

**STATE OF HAWAII**  
**PUBLIC UTILITIES COMMISSION**

**ANNUAL REPORT**  
**FOR**  
**FISCAL YEAR 2014**  
**(July 1, 2013 – June 30, 2014)**

**JANUARY 2015**



# Executive Summary

Affordable and 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 State of Hawaii ("State") Public Utilities Commission ("Commission" or "PUC") 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") 2014, the Commission regulated 1,625 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 2014 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 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 by ensuring accessibility, fairness and the opportunity for all ratepayers to benefit from clean energy policies; and
4. Align and fairly allocate the risks, costs, and incentives involved in developing a diverse energy resource mix via the utility rate recovery process.

## Electricity Sector

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

As shown in Figure ES1, Hawaii has diversified its electricity (including efficiency) resources significantly over the past 11 years.

**Figure ES1 Reduction of Dependence on Fossil Fuels for Electricity,  
from 91% in 2003 to 72% in 2013**



Source: Renewable Portfolio Standard reports submitted to the Commission by HECO and KIUC, and (adjusting to include efficiency) KIUC's Annual Fuel Mix

Customer-sited renewable energy systems continued to increase substantially. As of December 31, 2013, 234.4 megawatts (38,758 systems, mostly photovoltaic) had been installed on the Oahu (HECO), Maui County (MECO), and Big Island (HELCO) systems. However, interconnection of distributed generation systems in 2014 have slowed compared to recent years. As of September 2014, more than 5,000 customers, mostly on Oahu, have been in an interconnection queue with more than half waiting more than six months to interconnect. The Commission has opened several docketed proceedings to investigate and resolve these issues.

The importation and use of liquefied natural gas ("LNG") is a key component of the fuel supply plans for both Hawaii Gas and the HECO Companies. In April 2014, Hawaii Gas received its first shipment of LNG, and has requested approvals from the PUC to import LNG sufficient to supply about 30% of its Oahu utility gas needs (see Docket No. [2014-0315](#)). The HECO Companies announced parallel efforts to import containerized and, eventually, bulk LNG. However, the HECO Companies have not yet filed any formal applications to do so.

In the Public Benefits Fee funded Hawaii Energy Efficiency Program, the \$32 million spent in FY 2014 provided an estimated 1.7 billion kilowatt-hours of lifetime energy savings and a peak demand reduction of 17.8 megawatts.

In April 2014, the PUC rejected the HECO Companies' Integrated Resource Plan and issued four major decisions and orders, and a white paper that provides key policy, resource planning, and operational directives to the HECO Companies, and required the companies to develop and implement major improvement action plans to aggressively pursue energy cost reductions, proactively respond to emerging renewable energy integration challenges, and improve the interconnection process for customer sited solar photovoltaic systems.

Dockets relevant to the State's strategic objectives in energy included those relating to: the HECO Companies' Power Supply Improvement Plans ([2014-0183](#)); the distributed energy resource policies; ([2014-0192](#)); investigating whether an Oahu-Maui interisland transmission system may be in the public interest ([2013-0169](#)); demand response ([2007-0341](#)); review of decoupling mechanisms ([2013-0141](#) and [2014-0016](#)); on-bill financing ([2014-0129](#)); and others, listed beginning on page 22.

## Utility Gas

Although the number of utility gas customers declined by 0.914 percent between 2008 and 2013, gas sales over the same period increased 0.006 percent, from 33.1 million to 33.3 million therms. The capital expenditure forecast by Hawaii Gas is for a total of \$49.5 million over the five-year period of 2014-2018. These estimates are preliminary, as any major expenditure must be approved by the Commission in advance.

The importation and use of liquefied natural gas ("LNG") is a key component of the fuel supply plans for both Hawaii Gas and the HECO Companies. In April 2014, Hawaii Gas received its first shipment of LNG, and has requested approvals from the PUC to import LNG sufficient to supply about 30% of its Oahu utility gas needs (see Docket No. [2014-0315](#)). The HECO Companies announced parallel efforts to import containerized and, eventually, bulk LNG. However, the HECO Companies have not yet filed any formal applications with the Commission to do so.

## 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. Selected dockets are summarized on page 56.

## Telecommunications

The Commission oversees 187 telecommunications providers. In FY 2014, 19 new telecommunication service providers received approval to provide services in Hawaii. Selected dockets are summarized on page 58.

## Transportation: Water Carriers

The Commission regulates four water carriers. Selected dockets are provided on page 61.

## Transportation: Motor Carriers

The Commission regulates 859 passenger and 532 property carriers. During FY 2014, new certificates or permits were issued to 93 new passenger carriers and 19 new property carriers. Overall, the number of passenger carriers increased and property carriers decreased.

## Hawaii One Call Center

The Commission operates a One Call Center by contract to coordinate the location of subsurface installations, including underground utilities and to provide advanced notice of proposed excavation to the operators of those systems. In FY 2014, the number of calls from excavators increased by about 22 percent, and requests transmitted to facility operators increased by 25 percent, compared to the previous year.

## Enforcement Activities

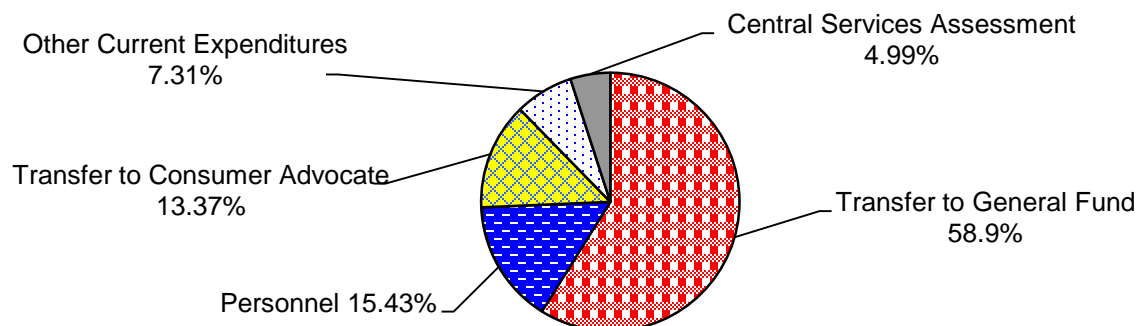
There was one formal complaint and there were 118 written informal complaints processed in FY 2014. The Commission issued \$9,000 in civil citations and revoked 53 motor carrier certificates.

## 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. In FY 2014, total Special Fund revenues were \$22,924,028. The majority, 92.4 percent, came from public utility fees; 6.7 percent came from motor carrier fees, 0.3 percent came from One Call Center fees, 0.3 percent came from other sources, and 0.2 percent came from motor carrier interest and penalties.

As shown in Figure ES2, of the total FY 2014 Special Fund revenues, Commission direct expenditures (personnel and other current expenditures), accounted for only 22.74 percent.

**Figure ES2 Public Utilities Commission Special Fund  
FY 2014 Expenditures and Transfers**





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# Introduction

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

The State of Hawaii ("State") Public Utilities Commission ("Commission" or "PUC") was established in 1913.<sup>1</sup> The Commission's primary duty is to protect the public interest by overseeing and regulating public utilities to ensure that they provide reliable service at just and reasonable rates.

The Commission regulates 1625 entities, which includes 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. See Figure 1. 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).

**Figure 1: Entities Regulated by the PUC**

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 Telcom	186 Wireless and Wireline Companies	38 Private Water and Sewer Companies	Excavators / Owners of subsurface facilities

The Commission has offices on four islands.

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**Email:** [Hawaii.PUC@hawaii.gov](mailto:Hawaii.PUC@hawaii.gov)

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

## Commissioners

Hawaii's three Commissioners during FY 2014 are:

### **Hermína Morita, Chair**

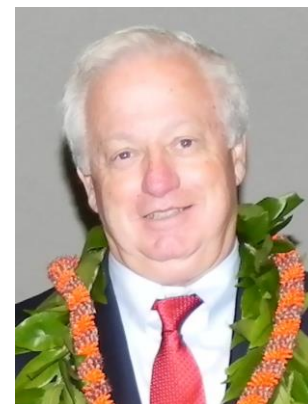
Hermína Morita was appointed to the Public Utilities Commission and named Chair of the Commission on February 3, 2011 by Governor Neil Abercrombie for a term to expire on June 30, 2014. During Fiscal Year 2015, Chair Morita retained her appointment on a holdover status and left the Commission in January 2015.



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 H. Akiba, Commissioner**

Lorraine Akiba was appointed to the Commission in January 2012 by Governor Neil Abercrombie to a term that expires on June 30, 2018. Prior to her 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 Bachelor of Arts in political science.

# Goals and Objectives of the Commission

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## 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

The long term goals are:

- 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; and
- Allow and enable the use of indigenous, renewable, and cost-effective energy resources.

## Short-Term Goals

The short term goals are:

- 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 to increase the efficiency of the Commission and regulated entities; and
- Re-evaluate and update internal Commission staff procedures to increase the efficiency and effectiveness of Commission activities.

## Strategic Objectives in Energy

The 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 costs by ensuring accessibility, fairness and the opportunity for all ratepayers to benefit from clean energy policies; and
4. Align and fairly allocate the risks, costs, and incentives involved in developing a diverse energy resource mix via the utility rate recovery process.

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 is necessary 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.<sup>2</sup> To evaluate Hawaii's energy options and implement State laws in support of Hawaii's energy objectives, simultaneous dockets, analyses, and activities include:

<b>PUC Directives to the Hawaiian Electric Companies</b>	On April 28, 2014, the Commission issued four decisions and orders providing key policy, resource planning, and operational directives to the Hawaiian Electric Companies ("HECO Companies"), <sup>3</sup> which require the companies to develop and implement major improvement action plans to aggressively pursue energy cost reductions, proactively respond to emerging renewable energy integration challenges, and improve the interconnection process for customer sited solar photovoltaic systems. More information about the PUC directives to the HECO Companies may be found on page 30.
<b>Energy Efficiency Portfolio Standards</b>	The Energy Efficiency Portfolio Standards ("EEPS") require 4300 gigawatt-hours of electricity use reduction by 2030. More information about EEPS may be found on page 27.
<b>Renewable Portfolio Standards</b>	The Renewable Portfolio Standards ("RPS") require that a minimum of 40% of Hawaii's electricity be from renewable sources by the end of 2030. Interim standards are 15% by the end of 2015 and 25% by the end of 2020. More information about the RPS may be found on page 26.
<b>Natural Gas</b>	The importation and use of liquefied natural gas ("LNG") is a key component of the fuel supply plans for both Hawaii Gas and the HECO Companies. More information on the importation of LNG may be found on page 51.
<b>Investigating the Inter-connection of Island Electrical Grids</b>	In FY 2014, the Commission opened a proceeding (Docket <a href="#">2013-0169</a> ) 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 (generally, photovoltaic) systems are 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.

<sup>2</sup> [HRS §226-18](#).

<sup>3</sup> The HECO Companies are comprised of Hawaiian Electric Company, Inc. (HECO), serving the island of Oahu; Maui Electric Company, Limited (MECO), serving the islands of Maui, Lanai and Molokai; and Hawaii Electric Light Company, Inc. (HELCO), serving Hawaii Island.

### **3. Provide more options for customers to manage their electricity bills and reduce costs by ensuring accessibility, fairness and the opportunity for all ratepayers to benefit from clean energy policies.**

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:

#### **Demand Response**

Demand response (“DR”) programs allow customers to reduce energy cost by managing when energy is used. Customers may also 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. The use of DR programs may delay or eliminate the need for new fossil generating units, assist the utility in utilizing more renewable energy resources, and help the utility operate its system efficiently and at a lower cost. These measures can help to lower customer bills and to achieve the State’s renewable energy goals. In an order and policy statement, the Commission directed the HECO companies to file an Integrated Demand Response Portfolio Plan to review their current DR programs, develop detailed estimates of DR potential, and consolidate their programs into a single integrated portfolio. More information about the IDRPP may be found on page 31.

#### **Bill Saver Program**

The on-bill financing program (Docket No. [2011-0186](#)), known as “Bill Saver,” is designed for renters and other utility customers who would otherwise be unable to afford permanently-installed energy saving and renewable energy systems by attaching payments for approved energy improvements on their utility bill. Under the program, monthly payments for the equipment would be less than the value of electricity saved. The Bill Saver Program, has plans to launch in FY 2015. More about the Bill Saver Program information may be found on page 42.

### **4. Align and fairly allocate the risks, costs, and incentives involved in developing a diverse energy resource mix via the utility rate recovery process.**

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. These activities are addressed through dockets such as:

#### **Decoupling**

Decoupling mechanisms modify the traditional model of ratemaking for electric utilities by separating the company’s revenues and profits from electricity sales. Removing this linkage is intended to remove the disincentive for the electric utilities to aggressively pursue Hawaii’s clean energy objectives. Rexamination of the existing decoupling mechanism is currently underway in Docket No. [2013-0141](#) for the HECO Companies. In Docket No. [2014-0016](#), KIUC has proposed to establish its own decoupling mechanism.

### HECO Companies' Rate Cases

A rate case is a formal process in which a utility sets the rates it charges its customers for the utility's service. Authorized rates of return are set by the Commission. In a major decision in Maui Electric Company's ("MECO") 2012 test year rate case (Docket No. [2011-0092](#)), the Commission ordered MECO to file a Power Supply Improvement Plan ("PSIP") to address critical power supply resource issues in order to accommodate large amounts of variable renewable energy, reduce power supply costs, and provide significant customer relief. Additionally, PSIPs for each of the HECO Companies were ordered in Docket Nos. [2012-0036](#), [2011-0206](#), and [2012-0212](#). More information about the PSIPs may be found on page 30.

### Distributed Energy Resources

Distributed energy resources are small-scale power generation sources located close to where electricity is used that provide an alternative to or an enhancement of the traditional electric power grid. In the *Commission's Inclinations on the Future of Hawaii's Electric Utilities* ("white paper," see page 32), the PUC articulated guidance with respect to system planning and the future of development of new system projects on Hawaii's electric grids, including the utilization of advanced DER technologies to mitigate adverse grid impacts. Docket No. [2014-0192](#) was opened to investigate various DER technical, economic and policy issues and to receive the HECO Companies' Distributed Generation Interconnection Plan ("DGIP"), ordered in Docket No. [2011-0206](#). More information about the DGIP may be found on page 31.

## Plans

- Address space constraints and staffing.

To effectively and efficiently carry out the important work of the Commission, the Commission needs to be fully staffed. Space constraints are being addressed, which will enable the staffing plan to proceed. More information is provided in the administrative update section, beginning on page 8.

