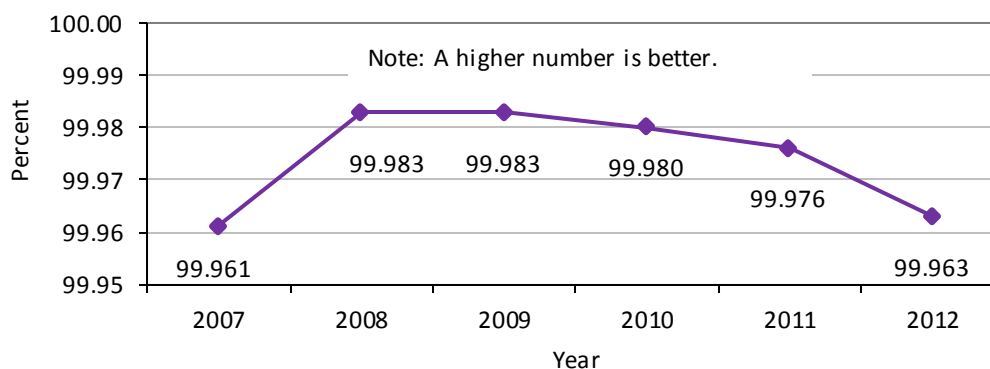
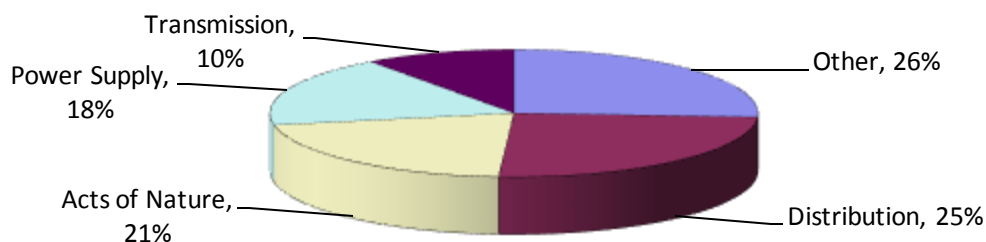


Figure 50 shows the ASAI for the past six years. The 2012 ASAI of 99.963 percent is lower (worse) than the previous four years, but slightly better than the 99.961 level in 2007.

Figure 50 - KIUC Average Service Availability Index, by Year

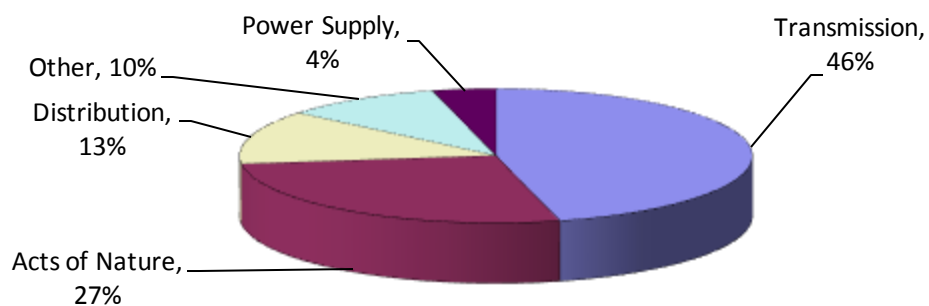
In the following figures and table, the most recent year's sustained interruption causes are presented. Interruptions can be broken down many ways. The charts show causes by frequency (what caused the highest number of interruptions) and causes by magnitude (what caused the most severe interruptions). Interruptions by frequency are shown in Figure 51. Sample causes for each category are described in Table 55.

Figure 51 - KIUC 2012 Sustained Interruptions by Frequency**Table 55 - KIUC Outage Categories Ranked by Frequency, with Sample Causes**

Rank	Outage Category	Sample Causes
1	Other	Auto accidents that contact utility poles or wires, non-KIUC contractors such as construction crews that dig into underground cables, tree trimmers that contact overhead wires, and trees that contact wire due to overgrowth
2	Distribution	Failure or malfunction of distribution equipment including cables, fuses, insulators, poles, and transformers
3	Acts of Nature	High winds, floods, storms
4	Power Supply	Generating unit problems that result in a reduction of output, causing an under-frequency load shed
5	Transmission	Failure or malfunction of transmission equipment including insulators, large transformers, lightning arrestors, and switches

Figure 52 shows the breakdown by magnitude. The same descriptions and examples that were described in Table 55 also apply for Figure 52. The causes of severe interruptions, in order from most to least are “Transmission,” “Acts of Nature,” “Distribution,” “Other,” and “Power Supply.”

Figure 52 - KIUC 2012 Sustained Interruptions by Magnitude



Utility Gas Pricing and Revenues – Additional Information

Table 56 - Utility Gas Customers, Therms, and Revenues, by Island, 2012⁹⁵

	Island	12-Month Average Number of Consumers	Total Therms Sold During Year	Net Revenue Received During Year (\$)	Net Income Received During Year (\$)	Average Net Revenue per Therm Sold (\$)	Average Net Income per Customer (\$)	% of Total Revenue Received
Oahu	Residential	28,622	4,080,929	\$23,321,304		\$5.71		17%
	Non-Residential	3,254	25,814,160	\$110,937,158		\$4.30		83%
	Total	31,876	29,895,089	\$134,258,462	\$11,667,850	\$4.49	\$ 366	
Hawaii	Residential	1,470	296,286	\$ 1,483,019		\$5.01		20%
	Non-Residential	309	2,067,192	\$ 5,916,688		\$2.86		80%
	Total	1,779	2,363,478	\$ 7,399,707	\$(549,251)	\$3.13	\$ (309)	
Maui	Residential	427	111,024	\$458,482		\$4.13		17%
	Non-Residential	89	776,565	\$ 2,168,776		\$2.79		83%
	Total	516	887,589	\$ 2,627,258	\$ 51,887	\$2.96	\$ 101	
Molokai	Residential	89	15,598	\$ 74,013		\$4.75		98%
	Non-Residential	-	-	\$ 1,608		\$ -		2%
	Total	89	15,598	\$ 75,621	\$ (1,653)	\$4.85	\$ (19)	
Lanai	Residential	21	2,308	\$ 13,065		\$5.66		99%
	Non-Residential	-	-	\$ 126		\$ -		1%
	Total	21	2,308	\$ 13,191	\$(20,373)	\$5.72	\$ (970)	
Kauai	Residential	872	94,928	\$486,948		\$5.13		73%
	Non-Residential	16	60,676	\$184,071		\$3.03		27%
	Total	888	155,604	\$671,019	\$ 55,403	\$4.31	\$ 62	
State Total	Residential	31,501	4,601,073	\$25,836,831		\$5.62		18%
	Non-Residential	3,668	28,718,593	\$119,208,427		\$4.15		82%
	Total	35,169	33,319,666	\$145,045,258	\$11,208,863	\$4.35	\$ 319	

⁹⁵From Annual Financial Reports.