- 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

The Commission has been significantly impacted over the last several years by a number of legislative proposals seeking to make major changes to Hawaii's regulatory system, particularly in the area of energy regulation. Furthermore, new and emerging technologies are bringing issues to the forefront that range from the need to modernize Hawaii's electrical grids to the potential regulation of novel ridesharing company operations in the motor carrier space. In order to respond to the impact of these disruptive technologies, the Commission has taken various regulatory level actions – including a number of significant actions during the past fiscal year – to address existing concerns and to proactively consider other impending utility-focused challenges. For example, the Commission issued a set of landmark orders on April 28, 2014 ("April 28 Orders") requiring the Hawaiian Electric Companies to revamp the approach those companies have taken in providing energy service to the vast majority of Hawaii's ratepayers. The Commission continues to oversee the actions being taken by the HECO Companies as a result of the April 28 Orders so as to accomplish four major energy



objectives: (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 by ensuring accessibility, fairness, and the opportunity for all ratepayers to benefit from clean energy policies; and (4) align and fairly allocate the risks, costs, and incentives involved in developing a diverse energy resource mix via the utility rate recovery process. It is the Commission's aim to solve these and other pressing regulatory issues by utilizing the existing authority provided to it by the Legislature and within the scope of the current law.

Recruitment efforts to fill both vacant and newly established positions up to authorized staffing levels in order to manage and address the growing complexity of regulatory issues continues to be a major priority for the Commission. Significant progress has been made through the Legislature's continued budgetary support for expanded staffing and the completion of the Commission's Oahu office renovation and expansion project's final phase in the coming years. This budgetary support represents key investments made to ensure that the Commission can respond to Hawaii's evolving regulatory environment. In recent months, the processing of the Commission's administrative reorganization plan is proceeding – a fundamental step towards internally restructuring the Commission to increase staffing levels and operational capabilities. Approval of the Commission's reorganization plan is also a critical step forward in the process of administratively transferring the Commission from the Department of Budget and Finance to the Department of Commerce and Consumer Affairs, as required by Act 108, Session Laws of Hawaii 2014. The law allows for a one-year transition period running through the 2015 fiscal year, during which time the Commission and other affected agencies are to work together to ensure the smooth and complete transfer of the Commission. The achievement of these organizational milestones have been a priority for the Commission, with the consistent support of the Legislature to boost its effectiveness as a regulatory agency.

Thus, aside from the Legislature's continued support of the Commission's internal restructuring, the Commission does not have any major recommendations for legislation or executive action at this time.

## Administrative Update

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In FY 2014, Act 108, SLH 2014 (“Act 108”), requires the Commission to transition from its current administrative status within the Department of Budget and Finance to be administratively attached to the Department of Commerce and Consumer Affairs, and strengthens the Commission’s internal management capacity with the establishment of three (3) new administrative positions:

- 1) An Executive Officer to oversee and manage the administrative functions and tasks of the Commission;
- 2) A position focused on personnel matters to assist the Executive Officer with the personnel support functions of the Commission; and
- 3) A position focused on fiscal matters to assist the Executive Officer with the budget, fiscal, procurement, and contract administration functions of the Commission.

In FY 2014, the Commission continued to work with the Department of Accounting and General Services Public Works Division Planning Branch and the selected design consultant to finalize plans for the Commission’s office space expansion and renovation project (“Project”) in the State’s Kekuanaoa Building. Completion of this Project will provide the Commission with adequate office space to efficiently accommodate all of the positions authorized as part of the Commission’s administrative reorganization pursuant to Act 177, SLH 2007, and as modified by Act 108. The Project began in FY 2012 and is scheduled to be completed by the end of FY 2017.

Due to the Commission’s current office space limitations mentioned above, the Commission was required to prioritize recruiting efforts throughout FY 2014. Thus, the Commission focused recruitment efforts on filling key reorganization positions, while also backfilling existing positions. During FY 2014, the following Commission positions were filled:

- 1 Office Assistant IV;
- 1 Chief Engineer;
- 4 Attorneys;
- 2 Research Assistants; and
- 1 Enforcement Officer.

Grant funding received by the Commission from the American Recovery and Reinvestment Act of 2009 (“ARRA”) expired on August 30, 2013. Final grant reports were filed in November and December of 2013. Overall, the ARRA grant allowed for 45 training sessions/workshops for the Commission’s professional staff which increased the staff’s 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; American Council for an Energy Efficient Economy; National Renewable Energy Laboratory; and Electric Utility Consultants, Inc., among others.



## **Administrative Transfer of the Public Utilities Commission**

Act 108, Session Laws of Hawaii 2014, (“Act 108” or “PUC Transfer Law”) provided for the administrative transfer of the Public Utilities Commission from the Department of Budget and Finance (“DBF”) to the Department of Commerce and Consumer Affairs (“DCCA”) effective July 1, 2014. The Legislature, recognizing the major transformation the Commission has been undergoing with respect to the increasing level and complexity of its regulatory responsibilities, passed the PUC Transfer Law in order to link the Commission with a department more closely aligned with the Commission’s operating mission and philosophy. Additional staffing and resources are appropriated to further support the Commission in carrying out its various responsibilities. The Legislature also contemplated the administrative transfer under Act 108 would result in a Commission operating with greater autonomy in performing its normal day-to-day operations, so as to allow the agency to be more effective and responsive.

As part of this administrative transfer process, the PUC Transfer Law allows for a one-year transition period during which time the Commission and other affected agencies are to work together to ensure the smooth and complete transfer of the Commission required by Act 108. This one-year transition period runs through the 2015 fiscal year (July 1, 2014 – June 30, 2015).

### **PUC Transfer Law Update for the First Half of Fiscal Year 2015**

Prior to and following the enactment of Act 108, the Department of Commerce and Consumer Affairs, the Department of Budget and Finance, and the Commission have worked in close coordination to carry out the Commission’s administrative transfer within the timeframe contemplated in the PUC Transfer Law.

The Commission’s reorganization plan was finalized after being reviewed and approved by various agencies and employee representatives, including DBF, DCCA, and the Hawaii Government Employees Association. The approval of the Commission’s reorganization plan enables the Commission to fill critical administrative management positions established under Act 108, as well as other key positions to strengthen the Commission’s functioning.

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

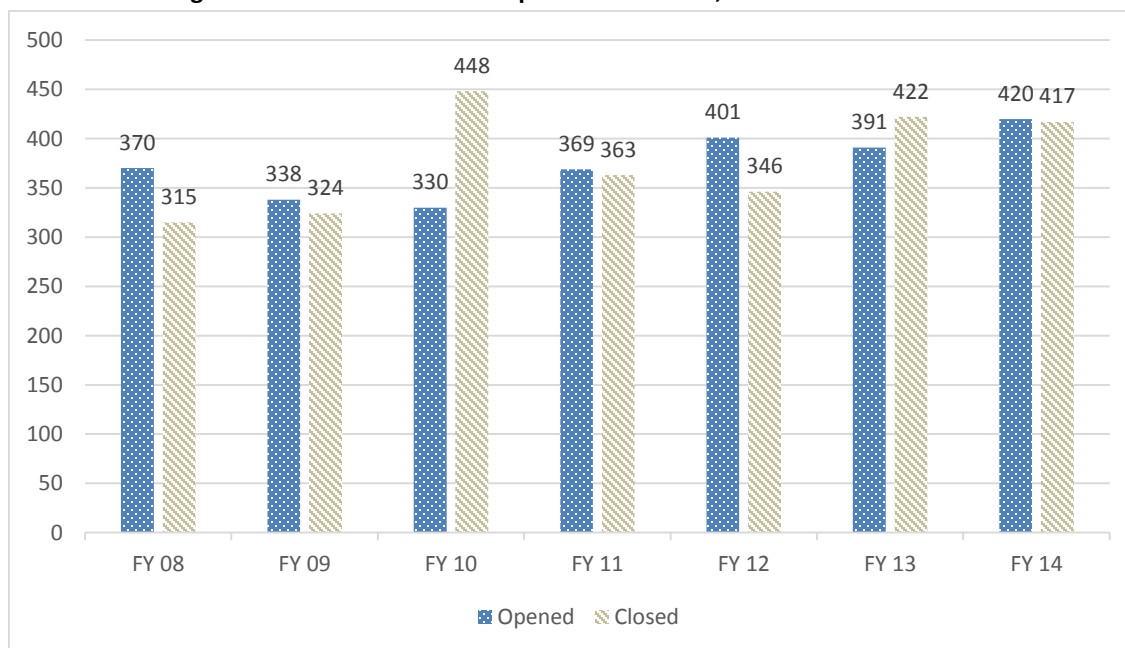
The Commission issued a total of 804 decisions and orders in FY 2014. At the beginning of FY 2014 (July 1, 2014), there were 183 pending dockets<sup>4</sup> that had been opened in previous years. During the fiscal year, an additional 431 new dockets were opened and 417 dockets were completed (closed). As of the end of FY 2014, 186 open dockets remained, to carry over to FY 2015. The number of dockets by type and status are shown in Table 1.

**Table 1 - Public Utilities Commission Dockets**

Sector	Carried over from FY2013	Opened in FY2014	Closed in FY2014	To Carry Forward to FY2015
Electric	50	37	21	66
Gas	1	3	1	3
Telecommunication	29	66	72	23
Water/Sewer	13	6	7	12
Motor Carrier - Passenger	65	220	219	66
Motor Carrier - Property	22	86	95	13
Water Carrier	2	2	2	2
One Call Center	1	0	0	1
<b>TOTAL</b>	<b>183</b>	<b>420</b>	<b>417</b>	<b>186</b>

Brief summaries of selected dockets are provided, by sector, in the “Actions by Sector” chapter of this report. Docket filings, decisions, and orders are available from the Commission <http://puc.hawaii.gov> and Document Management System (“DMS”) websites, <http://dms.puc.hawaii.gov/dms>. Non-docketed filings in calendar year 2013 are under docket number 2013-0000 and those from calendar year 2014 are under docket number 2014-0000.

**Figure 2 - Number of Dockets Opened and Closed, Fiscal Years 2008-2014**



<sup>4</sup> Regulatory proceedings are conducted in a formal docket process. For more on the process, see laws (for example, Hawaii Revised Statutes [Chapter 269](#)); rules (such as those described in Title 6, Chapters 60-83, <http://budget.hawaii.gov/about/adminrules/>); and General Orders.

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## Legislative Update

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As in previous years, the area of energy policy was the primary focus of the Commission's legislative activities in FY 2014. Among the significant energy legislation enacted during the Regular Session of 2014 ("2014 Session"), Act 109 focuses on the modernization of the State's grids, requiring that "[i]n advancing the public interest, the [C]ommission shall balance technical, economic, environmental, and cultural considerations associated with modernization of the electric grid." These various considerations specifically include:

1. Enabling a diverse portfolio of renewable energy resources;
2. Expanding options for customers to manage their energy use;
3. Maximizing interconnection of distributed generation to the State's electric grids on a cost-effective basis at non-discriminatory terms and at just and reasonable rates, while maintaining the reliability of the State's electric grids, and allowing such access and rates through applicable rules, orders, and tariffs as reviewed and approved by the Commission;
4. Determining fair compensation for electric grid services and other benefits provided to customers and for electric grid services and other benefits provided by distributed generation customers and other non-utility service providers; and
5. Maintaining or enhancing grid reliability and safety through modernization of the State's electric grids.

Major developments concerning the Commission's administrative placement and autonomy within the State's executive structure also occurred during the 2014 Session. Act 108 requires the administrative transfer of the Commission from the Department of Budget and Finance ("DBF") to the Department of Commerce and Consumer Affairs ("DCCA") effective July 1, 2014. The purpose of this administrative transfer is to provide the Commission with refocused administrative support, where appropriate, and increased autonomy by relocating the agency so as to be settled within a department more closely aligned with the Commission's regulatory objectives. To further support the Commission's transition, additional staffing and resources are appropriated in this measure. Full implementation of the administrative transfer will occur by June 30, 2015 in accordance with a one-year transition period included in the provisions of Act 108.

Proposed legislation in other regulated industries (e.g., gas, telecommunications, water carriers, etc.) was, again, relatively limited this year, with the critical measures for 2014 dealing with energy and the administrative functioning of the PUC.

See Table 2 for a list of selected legislation passed or adopted during the 2014 Legislative Session affecting the Commission and/or public utilities.

**Table 2 - Legislation Passed During the 2014 Legislative Session Affecting the PUC and/or Public Utilities**

<b>Act/Resolution [Bill No.]</b>	<b>Title</b>	<b>Description</b>
Act 107  [S.B. No. 2196, S.D. 2, H.D. 1, C.D. 1]	Relating to Energy	Reestablishes the Energy Systems Development Special Fund, and extends the sunset date for the Environmental Response, Energy, and Food Security Tax ("Barrel Tax") to June 30, 2030. Both the reestablishment of the Energy Systems Development Special Fund and the extension of the Barrel Tax ensure the Hawaii Natural Energy Institute ("HNEI") receives critical funding over the long term to continue its technical and economic research of energy systems in Hawaii, as well as technology validation.
Act 108  [S.B. No. 2948, S.D. 1, H.D. 1, C.D. 2]	Relating to the Public Utilities Commission	Provides for the administrative transfer of the PUC from DBF to DCCA effective July 1, 2014. Key provisions of the measure include: <ul style="list-style-type: none"> <li>• Defining the nature of the administrative attachment between the PUC and DCCA;</li> <li>• Establishing a number of administrative management positions;</li> <li>• Eliminating potential conflicts of interest between the Commission and the Division of Consumer Advocacy by identifying the Executive Director of the Division of Consumer Advocacy – not the DCCA Director – as the Consumer Advocate; and</li> <li>• Providing for a one year transition period to effectuate Act 108 that runs through June 30, 2015.</li> </ul>
Act 109  [H.B. No. 1943, H.D. 2, S.D. 2, C.D. 1]	Relating to the Modernization of the Hawaii Electric System	Adds a subsection to HRS § 269-145.5 requiring that "[i]n advancing the public interest, the [C]ommission shall balance technical, economic, environmental, and cultural considerations associated with modernization of the electric grid." These various considerations include: <ul style="list-style-type: none"> <li>• Enabling a diverse portfolio of renewable energy resources;</li> <li>• Expanding options for customers to manage their energy use;</li> <li>• Maximizing interconnection of distributed generation to the State's electric grids on a cost-effective basis at non-discriminatory terms and at just and reasonable rates, while maintaining the reliability of the State's electric grids, and allowing such access and rates through applicable rules, orders, and tariffs as reviewed and approved by the Commission;</li> <li>• Determining fair compensation for electric grid services and other benefits provided to customers and for electric grid services and other benefits provided by distributed generation customers and other non-utility service providers; and</li> <li>• Maintaining or enhancing grid reliability and safety through modernization of the State's electric grids.</li> </ul>
Act 111  [H.B. No. 849, H.D. 2, S.D. 2, C.D. 1]	Relating to Emergency Management	Generally, repeals and recodifies Hawaii's Emergency Management Act currently under HRS Chapters 127 and 128 in order to update the State's emergency management statutes that were originally established in the middle of the twentieth century.
Act 122  [H.B. No. 1700, H.D. 1, S.D. 1, C.D. 1]	Relating to the State Budget	Adjusts the State's Executive Budget covering the 2013-2015 fiscal biennium that was first approved in Act 134, Session Laws of Hawaii 2013, including adjustments to both the Commission's and the Consumer Advocate's previously-approved operating budgets.

Act 133  [S.B. No. 2981, S.D. 2, H.D. 1, C.D. 1]	Relating to the Economy	Amends the State Plan under HRS Chapter 226 in various sections to include the promotion of entrepreneurship and other innovative activities, as well as the related importance of broadband and wireless communications capabilities and infrastructure. Specifically, this measure amends HRS § 226-103 (economic priority guidelines under the Hawaii State Planning Act) to make the streamlining of the “telecommunication infrastructure installation approval” process a priority in the Hawaii State Planning Act. HRS § 226-103 is further amended in subsection (g), which discusses the priority guidelines to promote the development of the information industry, to emphasize broadband and wireless infrastructure and to further promote telecommunication or wireless relay facilities.
Act 230  [S.B. No. 2682, S.D. 1, H.D. 2, C.D. 1]	Relating to Financial Disclosure Statements	Requires that the financial disclosure statements of members of several state boards and commissions – including members of the Commission – as well as the University of Hawaii Board of Regents be posted publicly (i.e. on the Internet), rather than simply filed with the State Ethics Commission as is currently required under HRS § 84-17.
H.R. No. 32, H.D. 1	See Description	Encourages the Commission and the Department of Business, Economic Development, and Tourism to continue energy adaptation efforts to address planning and efficiency as wireless communications and mobile electronic devices alter energy consumption and demand.
H.R. No. 81, H.D. 2/H.C.R. No. 110, H.D. 2, S.D. 1	See Description	Requests the Director of Business, Economic Development, and Tourism to establish a working group to recommend legislation or changes to administrative rules to develop contractual obligations between the State and wireless telecommunication service providers as to the use of public lands for wireless telecommunication infrastructure.
H.R. No. 167, H.D. 2	See Description	Urges the Commission to establish energy efficiency and conservation programs for all agricultural activities, especially those engaged in the production of food for local consumption, and to develop appropriate incentives for agricultural uses that may be shifted to off-peak times or may be available to participate in demand response to the benefit of the electric grid.
S.R. No. 84, S.D. 1	See Description	Urges the Commission and the Hawaiian Electric Light Company to expedite the conclusion and resolution of request for proposals Docket No. 2012-0092 for fifty megawatts of geothermal-derived electricity on the Island of Hawaii.

# Actions and Status by Sector

## Electricity Sector

### Hawaii's Electric Utilities

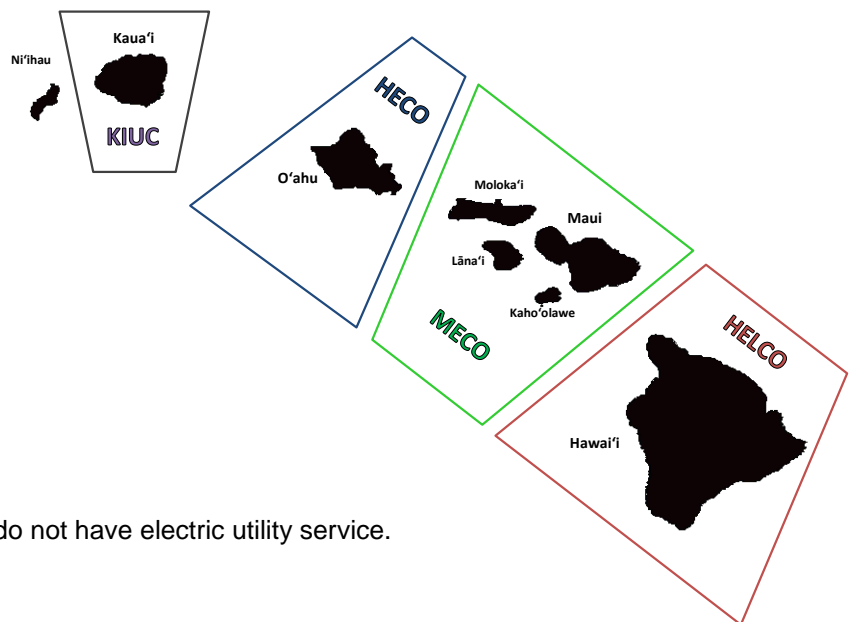
The Public Utilities Commission regulates Hawaii's four electric utilities: Kauai Island Utility Cooperative ("KIUC"), serving the island of Kauai; Hawaiian Electric Company ("HECO"), serving the island of Oahu; Maui Electric Company ("MECO"), serving the islands of Maui, Molokai, and Lanai; and Hawaii Electric Light Company ("HELCO"); serving the Island of Hawaii. Electric utility service territories are shown in Figure 3.

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% of the State's population. These three related companies are often referred to as "the HECO Companies."

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

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

Figure 3 - Hawaii's Electric Utility Service Territories



### Electric Utility Customers and Operations

Over the past six years, the number of electricity customers has increased very slightly (Table 3) while electricity sales have declined at an average rate of 1.78% per year (Table 4).<sup>5</sup>

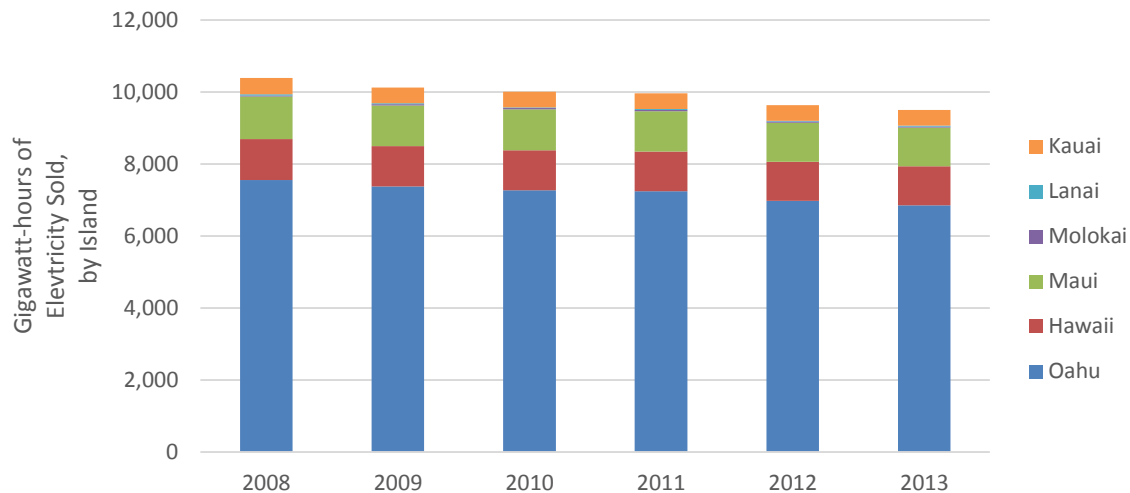
Table 3 - Number of Electric Utility Customers, Calendar Years 2008-2013

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
2013	298,921	82,074	69,303	36,704

<sup>5</sup> Sources: HECO, MECO, HELCO, and KIUC Annual Financial Reports to the PUC.

**Table 4 - Annual Electricity Sales in Gigawatt-hours, By Island, Calendar Years 2008-2013**

	2008	2009	2010	2011	2012	2013
Oahu	7,556	7,378	7,277	7,242	6,976	6,859
Maui	1,177	1,134	1,135	1,126	1,090	1,080
Lanai	29	26	25	25	25	25
Molokai	34	32	31	31	30	29
Hawaii	1,141	1,120	1,110	1,104	1,085	1,076
Kauai	454	436	435	435	433	431
<b>TOTAL</b>	<b>10,390</b>	<b>10,126</b>	<b>10,013</b>	<b>9,962</b>	<b>9,639</b>	<b>9,500</b>

**Figure 4 - Annual Electricity Sales, By Island, 2008-2013**

## System Peaks<sup>6</sup>

Hawaii's electrical grids continued to experience annual system peak demand during winter evenings: between 6:30 p.m. and 6:50 p.m., October and December. At times of system peak demand, electricity production, transmission, and distribution costs are generally higher than at times of lower demand.<sup>7</sup>

**1,000 watts (W) = 1 kilowatt (kW)**

**1,000,000 W = 1 megawatt (MW)**

**1,000,000,000 W = 1 gigawatt (GW)**

## HECO System Peak

The 2013 peak demand for the HECO system was 1,175 MW gross,<sup>8</sup> which occurred on October 28, 2013 at approximately 6:31 p.m. and is about 6 MW higher than the 2012 peak demand of 1,169 MW gross, which occurred on December 4, 2012 at approximately 6:40 p.m. HECO's highest system peak demand is 1,327 MW gross, which occurred on October 12, 2004 at approximately 6:49 p.m.

## HELCO System Peak

The 2013 peak demand for the HELCO system was 194.9 MW gross, which occurred on December 29, 2013 at approximately 6:35 p.m. and is about 1 MW higher than the 2012 peak demand of 194.0

<sup>6</sup> The HECO, HELCO, and MECO system peak information is from a September 12, 2014 letter from HECO to the Commission and the KIUC system peak information is from an August 26, 2014 letter from KIUC to the Commission. Both letters were provided in response to information requests from the Commission via email regarding each electric utility's system peak data.

<sup>7</sup> U.S. Energy Information Administration, [Real Time Power Prices](#), accessed July 26, 2013.

<sup>8</sup> "Gross" demand, as used by HECO in its September 12, 2014 letter and in this System Peaks section, refers to the electrical system demand without reductions for utility generating facility auxiliary loads such as pumps and motors.

MW gross, which occurred on January 3, 2012 at approximately 6:39 p.m. HELCO's highest system peak demand is 207.6 MW gross, which occurred on December 26, 2007 at approximately 6:34 p.m.

### MECO System Peak

The 2013 peak demand for the MECO system was 194.5 MW gross, which occurred on December 9, 2013 at approximately 6:42 p.m. and is about 4.6 MW lower than the 2012 peak demand of 199.1 MW gross, which occurred on December 31, 2012 at approximately 6:29 p.m. MECO's highest system peak demand is 210.9 MW gross, which occurred on October 11, 2004 at approximately 6:45 p.m.

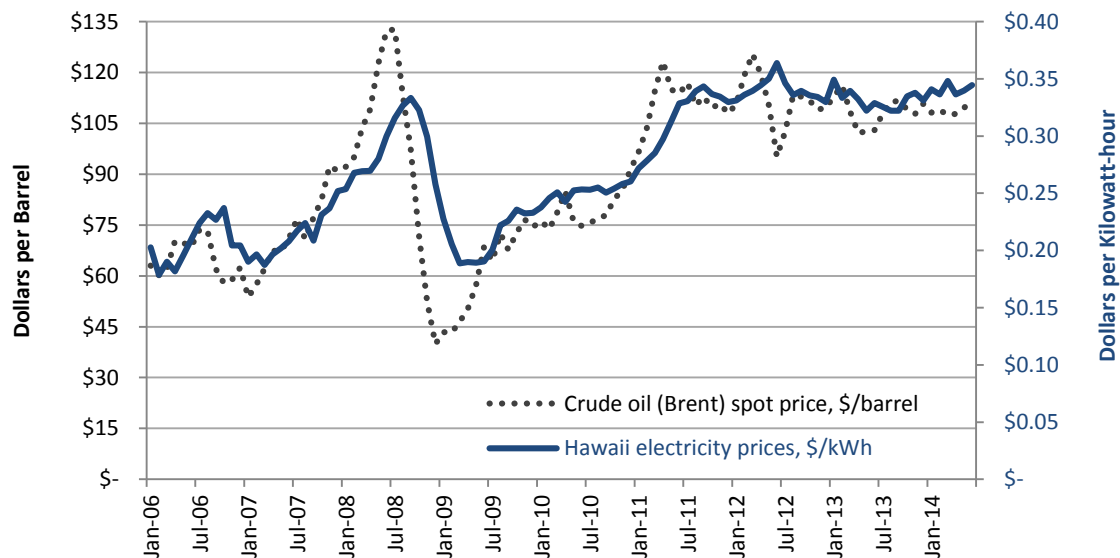
### KIUC System Peak

The 2013 peak system demand for the KIUC system was 72.96 MW, which occurred on December 26, 2013 at 6:34 p.m. and is approximately 0.10 MW lower than the 2012 system peak of 73.06 MW, which occurred on December 26, 2012 at 6:45 p.m. The highest system peak within the last ten years is 77.75 MW, which occurred on December 27, 2007 at 6:34 p.m.

## Fuel Prices

Hawaii, like other island areas,<sup>9</sup> is highly dependent on petroleum-based fuels<sup>10</sup> for electricity generation. A high reliance on oil for electricity generation means that oil price volatility (sudden and extreme changes in oil prices) 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 5.<sup>11</sup>

Figure 5 - Oil Prices and Average Hawaii Electricity Prices



<sup>9</sup> Energy Development in Island Nations, <http://www.edinenergy.org/>; *EU [European Union] Islands: Towards a Sustainable Energy Future*, June, 2012.

<sup>10</sup> Fuel oil, diesel, and naphtha, also known as "distillates" and "petroleum liquids."

<sup>11</sup> Hawaii 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](http://www.eia.doe.gov/).



Over 70% of Hawaii's electricity needs are still met with fossil fuels. Also, older "avoided cost" contracts,<sup>12</sup> even for renewable energy sources, often receive contracted payments based as least partly on the cost of oil-fired utility generation.

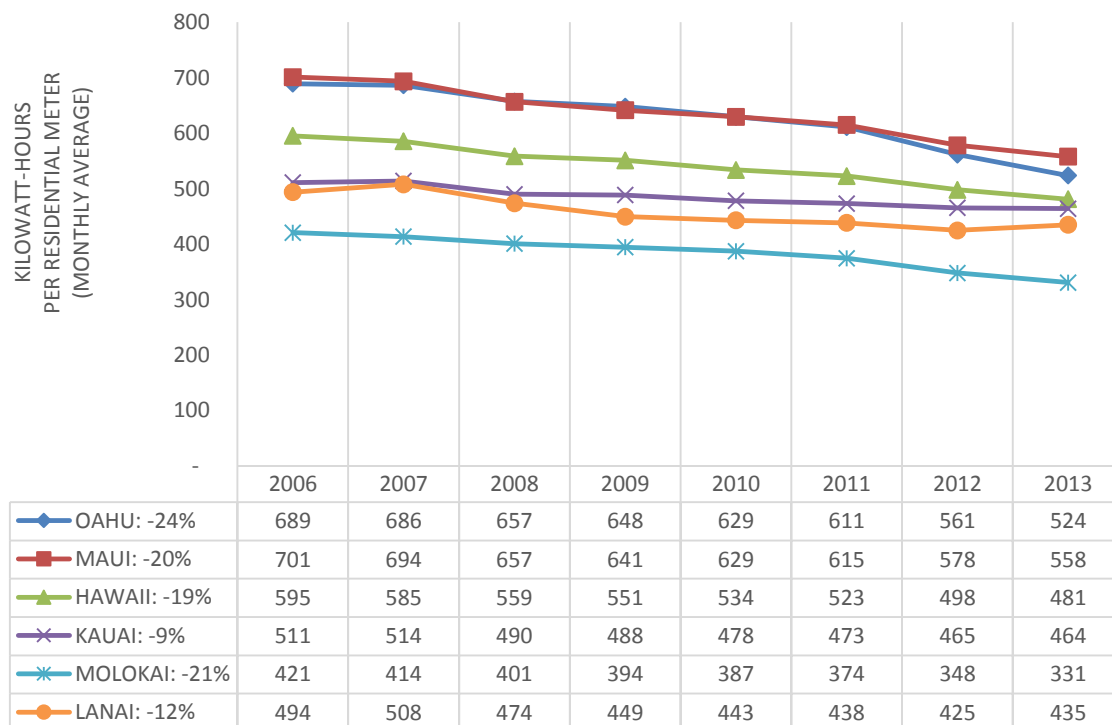
To reduce the high costs associated with an oil-dependent electricity system, Hawaii's electric utilities have been directed, by State law and Commission regulations, to reduce their dependence on oil for electricity generation. This is discussed further under "Renewable Portfolio Standards" (see page 26).

To reduce consumers' power bills, as well as to delay the need for increased generation capacity, Energy Efficiency Portfolio Standards (see page 27) have also been established.

## Electricity Use, Rates, and Average Residential Bills

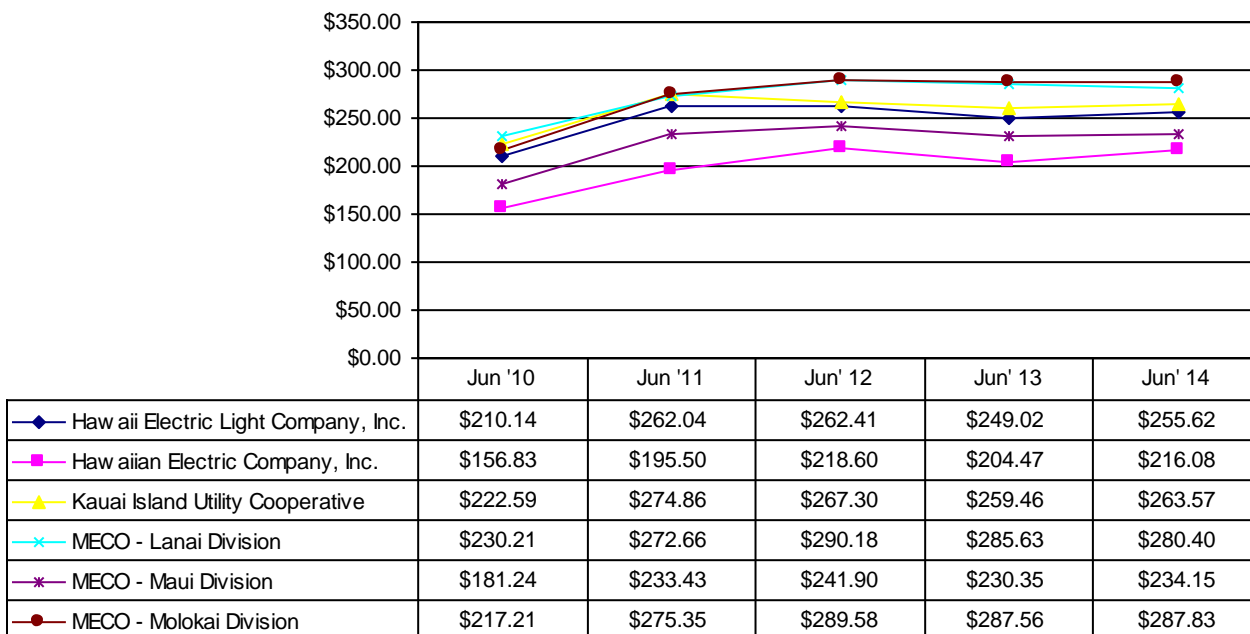
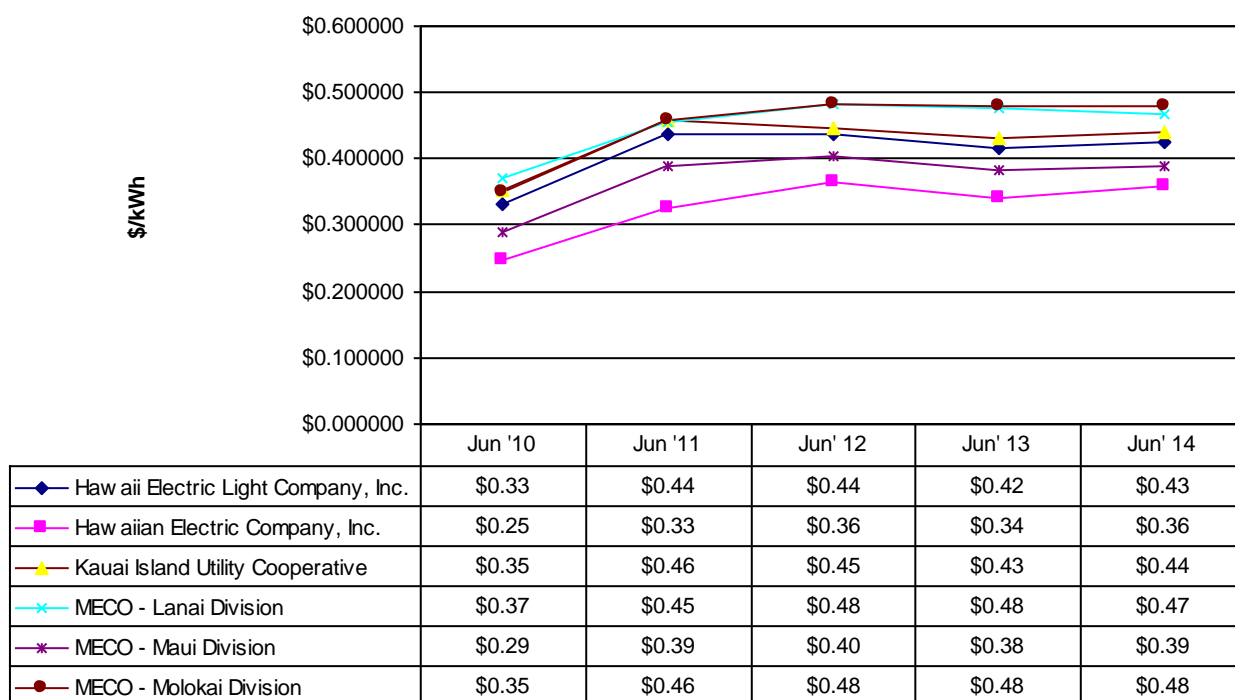
The decline in electricity use, per residential meter, is shown in Figure 6, with the cumulative decline over eight years shown by island: Oahu, 24%; Maui, 20%; Lanai, 12%; Hawaii, 19%; Kauai, 9%; and Molokai, 21%.

**Figure 6 - Monthly Average Kilowatt-Hours Per Residential Meter, 2006-2013**



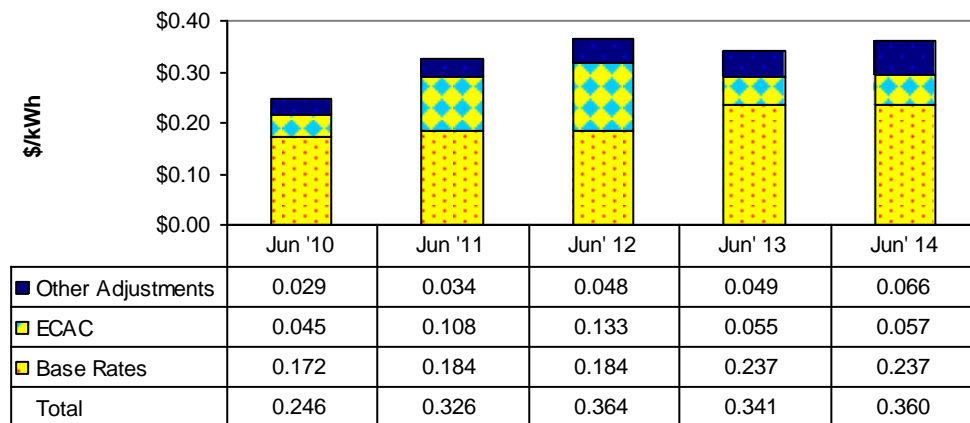
Average residential monthly electricity bills are shown in Figure 7 and a five-year comparison of residential electricity rates is shown in Figure 8.

<sup>12</sup> Avoided cost is the price at which an electric utility purchases the energy output of a qualifying facility. Pursuant to §269-27.2, HRS, the Commission's methodology to determine of just and reasonable rates should remove or significantly reduce any linkage between the price of fossil fuels and the rate for the nonfossil fuel generated electricity. However, there are several old (pre-2005) power purchase contracts that provide payments based on avoided cost.

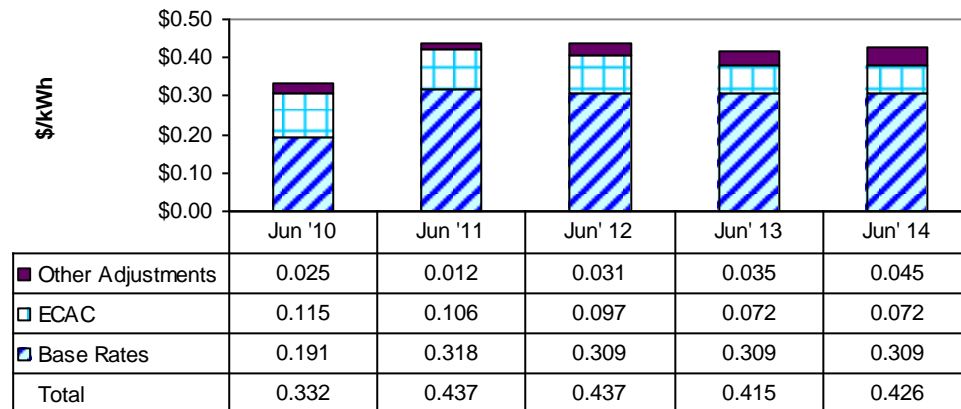
**Figure 7 - Five Year Comparison of Average Monthly Residential Electric Bill Based on 600 kWh****Figure 8 - Five Year Comparison of Residential Energy Rates, Based on 600kWh (Base Rate, Including Customer Charge, ERAC, and Other Adjustments)**

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

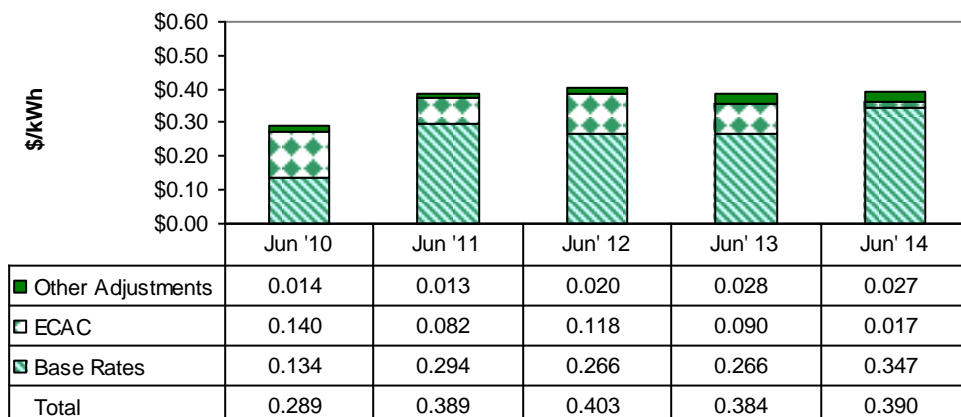
**Figure 9 - HECO Five Year Comparison of Residential Rate Components, Including Base Rates, Energy Cost Adjustment Clause (ECAC), and Other Adjustments (for 600 kWh bill)**



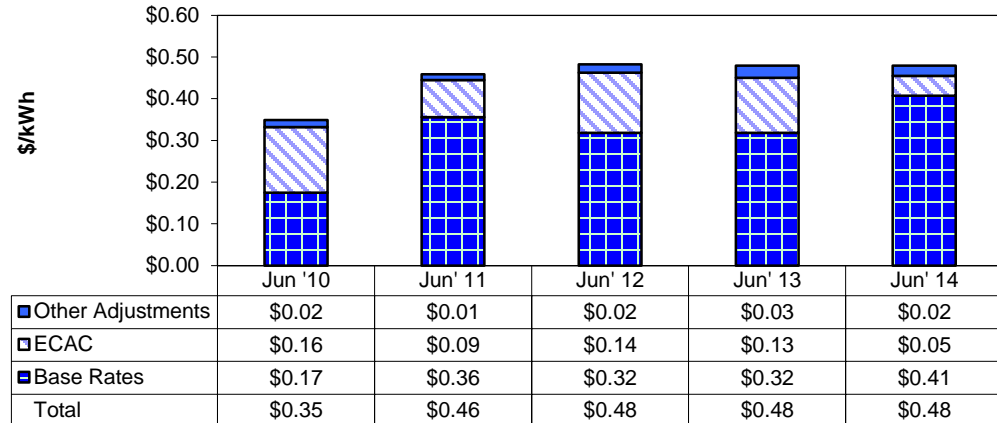
**Figure 10 - HELCO Five Year Comparison of Residential Rate Components, Including Base Rates, ECAC, and Other Adjustments (for 600 kWh bill)**



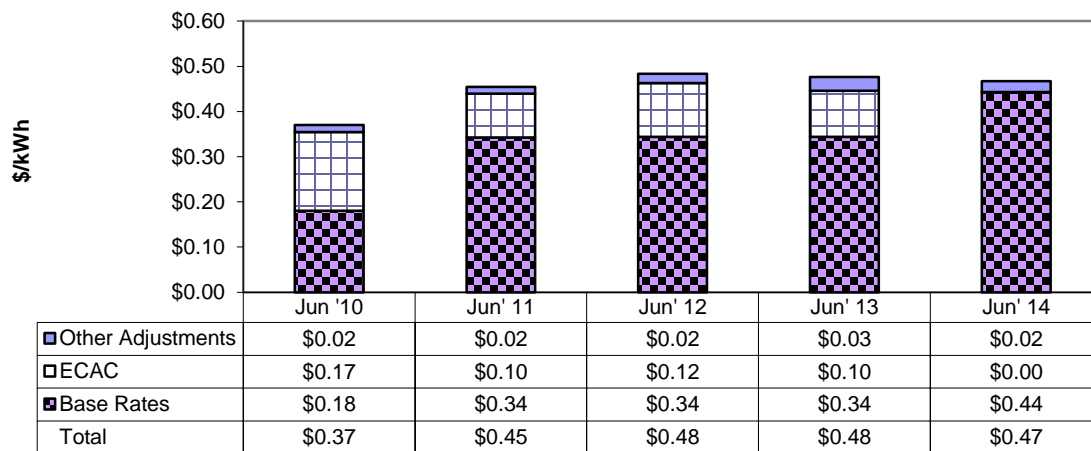
**Figure 11 - MECO - Maui Division  
Five Year Comparison of Residential Rate Components,  
Including Base Rates, ECAC, and Other Adjustments (for 600 kWh bill)**



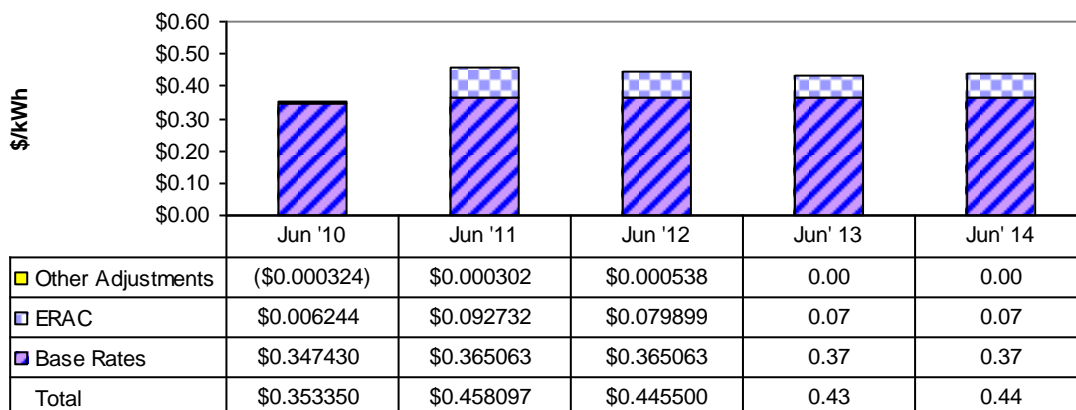
**Figure 12 - MECO - Molokai Division**  
**Five Year Comparison of Residential Rate Components,**  
**Including Base Rates, ECAC, and Other Adjustments (for 600 kWh bill)**



**Figure 13 - MECO - Lanai Division**  
**Five Year Comparison of Residential Rate Components,**  
**Including Base Rates, ECAC, and Other Adjustments (Based on 600 kWh bill)**



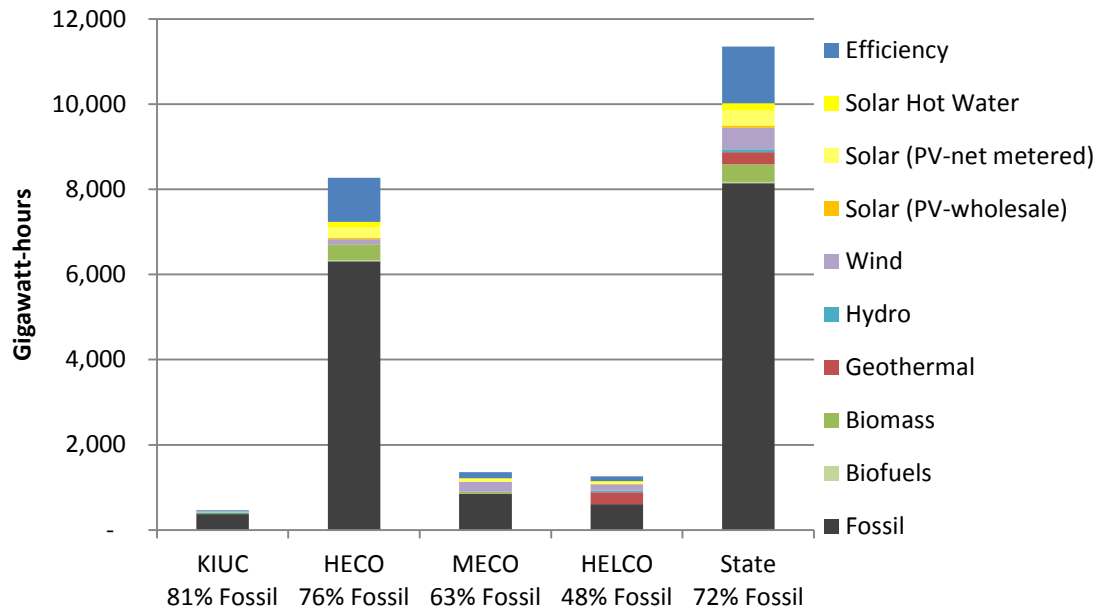
**Figure 14 - KIUC**  
**Five Year Comparison of Residential Rate Components, Including Base Rates,**  
**Energy Rate Adjustment Clause (ERAC), and Other Adjustments (for 600 kWh bill)**



## Sources Used to Meet Hawaii's Electricity Needs

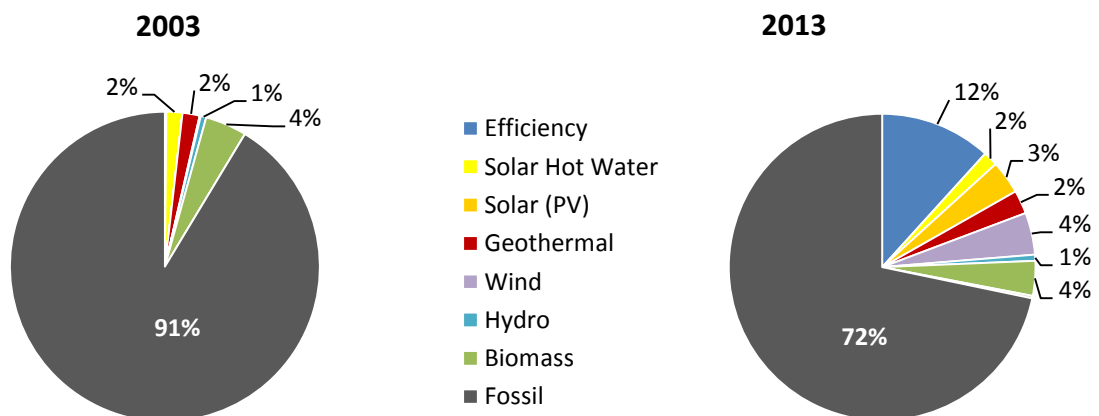
The current energy sources (including efficiency) used to meet Hawaii's electricity needs are shown in Figure 15. Although still heavily dependent on fossil fuels, Hawaii has reduced its dependence on fossil fuels from 91% in 2003 to 72% in 2013.

**Figure 15 - Resources Used in 2013 to Meet Hawaii's Electricity Needs**



As shown in Figure 16, Hawaii has diversified its electricity resources (including efficiency as a resource) significantly over the past 11 years.

**Figure 16 - Reduction of Dependence on Fossil Fuels for Electricity, from 91% in 2003 to 72% in 2013<sup>13</sup>**



<sup>13</sup> Source: Renewable Portfolio Standard reports submitted to the Commission by HECO and KIUC, and (adjusting to include efficiency) KIUC's [Annual Fuel Mix](#).

## Electricity-Related Dockets

Selected electricity-related dockets are shown in Table 5.

**Table 5 - Summary of Selected Electricity-Related Dockets**

Docket #	Topic	Actions / Status
<a href="#">2007-0008</a>	Renewable Portfolio Standards (RPS)	Docket Closed. Reports submitted annually, in accordance with Order No. 23912.
<a href="#">2007-0323</a>	Hawaii's Public Benefits Fund	Public Benefits Fee surcharge to continue at 1.5%. See page 38.
<a href="#">2007-0341</a>	HECO, HELCO, MECO Demand-Side Management (DSM) program and Integrated Demand Response Portfolio Plan (IDRPP)	In Order No. 32054, dated April 28, 2014, the PUC ordered the HECO Companies to submit an Integrated Demand Response Portfolio Plan and included a Demand Response Policy Statement that provided specific guidance concerning the objectives and goals for demand response programs. The IDRPP was filed on July 28, 2014. On August 7, 2014, the PUC solicited public comment on the IDRPP through September 8, 2014.
<a href="#">2008-0069</a>	Schedule Q payment rates.	Ongoing; utility consultants analyzing Schedule Q approaches.
<a href="#">2008-0273</a>	Feed-In Tariffs (FIT)	Docket closed 8/27/13. See new FIT docket, 2013-0194.
<a href="#">2010-0037</a>	Energy Efficiency Portfolio Standard (EEPS)	Docket Closed. EEPS Framework approved in Order No. 30089, dated January 3, 2012. The next phase of EEPS measurement, reporting, and implementation will be carried out with facilitation by the PUC's consultant.
<a href="#">2011-0038</a>	Competitive bidding for firm capacity on Maui	Proceeding closed on July 11, 2013, by Order No. 31357.
<a href="#">2011-0039</a>	Competitive bidding for firm capacity on Oahu	Proceeding closed on July 11, 2013, by Order No. 31358.
<a href="#">2011-0092</a>	Application by MECO for revised rates, schedules, and rules	By Order No. 32055 on April 28, 2014, the PUC directed MECO to file a Power Supply Improvement Plan (PSIP) to address MECO's System Improvement and Curtailment Reduction (SICR) plan shortcomings. MECO's PSIP, filed on August 26, 2014, was transferred to Docket No. 2014-0183. The docket was closed on September 12, 2014.
<a href="#">2011-0206</a>	Reliability standards for HECO, HELCO, and MECO	By Order No. 32053 on April 28, 2014, the PUC made various rulings regarding the final work product of the Reliability Standards Working Group, provided observations regarding reliability trends and directed HECO Companies and KIUC to make submissions regarding electric reliability matters, including a Distributed Generation Interconnection Plan (DGIP). The DGIP was received on August 26, 2014 was transferred to Docket No. 2014-0192.
<a href="#">2011-0225</a>	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. On February 11, 2014 by Order No. 31911, the PUC denied HECO's request to reconsider Order No. 31354 and further clarified the guidance.
<a href="#">2012-0036</a>	Integrated Resource Planning (IRP)	By Order No. 32052 on April 28, 2014, the PUC rejected the HECO Companies' IRP submission and closed the docket. The order also included a white paper entitled, "Commission's Inclinations on the Future of Hawaii's Electric Utilities." See discussion beginning on page 30 for further detail.
<a href="#">2012-0079</a>	Residential Direct Load Control (RDLC)	On September 28, 2012, HECO was directed to continue the program at current levels until December 31, 2013. On October 21, 2014, in Order No. 31558, the PUC approved HECO's request to continue its RDLC through December 31, 2014, or until a final order is issued.

<a href="#"><u>2012-0092</u></a>	Competitive bidding for 50 MW of new geothermal on the island of Hawaii	On May 20, 2014, by Order No. 31201, the PUC instructed HELCO to file a detailed explanation of the corrective actions it plans to take to complete the RFP processes in a timely fashion. HELCO filed a request to modify its final RFP on September 25, 2014 and the Consumer Advocate submitted its comments in response on October 8, 2014.
<a href="#"><u>2012-0118</u></a>	Commercial & Industrial Direct Load Control (CIDLC) program	On October 21, 2014, in Order No. 31559, the PUC approved HECO's request to continue its CIDLC through December 31, 2014, or until a final order is issued.
<a href="#"><u>2012-0212</u></a>	Hu Honua Power Purchase Agreement	On August 30, 2012, HELCO requested approval of a contract with Hu Honua for 21.5 MW of firm dispatchable biomass energy. The application was approved on December 20, 2013 in Order 31758, which also ordered HELCO to submit a PSIP to address the issues concerning HELCO's system operations and retirement of certain generation plants. The PSIP was submitted on April 21, 2014 and an updated PSIP was submitted on August 28, 2014. On September 12, 2014, Order No. 32290 transferred HELCO's PSIP to Docket No. 2014-0183 and closed this docket.
<a href="#"><u>2013-0082</u></a>	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. The PUC determined interveners and parties to the docket in Order No. 31411.
<a href="#"><u>2013-0141</u></a>	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. Hearings were held on January 27-28, 2014 and on October 29-30, 2014.
<a href="#"><u>2013-0156</u></a>	HECO Request for waiver from competitive bidding process (CB Framework)	On June 18, 2013, HECO applied to the PUC for waivers from the Competitive Bidding Framework for PPAs with four solar and one wind project developer. Two of the five projects voluntarily withdrew from the process. By Order No. 31913 issued on February 13, 2014, the PUC approved waivers for the other three the solar projects, subject to certain requirements. A third developer withdrew on September 9, 2014 and a fourth developer withdrew on September 30, 2014.
<a href="#"><u>2013-0168</u></a>	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 the status of the potential wind project. The statement was filed on August 28, 2013.
<a href="#"><u>2013-0169</u></a>	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. Hearings were held on January 21 and 23, 2014.
<a href="#"><u>2013-0194</u></a>	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 2008-0273's direction to reexamine FIT after 2 years. On December 5, 2014, the PUC approved a joint plan for the administration of the FIT queue to address immediate issues concerning the queue and to accelerate project completions. Further issues concerning the FIT program continue to be investigated in Docket No. 2014-0192.
<a href="#"><u>2012-0383</u></a>	KIUC application for 14 MW photovoltaic facility	On December 19, 2012, KIUC submitted an application for a waiver and approvals related to a 14MW PV facility and proposed financing agreements among other related matters. By Order No. 31305, the PUC approved application on June 19, 2013.

<a href="#"><u>2013-0202</u></a>	KIUC request for amendment to PPA approved by Order No. 31305 in Docket No. 2012-0383	On September 6, 2013, KIUC submitted an application for additional approvals, findings and authorizations in addition to those granted in Order No. 31305 in Docket No. 2012-0383, for the purpose of effectuating a tax equity flip arrangement. The tax equity flip was approved on March 17, 2014 in Order No. 31993.
<a href="#"><u>2013-0360</u></a>	Kahe utility-scale PV project for HECO	On November 6, 2014, the PUC denied HECO's competitive bidding waiver for the 15 MW Kahe PV project.
<a href="#"><u>2013-0373</u></a>	HECO rate increase request	On October 30, 2013, HECO filed a notice of intent to request a rate increase. The application was filed June 27, 2014.
<a href="#"><u>2013-0376</u></a>	HECO capital expenditure request for Beckoning Point static compensator (STATCOM)	On October 31, 2013, HECO requested for approval to install STATCOM at Beckoning Point Substation. HECO requested a withdrawal of its application on July 25, 2014 in lieu of responding the Consumer Advocate's recommendation to the PUC to deny the application. The PUC approved HECO's withdrawal on August 4, 2014 in Order No. 32239.
<a href="#"><u>2013-0381</u></a>	HECO request for waiver from competitive bidding process (CB Framework)	On November 4, 2013 HECO filed an application for waivers from the Competitive Bidding Framework for six solar projects totaling 210 MW. By Order No. 32241 issued on August 4, 2014, the PUC approved the projects subject to certain requirements. The PUC is currently reviewing the subsequently filed proposed PPAs.
<a href="#"><u>2013-0393</u></a>	HECO Companies' request for cost recovery for Stage-2 Inter-Island Interconnection Study	On November 22, 2014, the HECO companies requested approval for recovery of its deferred costs for outside contractor services totaling \$405,000 for the Stage 2 Inter-Island Interconnection Study through the Renewable Energy Infrastructure Program Surcharge.
<a href="#"><u>2013-0397</u></a>	HECO Companies' request for approval of the supply contract for biodiesel fuel	By Order No. 32154 issued on June 20, 2014, the PUC approved, subject to the modifications and requirements, the supply contract for biodiesel (B99) fuel between HECO Companies and Pacific Biodiesel Technologies.
<a href="#"><u>2013-0423</u></a>	Na Pua Makani Wind Project	On December 31, 2014, the PUC approved HECO's application to waive the Competitive Bidding Framework requirements for the Na Pua Makani Wind Project and approved the PPA, subject to certain conditions, with Na Pua Makani Power Partners.
<a href="#"><u>2013-0426</u></a>	Japanese-U.S. Maui Project (JUMPStart)	On December 19, 2014, MECO requested approval of a master agreement for licensing of sites with AEC-USA that would allow AEC to install communication, monitoring and control equipment on MECO's distribution infrastructure to aid its implementation of smart grid projects.
<a href="#"><u>2014-0011</u></a>	MECO PPA with Hawaiian Commercial Sugar Company	On January 15, 2014, MECO requested an exemption from the Competitive Bidding Framework for the extension to the PPA with Hawaiian Commercial Sugar Company.
<a href="#"><u>2014-0016</u></a>	KIUC decoupling mechanism	On January 23, 2014, KIUC requested approval to implement its proposed decoupling mechanism.
<a href="#"><u>2014-0028</u></a>	Wailuku River Hydroelectric Limited Partnership	On December 15, 2014, the PUC approved the Wailuku River Hydroelectric Limited Partnership's waiver from ownership criteria for qualifying small power production facility in order to permit the sale of a 50% ownership.
<a href="#"><u>2014-0077</u></a>	HECO PPA with Lanikuhana Solar	On April 11, 2014, HECO requested the approval of a PPA with Lanikuhana Solar and a 20 MW PV project to be located at Mililani South Solar Park.
<a href="#"><u>2014-0086</u></a>	Amendment to PPA between HECO and Kahuku Wind Power	On April 17, 2014, HECO requested an amendment to its PPA with Kahuku Wind Power, LLC that amends the pricing structure and rates under which HECO pays for energy generated and delivered by Kahuku Wind's Facility to Hawaiian Electric.



<a href="#"><u>2014-0102</u></a>	HECO reinstated credit agreement	On May 7, 2014, HECO requested approval of its amended and restated revolving unsecured syndicated credit facility agreement, including approving extending its term to April 2, 2019 and to permit borrowings.
<a href="#"><u>2014-0113</u></a>	HECO capital expenditure request for Schofield Generating Station Project	In response to Order No. 32052 in Docket No. 2012-0036, on May 16, 2014, HECO requested approval of its 50 MW Schofield Generation Station Project. The proposed reciprocating internal combustion engine will be multi-fuel capable including the ability to switch between different liquid fuels and natural gas.
<a href="#"><u>2014-0129</u></a>	On-Bill Financing/Hawaii Energy Bill Saver Program	On June 3, 2014, the PUC opened a docket to establish and implement an on-bill financing program. The PUC issued Order No. 32252 on August 7, 2014 addressing motions to intervene and motions to participate, and established a statement of issues. See page 42.
<a href="#"><u>2014-0130</u></a>	HECO Companies request to modify its interconnection rules	On June 21, 2014, the HECO companies submitted an application to modify Rule 14H in its tariff regarding the interconnection of distributed generating facilities operating in parallel with the companies' electric system.
<a href="#"><u>2014-0134</u></a>	Green Infrastructure Fee (GIF)	On June 6, 2014, Hawaii DBEDT submitted an application for a financing order to authorize the issuance of green infrastructure bonds and the collection of fees through the GIF. The financing order was approved on September 4, 2014 in Order No. 32281.
<a href="#"><u>2014-0135</u></a>	Green infrastructure loan program / Green Energy Market Securitization (GEMS) Program	On June 6, 2014, Hawaii DBEDT submitted an application for a program order to authorize the allocation, use, or expenditure held in the Hawaii Green Infrastructure Special Fund for the purposes of implementing the Hawaii Green Infrastructure Loan Program. The program order was approved on September 30, 2014 in Order No. 32318.
<a href="#"><u>2014-0183</u></a>	Power Supply Improvement Plans (PSIPs)	Docket was opened on August 7, 2014 to consolidate and receive the HECO Companies' PSIPs as directed by three separate orders issued on April 28, 2014. See Page 30.
<a href="#"><u>2014-0192</u></a>	Distributed Energy Resource Policies	Docket was opened on August 21, 2014 to investigate distributed energy resources issues and to receive the HECO Companies' Distributed Generation Interconnection Plan (DGIP). See Page 31

## Renewable Portfolio Standards

Hawaii state law<sup>14</sup> 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.

The minimum renewable electricity to be produced by each electric utility<sup>15</sup> 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 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 17 (HECO Companies) and Figure 18 (KIUC). Hawaii utilities currently exceeds the requirements. The Commission is required to evaluate the RPS every five years, beginning in 2013,<sup>16</sup> 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.

<sup>14</sup> HRS [§269-91 through 95](#).

<sup>15</sup> Related companies (i.e. HECO, MECO, HELCO) may aggregate their data when calculating compliance with RPS.

<sup>16</sup> See the RPS report on the Commission website at: [http://puc.hawaii.gov/wp-content/uploads/2013/04/2013-PUC-RPS-Report\\_FINAL-w-Appnds.pdf](http://puc.hawaii.gov/wp-content/uploads/2013/04/2013-PUC-RPS-Report_FINAL-w-Appnds.pdf)

## Energy Efficiency Portfolio Standards

The Energy Efficiency Portfolio Standards (“EEPS”)<sup>17</sup> is to achieve 4300 gigawatt-hours (“GWh”) of electricity use reductions statewide by 2030. An EEPS Framework and 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,<sup>18</sup> 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:
<b>2010-2014</b>	<b>10%</b>	<ul style="list-style-type: none"> <li>Renewable (wind, solar, biogas, geothermal, ocean, biomass, biofuels, renewable hydrogen) electricity distributed by the utility.</li> <li>Beginning 1/1/2015, also includes customer-sited, grid-connected renewable electricity generation.</li> <li>Until 12/31/2014, up to half the requirement may be met by energy efficiency and displacement technologies.</li> </ul>	<b>196.5 GWh/yr.</b>	<ul style="list-style-type: none"> <li>Energy efficiency technologies, including heat pump water heaters, ice storage.</li> <li>Use of rejected heat from combined heat and power systems (but not from units selling fossil-based electricity to utilities).</li> <li>Solar water heating, sea water air conditioning, and other renewable-based displacement technologies.</li> <li>Beginning 1/1/2015, does not include customer-sited, grid-connected renewable electricity generation.</li> </ul>
<b>2015</b>	<b>15%</b>		<b>1375 GWh (cumulative)</b>	
<b>2020</b>	<b>25%</b>		<b>2350 GWh (cumulative)</b>	
<b>2030</b>	<b>40%</b>		<b>4300 GWh (cumulative)</b>	

In 2013, the Hawaii Public Utilities Commission contracted with EnerNOC to conduct an independent evaluation of energy efficiency market potential in the State of Hawaii from 2013–2030. The study’s final report, *State of Hawaii Energy Efficiency Potential Study*,<sup>19</sup> was completed in January 2014. The study identified the un-tapped savings potential that can be achieved by contributing entities and applicable toward the goals outlined in the state’s EEPS. The study estimates that cost-effective cumulative energy efficiency potential in 2030 is 6,210 GWh, or about 144% of current EEPS goals. This indicates that while the EEPS goals are aggressive, it is likely they can be met cost-effectively and deliver substantial savings to electric utility customers throughout the state.

## 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 (HECO, MECO, and HELCO) 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 17.

<sup>17</sup> [HRS §269-96](#).

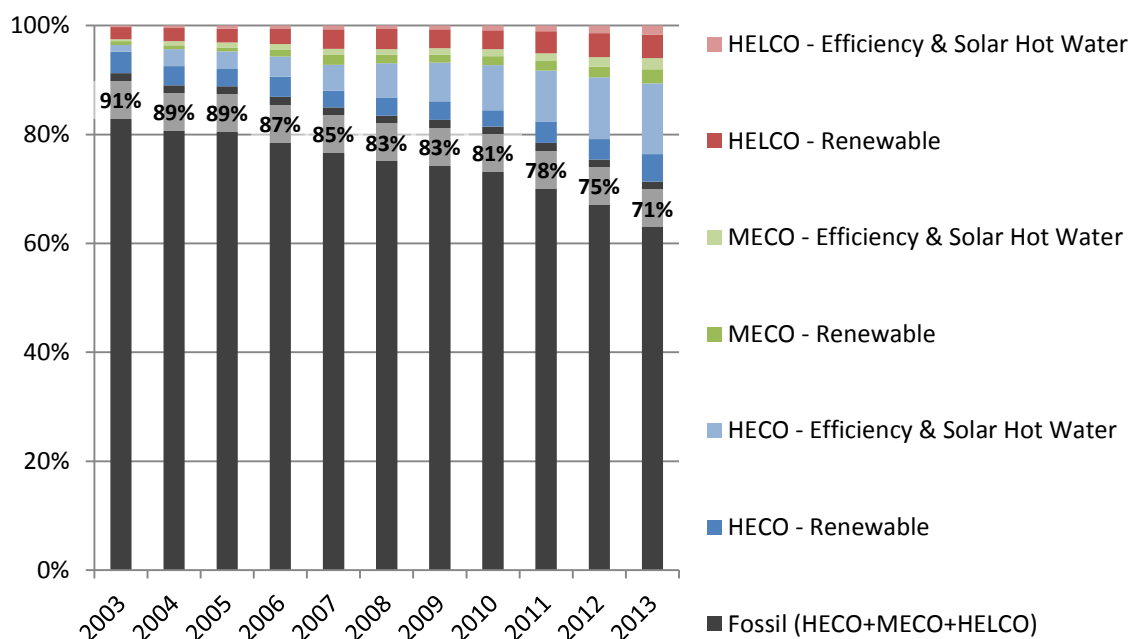
<sup>18</sup> See the EEPS Report on the Commission’s website at: [http://puc.hawaii.gov/wp-content/uploads/2013/04/2013-PUC-EEPS-Report\\_FINAL.pdf](http://puc.hawaii.gov/wp-content/uploads/2013/04/2013-PUC-EEPS-Report_FINAL.pdf)

<sup>19</sup> A copy of the *State of Hawaii Energy Efficiency Potential Study* may be found at on the Commission’s website at: [http://puc.hawaii.gov/wp-content/uploads/2013/04/State\\_of\\_HI\\_Potential\\_Study\\_Final.pdf](http://puc.hawaii.gov/wp-content/uploads/2013/04/State_of_HI_Potential_Study_Final.pdf)

**Table 7 - Gigawatt-Hours and Percentages of Electricity Saved and Produced by Source, HECO Companies' Territories, 2003-2013**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
HECO-Renewable	368	369	333	395	326	359	364	316	431	405	552
HECO-Efficiency	116	328	343	399	521	684	754	890	1,005	1,216	1,411
MECO-Renewable	66	74	75	136	196	170	161	175	189	210	283
MECO-Efficiency	32	76	100	109	119	109	122	137	155	189	222
HELCO-Renewable	215	255	268	293	389	399	368	372	436	479	470
HELCO-Efficiency	24	49	59	67	74	66	74	94	115	148	183
Fossil (HECO + MECO + HELCO)	8,602	9,366	9,413	9,292	9,207	9,008	8,797	8,716	8,471	8,112	7,765
<b>TOTAL Gigawatt-hours<sup>20</sup></b>	<b>9,423</b>	<b>10,517</b>	<b>10,592</b>	<b>10,690</b>	<b>10,832</b>	<b>10,795</b>	<b>10,639</b>	<b>10,699</b>	<b>10,801</b>	<b>10,759</b>	<b>10,885</b>
% Renewable	6.9%	6.6%	6.4%	7.7%	8.4%	8.6%	8.4%	8.1%	9.8%	10.2%	12.0%
% Efficiency	1.8%	4.3%	4.7%	5.4%	6.6%	8.0%	8.9%	10.5%	11.8%	14.4%	16.7%
% Fossil	91.3%	89.0%	88.9%	87.0%	85.0%	83.4%	82.7%	81.5%	78.4%	75.4%	71.3%
HECO Companies' Sales	9,251	10,064	10,089	10,116	10,118	9,936	9,690	9,579	9,527	9,206	9,070
HECO RPS% (as % of sales)	9%	11%	12%	14%	16%	18%	19%	21%	25%	29%	34%

**Figure 17 - Percent Fossil Fuel Use (and Contributions from Efficiency and Renewables, including DG) to Meet Electricity Needs, HECO Companies' Territories, 2003-2013**



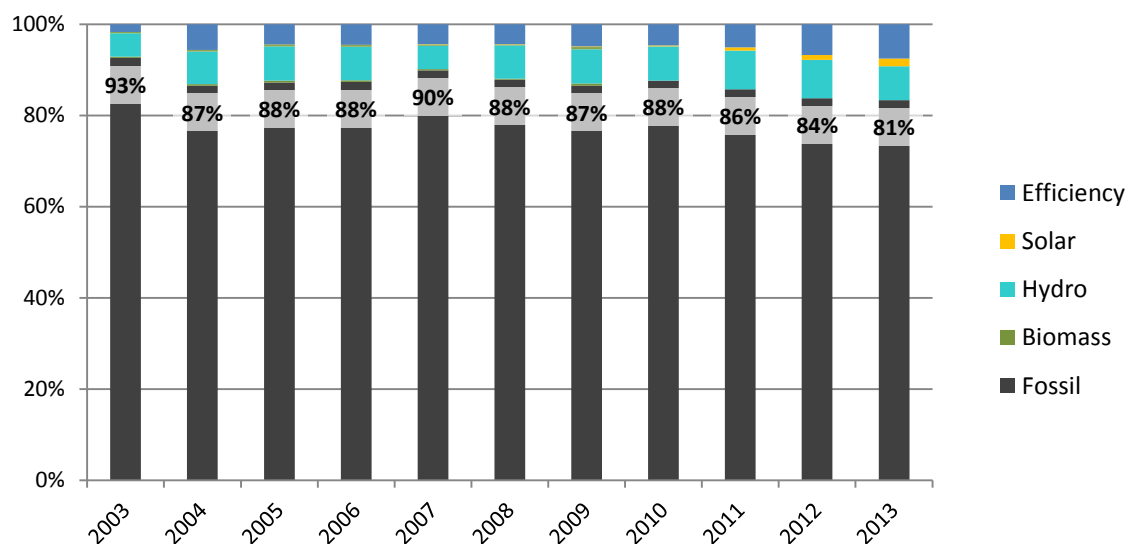
<sup>20</sup> Slightly different from GWh used to calculate RPS percentage, since GWh of efficiency, solar water heating, and net metered PV are included in these totals. The RPS percentage is higher since the denominator is only GWh sales and does not include GWh sales avoided due to efficiency, solar water heating, or net metered PV.

The renewable energy and efficiency reported by KIUC are shown in Table 8 and Figure 18.

**Table 8 - Gigawatt-Hours and Percentages of Electricity Saved and Produced by Source, KIUC, 2003-2013**<sup>21</sup>

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Biomass	1	2	2	2	1	1	2	0	0	0	0
Hydro	23	34	35	35	25	35	35	34	39	39	33
Solar	0	0	0	0	0	0	1	1	3	5	8
Efficiency & Solar Hot Water	7	27	21	22	22	21	23	21	23	31	34
Fossil	407	411	411	415	440	418	399	400	393	389	377
TOTAL Gigawatt-hours	439	474	470	474	489	475	459	456	458	464	465
% Renewable	5.4%	7.5%	8.0%	7.8%	5.4%	7.6%	8.2%	7.7%	9.2%	9.5%	11.75 %
% Efficiency	1.7%	5.6%	4.5%	4.5%	4.4%	4.4%	4.9%	4.7%	5.1%	6.7%	7.33%
% Fossil	92.9 %	86.8 %	87.6 %	87.7 %	90.1 %	88.0 %	86.9 %	87.6 %	85.7 %	83.8 %	80.92 %
KIUC Sales	431	447	449	452	467	454	436	435	435	433	431
KIUC RPS% (as % of sales)	7%	14%	13%	13%	10%	13%	14%	13%	15%	17%	20.6 %

**Figure 18 - Percent Fossil Fuel Use (and Contributions from Efficiency and Renewables, including DG) to Meet Electricity Needs, Kauai Island Utility Cooperative**



<sup>21</sup> Renewable and fossil GWh are calculated based on source percentages from "Fuel Mix Disclosure," applied to total GWh sales from RPS reports. Efficiency numbers are from RPS reports.

## PUC Policy Directives to HECO Companies

On April 28, 2014, the Commission issued four major decisions and orders providing key policy, resource planning, and operational directives to the HECO Companies, and required the companies to develop and implement major improvement action plans to aggressively pursue energy cost reductions, proactively respond to emerging renewable energy integration challenges, and improve the interconnection process for customer sited solar photovoltaic ("PV") systems.

The Commission's guidance and direction to the HECO Companies were outlined in the following decisions and orders, collectively, the "April 28 orders":

- 1) Integrated Resource Planning, Docket No. [2012-0036](#), Order No. 32052 ("IRP Order");
- 2) Reliability Standards Working Group, Docket No. [2011-0206](#), Order No. 32053 ("RSWG Order");
- 3) Policy Statement and Order Regarding Demand Response Programs, Docket No. [2007-0341](#), Order No. 32054 ("Demand Response Policy Statement"); and
- 4) Maui Electric Company 2012 Test Year Rate Case, Docket No. [2011-0092](#), Order No. 2011-0092.

The IRP Order rejected the HECO Companies' IRP Report, filed June 28, 2013, and terminated the IRP cycle citing that the IRP Report was fundamentally flawed and did not meaningfully address several principal issues established by the Commission for consideration in the IRP process.

The Commission included with the IRP order a white paper titled, [\*Commission's Inclinations on the Future of Hawaii's Electric Utilities – Aligning the Utility Business Model with Customer Interests and Public Policy Goals\*](#) ("white paper") to provide strategic resource planning direction that outlines the vision, business strategies and regulatory changes required to align the HECO Companies' business model with customers' interests and the state's public policy goals. See page 30 for more information about the white paper.

Without the context and guidance of an approved IRP action plan, the Commission is forced to address the substantial challenges facing the HECO Companies through separate investigatory dockets, proceedings, and actions to provide critical analyses and information that was expected to be provided during the comprehensive IRP process.

The April 28 orders required HECO companies to file major improvement action plans in separate dockets. These action plans include:

- 1) Power Supply Improvement Plan ("PSIP"), [2014-0183](#), see page 30;
- 2) Distributed Generation Interconnection Plan ("DGIP"), Docket No. [2014-0192](#), see page 31; and
- 3) Integrated Demand Response portfolio plan ("IDRPP"), Docket No. [2007-0341](#), see page 31.

The Commission is currently reviewing the HECO Companies' submissions.

### Power Supply Improvement Plans

The Commission directed each of the HECO Companies to produce a Power Supply Improvement Plan ("PSIP") that addresses critical power supply resource issues in order to accommodate large amounts of variable renewable energy, reduce power supply costs, and provide significant customer rate relief.

The PSIPs provide actionable strategies and implementation plans to expeditiously retire older, less-efficient fossil generation, reduce must-run generation, increase generation flexibility, adopt new technologies (such as demand response and energy storage for ancillary services), and institute operational practice changes.

Docket No. [2014-0183](#) was opened to review the PSIPs and consolidate related filings into a single docket.

The PSIPs, totaling 1,607 pages, were received by the PUC on August 26, 2014.

Between September 15, 2014 and October 6, 2014, the Commission solicited public comments on the PSIPs. Specifically, the Commission asked commenters to address whether the PSIPs provide clear and actionable strategies to lower and stabilize customer bills; integrate a diverse portfolio of cost-effective renewable energy projects; operate each island grid reliably and cost-effectively with substantial quantities of variable renewable energy resources; and contain appropriate strategies and timely actions plans, supported by well-reasoned and compelling analysis to achieve these goals on each island.

The Commission is currently reviewing the PSIPs.

### **Distributed Generation Interconnection Plan**

In the RSWG Order<sup>22</sup>, the Commission ordered the HECO Companies to develop a Distributed Generation Interconnection Plan ("DGIP") to implement technical solutions to increase distributed generation interconnection capability in major capacity increments.

The RSWG Order required that, at a minimum, the DGIP include the following components: 1) a Distributed Generation Interconnection Capacity Analysis; 2) an Advanced Distributed Energy Resources ("DER") Technology Utilization Plan; and 3) a Distribution Circuit Improvement Implementation Plan.

The Commission reiterated that the preferred course of action is to conduct such planning in a transparent manner with opportunity for stakeholder participation.

The DGIP, totaling 1,126 pages, was received by the PUC on August 26, 2014. The Commission transferred the DGIP to Docket No. [2014-0192](#), which was opened to investigate distributed energy resource policies.

Between September 15, 2014 and October 6, 2014, the Commission solicited public comments on the DGIP. Specifically, the Commission asked commenters to address whether the DGIP provides clear and actionable strategies increases options for customers to manage energy use; increase distribution circuit capacity to safely, reliably, and economically interconnect distributed generation resources; utilizes advanced distributed energy technologies to mitigate adverse grid impacts; and contains appropriate strategies and timely action plans, supported by well-reasoned and compelling analyses, to achieve these goals on each island.

The Commission is currently reviewing the DGIP.

### **Integrated Demand Response Portfolio Plan**

In the Demand Response Policy Statement,<sup>23</sup> the Commission ordered the HECO Companies to file an Integrated Demand Response Portfolio Plan ("IDRPP") to review their current demand response

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<sup>22</sup> Order No. 32053 in Docket No. 2011-0206

<sup>23</sup> Order No. 32054 in Docket No. 2007-0341



programs<sup>24</sup>, develop detailed estimates of demand response potential, and consolidate their programs into a single integrated portfolio.

In its Demand Response Policy Statement, the Commission found that demand response programs can benefit both the customer and utility in a variety of ways. The use of demand response programs may delay or eliminate the need for new fossil generating units, assist the utility in utilizing more renewable energy resources, and help the utility operate its system efficiently and at lower cost. These measures can help to lower customer bills and to achieve the State's renewable energy goals.

The IDRPP, totaling 167 pages, was received by the PUC on July 28, 2014 and filed into Docket No. [2007-0341](#).

Between August 7, 2014 and September 8, 2014, the Commission solicited public comments on the IDRPP. Specifically, the Commission asked commenters to address whether the IDRPP as proposed will provide benefits to customers, and/or what could be done to improve the IDRPP.

The Commission is currently reviewing the IDRPP.

## The Commission's Inclinations on the Future of Hawaii's Electric Utilities

In the white paper, [Commission's Inclinations on the Future of Hawaii's Electric Utilities – Aligning the Utility Business Model with Customer Interests and Public Policy Goals](#), included with the IRP Order,<sup>25</sup> the Commission offered its perspectives on the vision, business strategies, and regulatory changes required to align the HECO Companies' business model with customer interests and the state's public policy goals after the HECO Companies' failed to articulate a sustainable business model in its IRP.

To facilitate the transformation of the HECO Companies into a utility of the future, the white paper provided guidance for the HECO Companies in three sections:

- 1) Creating a 21<sup>st</sup> Century Generation System;
- 2) Creating Modern Transmission and Distribution Grids; and
- 3) Policy and Regulatory Reforms to Achieve Hawaii's Clean Energy Future.

### Creating a 21<sup>st</sup> Century Generation System

Hawaii has unique challenges and opportunities requiring the State to leap ahead of many other jurisdictions by modernizing the electricity generation system to integrate clean energy resources that cost less than today's oil-fired generation. The costs of fuel and purchased power constitute the largest components in today's high bills for electricity customers and represent a major strategic opportunity for lowering electric rates.

With the high cost of today's system and long lead times required to implement projects in this sector, the electric utilities need to move with urgency to modernize the generation system on each island's grid as delays are lost savings opportunities.

While the HECO Companies have progressed significantly in integrating renewable energy, the cost of utility-scale renewable technologies continues to decline markedly to the point where new

<sup>24</sup> Demand response programs provide incentives to utility customers, usually in the form of payments of bill credits, to change how they would normally use electricity by shifting a portion of their usage to a different time period. For example, customers in demand response programs may elect to have the utility install controls on certain appliances, such as hot water heaters, or air conditioners, that permit the utility to either limit their usage during time when electricity usage is at its peak, or to shift their usage to times when the price of electricity is lower.

<sup>25</sup> Order No. 32052 in Docket No. 2012-0036



renewable projects can cost substantially less than the cost of oil-derived fuels utilized in today's existing plants.

To further stabilize and lower the costs of generation, the Commission has directed the HECO Companies to expeditiously:

- Seek high penetrations of lower-cost, new utility-scale renewable resources;
- Modernize the generation system to achieve a future with high penetrations of renewable resources;
- Exhaust all opportunities to achieve operational efficiencies in existing power plants; and
- Pursue opportunities to lower fuel costs in existing power plants.

### **Creating Modern Transmission and Distribution Grids**

As utility energy sales continue to decline, and as significant additions of variable renewable energy sources penetrate the market, new needs have emerged on Hawaii's electricity grids where traditional utility planning is not sufficient to address those trends. Innovative planning efforts are required to anticipate a future transmission and distribution grid with advanced electrical networks that will allow it to be capable of integrating greater quantities of customer-sited distributed energy resources, such as solar PV, and expand the array of energy options for customers to manage their energy usage.

In regards to creating a modern, integrated transmission system, the PUC offered the guidance in the following areas:

- New transmission projects must consider non-transmission alternatives;
- New utility-scale combustion-technology generation projects should be located at existing utility or independent power producers generating plant sites;
- Interconnection of large-scale renewable energy projects;
- Interconnection of island grids; and
- Development of Integrated Energy Districts.

In regards to developing a state-of-the-art distribution system that enables clean energy, the Commission offered guidance in the following areas:

- Adopt advanced distribution system technologies and plan to cost-effectively integrate renewables and improve customer service;
- Develop customer-focused advanced metering infrastructure program;
- Harness distributed energy resources to benefit system and customers; and
- Develop and maintain cyber-security requirements for new distribution system technologies.

### **Policy and Regulatory Reforms to Achieve Hawaii's Clean Energy Future**

The utility's traditional role in power supply is changing with high penetrations of renewable energy resources, the retirement of existing fossil generators, and the need to incorporate new smaller, more flexible and efficient generators. The utility's role in energy delivery is also evolving to effectively become that of a network systems integrator and operator.

As a consequence of these changes, Hawaii's electric utilities will increasingly be required to:

- Integrate large quantities of utility-scale, primarily variable renewable energy resources onto the transmission system;
- Add increasing amounts of customer-sited distributed generation onto the distribution system;
- Implement power supply improvement plans to systematically retire old, inefficient fossil generators, acquire new flexible generation resources and utilize technologies such as energy storage and demand response to reduce costly must-run generation;

- Incorporate and dispatch an expanding portfolio of utility-scale and distributed renewable resources in conjunction with a declining fossil power supply portfolio to maximize renewable energy and minimize energy and ancillary service costs;
- Procure and manage a diverse commercial portfolio of fossil fuel supply contracts and renewable energy power purchase agreements to increase cost-effective renewable energy utilization, lower total energy costs and minimize and mitigate energy commodity price volatility;
- Integrate demand response technologies and dynamic pricing rate structures to manage and shift customer loads on a real-time basis to better accommodate as-available renewable energy supplies;
- Utilize smart meter, communication network and data management technologies to empower customers to better manage their energy usage and access other energy management options; and
- Employ diverse smart grid technologies including energy storage, smart inverters, electric vehicles and smart grid control devices into a seamless, integrated operating system.

Hawaii's electric utilities will need to transform their business models to assimilate these initiatives in a cohesive, integrated manner to address rapidly changing customer, technical and economic requirements, particularly in the power generation and energy delivery functions.

## Reliability

Commission activities in reliability include consideration of reliability standards in relevant dockets and the establishment of a Hawaii Electricity Reliability Administrator.

### Reliability Standards Working Group

The Reliability Standards Working Group ("RSWG") was established in 2010 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 HECO Companies' island grids.<sup>26</sup>

On March 25, 2013, the Independent Facilitator filed its Final Report, and the Technical Review Committee filed its review on May 15, 2013.

The Commission's RWSG Order<sup>27</sup> made various rulings regarding the final work product of the RSWG, provided observations regarding reliability trends that have occurred since the final RSWG work product was submitted and directed the HECO Companies to make various submissions regarding electric reliability matters at the generation and system levels including a Distributed Interconnection Plan ("DGIP"), see page 31 and a Power Supply Improvement Plan ("PSIP"), see page 30. In addition to requiring submissions from the utilities, the RSWG order also made the following findings and rulings:

At the distribution level (distributed generation):

- Distributed generation ("DG") interconnection technical challenges are real;
- There is a lack of transparency and slow response to provide supporting technical information on reliability concerns foster public distrust about utility management of the DG interconnection challenges;

<sup>26</sup> Docket No. [2008-0273](#). Order dated August 26, 2010 approved the establishment of the RSWG and Order dated June 14, 2011 contained instructions for the RSWG

<sup>27</sup> Decision and Order No. 32053, Docket No. 2011-0206.

- The significant technical challenge related to customer solar PV systems is the ability for net energy metering (“NEM”) customers to export their excess solar energy onto the grid, in an unscheduled and uncontrolled manner, regardless of whether the grid could physically or economically utilize the energy;
- It is unrealistic to expect that the high growth in distributed solar PV capacity additions experienced in the 2010 - 2013 time period can be sustained, in the same technical, economic and policy manner in which it occurred, particularly when electric energy usage is declining, distribution circuit penetration levels are increasing, system level challenges are emerging and grid fixed costs are increasingly being shifted to nonsolar PV customers; and
- Established the Distributed Energy Resource (“DER”)- Technical Working Group to address and resolve distribution system and interconnection issues associated with high penetration of DER.

At the system level (generation):

- Set forth comprehensive set of observations regarding system level reliability and curtailment trends;
- Found that significant reliability and operational challenges confronting Oahu and Kauai island grids are due to potential integration of large amounts of solar PV capacity; and
- Curtailments have been reduced on Hawaii and Maui islands but continued growth of customer solar PV systems would reverse this trend.

In accordance with Order No. 30371, the HECO Companies have continued to submit monthly reliability reports that include information on frequency variations, significant system events, and kilowatt-hours of curtailment of non-dispatchable renewable resources.

### **Hawaii Electricity Reliability Administrator**

In 2012, the Hawaii State Legislature passed Act 166, Session Laws of Hawaii 2012, now codified as HRS 269-141 -269-149, which authorizes the Commission to perform various electric system reliability oversight functions including: adopting reliability standards and interconnection requirements; monitoring the reliability and operation of the Hawaii electric system; taking necessary steps to ensure compliance with adopted reliability standards and interconnection requirements; and contracting for the services of a Hawaii Electric Reliability Administrator.

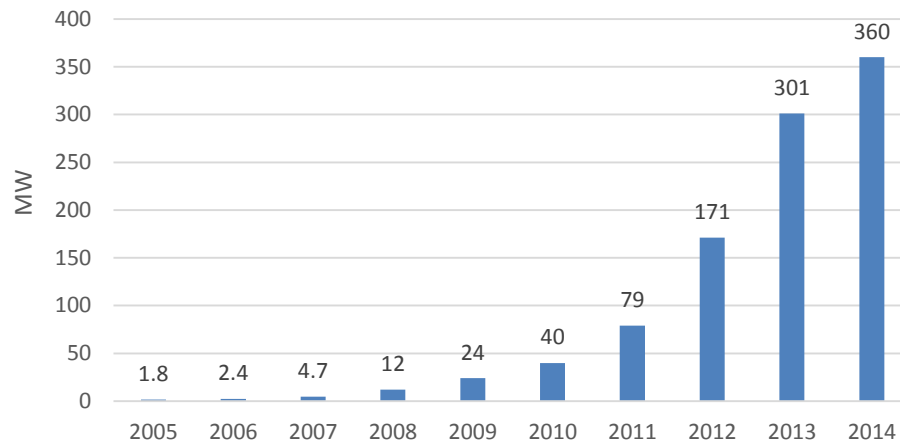
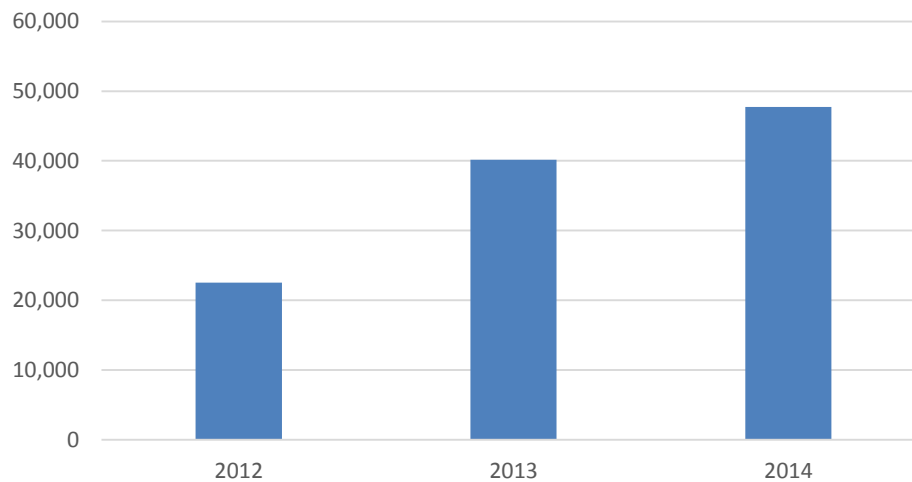
In the RSWG Order,<sup>28</sup> the Commission stated that it intends to commence a new docket to evaluate and approve proposed reliability standards and that existing periodic electric reliability reporting will be expanded and consolidated to provide greater transparency of reliability performance related information.

### **Solar Photovoltaic Interconnection**

Although the number of solar photovoltaic (“PV”) systems installed has rapidly increased over the past several years and the installed capacity has been approximately doubling each year over the past decade, the rate of interconnection of distributed generation (“DG”) systems in 2014 has slowed.

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<sup>28</sup> Decision and Order No. 32053, Docket No. 2011-0206.

**Figure 19 – Cumulative Installed PV, HECO Companies' Service Territories, 2005-2014<sup>29</sup>****Figure 20 – Number of PV Systems Installed, HECO Companies' Service Territories, 2012-2014<sup>30</sup>**

As more DG is connected to the grid, the ability to export to the grid in an unscheduled and uncontrolled manner, regardless of whether the grid could physically or economically utilize the energy, remains the principle challenge of interconnecting customer-sited PV systems.

As of September 30, 2014, the HECO Companies have 5,130 customers in their interconnection queue waiting to connect, of which 2,634 customers have been waiting 180-365 days, and 111 customers who have waited more than a year. The majority of customers in the interconnection queue are on the Oahu island grid.<sup>31</sup> By comparison, KIUC has not reported major delays accommodating its customers' interconnection requests. The technical, economic, and policy issues associated with interconnecting substantial additional customer-sited solar PV systems is under investigation in Docket No. [2014-0192](#).

<sup>29</sup> Data obtained from HECO's quarterly installed PV data available online at <http://www.hawaiianelectric.com/heco/Clean-Energy/Going-Solar/More-Solar-Information> and is current through September 2014.

<sup>30</sup> Data obtained from HECO's quarterly installed PV data available online at <http://www.hawaiianelectric.com/heco/Clean-Energy/Going-Solar/More-Solar-Information> and is current through September 2014.

<sup>31</sup> On September 30, 2014, the PUC directed the HECO Companies to respond to information requests on the status of interconnection queue including an estimate of when the HECO Companies would resolve interconnection queue. Information was provided by the HECO Companies in letters to the PUC dated October 10, 2014 and October 31, 2014, and are filed in Docket No. [2014-0192](#).

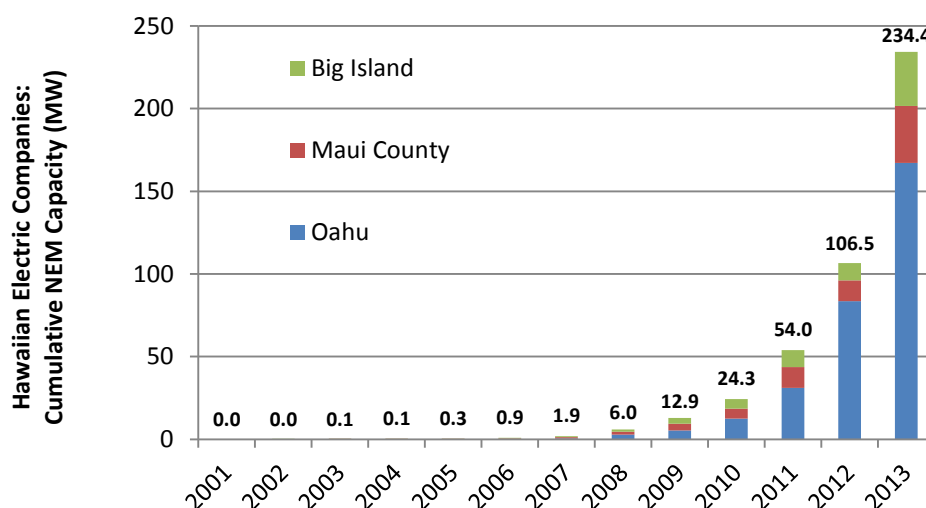
## Net Energy Metering

Net energy metering (“NEM” 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. Net metering is intended for customers producing electricity for self-consumption, i.e. customer-generators. Power producers intending to supply wholesale power to the utility can utilize Feed-in Tariff or Schedule Q programs.

The utilities provide annual reports to the Commission on net metered systems installed over the course of the previous calendar year.<sup>32</sup>

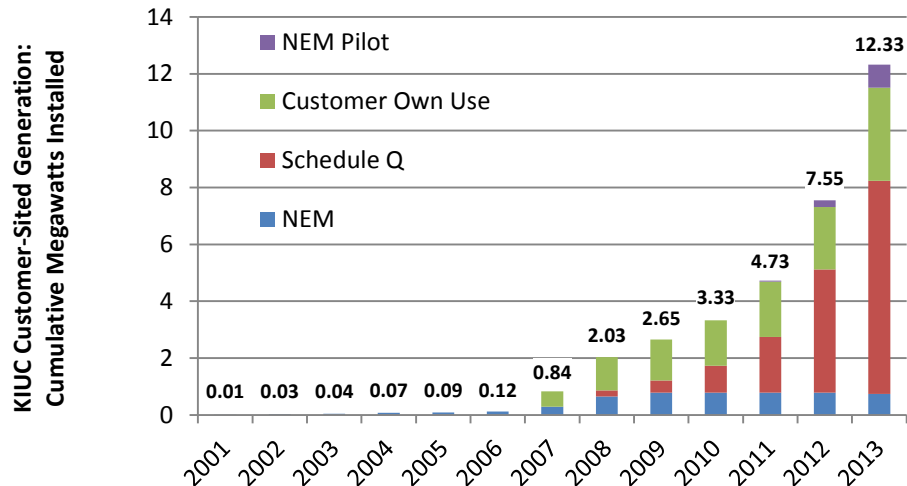
As of December 31, 2013, 234.4 megawatts (38,758 systems, mostly PV) had been installed on the Oahu (HECO), Maui County (MECO), and Hawaii Island (HELCO) systems, shown in Figure 21.

**Figure 21 - Cumulative NEM Capacity Installed on All Islands Except Kauai**



As shown in Figure 22, the KIUC system had 0.8 megawatts of “net metered” systems by 2009. After reaching the maximum net metered capacity allowed, additional systems were installed under KIUC’s Schedule Q tariff and a NEM pilot program. Several large customer-sited projects (for customers’ own use) were also installed in several locations. As of December 31, 2013, 12.33 MW of customer-sited renewables (1,834 systems), mostly photovoltaics, were in use on Kauai.

<sup>32</sup> <http://puc.hawaii.gov/reports/energy-reports/>. Quarterly updates of installed PV data are also available on HECO’s website at <http://www.hawaiianelectric.com/heco/Clean-Energy/Going-Solar/More-Solar-Information>.

**Figure 22 - NEM and Similar Customer-Sited Renewable Generation on the KIUC system**

### Feed-In Tariff

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 of December 31, 2013, 13.3 MW of PV had been installed under the FIT program.

On December 5, 2014, the PUC approved a joint plan for the administration of the FIT program queue to accelerate project completions (“FIT queue order”).<sup>33</sup> The FIT queue order addressed issues in response to claims that the queues have been mismanaged by the utilities and gamed by developers. The FIT queue order further directed HECO to and the Independent Observer to develop a plan designed to move “shovel ready” renewable energy projects quickly to completion by reviewing the applications in the active queue, to remove those that are incomplete or that fail to meet certain guidelines, and to vacate the reserve queue as there is no additional capacity available to be allocated to the existing FIT program.

Further issues concerning the FIT program continues to be investigated in Docket No. [2014-0192](#), which was initiated to investigate the technical, economic, and policy issues associated with distributed energy resources (“DER”), including the FIT Program, as they pertain to the ongoing and future electric operations of the HECO Companies.

### Other Photovoltaic Interconnections

There are also Standard Interconnection Agreements (“SIA”), Power Purchase Agreements (“PPA”), and other distributed generation systems. In calendar year 2013, 11.3 MW of SIA PV, 5 MW of PPA PV, and 0.26 MW of other distributed generation PV were interconnected to the HECO Companies’ systems, resulting in a total of 300 MW of PV on the HECO systems. Added to the 12 MW of PV on the KIUC system, statewide PV on Hawaii’s electric grids as of the end of 2013 totaled 312 MW.

<sup>33</sup> Order No. 32499, Docket No. [2013-0194](#).

## Public Benefits Fee

The Public Benefits Fee (“PBF”), established by State law<sup>34</sup>, is a surcharge collected by the HECO Companies to support energy-efficiency programs and services in the HECO Companies’ service territories,<sup>35</sup> subject to Commission approval.

Session Laws of 2013 Act 211 made changes to use of the PBF to include clean energy technology, demand response technology, and energy use reduction and demand-side management infrastructure, programs, and services. These changes were implemented in FY 2014.

Pursuant to §269-122, HRS, the Commission contracts with a third party administrator (“PBF Administrator”) to implement and manage the PBF funded programs. In 2009, following a competitively bid selection process, the Commission selected Science Applications International Corporation (“SAIC”) to serve as the PBF Administrator. SAIC began administering the PBF programs, known as the Hawaii Energy Efficiency Program (“Hawaii Energy”) on July 1, 2009.<sup>36</sup>

The Hawaii Energy operations and PBF collections identify program years by the year in which the program and collections begin. Fiscal Year 2014, which runs from July 1, 2013 through June 30, 2014, is named “Program Year 2013” for Hawaii Energy operations and PBF collections. For consistency, this document will refer to the Hawaii Energy Program years in terms of the related fiscal year.

### PBF Surcharge

The PBF surcharge amount for FY 2014 was set at 1.5 percent of forecasted utility revenues; the budgeted and actual PBF collections for FY 2014 were \$45.7 million and \$43.65 million respectively. For the coming Fiscal Year 2015, the Commission has held the surcharge amount at 1.5 percent, and set the budgeted collections at \$42.63 million.

### PBF Programs

During FY 2014, the programs supported by the PBF include the Hawaii Energy Efficiency Program and the Hawaii Energy Bill Saver Program.

### Hawaii Energy Efficiency Program

In FY 2014, the Hawaii Energy Efficiency Program (also known as “Hawaii Energy”) continued to refine and develop, 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 other incentive program work.

#### Program Structure

Hawaii Energy develops an annual plan in preparation for each program year. The annual plan provides detailed information on strategies for program participation, cost-effective energy savings, and expansion of energy efficiency, conservation and renewable energy measures. Key to the annual plan are the development of program budgets, including performance incentive goals.

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<sup>34</sup> [HRS § 269-121 through 125](#).

<sup>35</sup> Electric utility customers on Kauai do not contribute to the PBF; KIUC customers pay a demand-side management surcharge that is used in efficiency programs of KIUC

<sup>36</sup> In 2013, the PBF Administrator changed its name to Leidos Engineering LLC.

Hawaii Energy program budgets operate at 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.

The performance incentive goals include metric targets for residential and business energy savings, peak demand savings, total resource benefit, market transformation, and island equity for the program year. These goals are tied to incentive payment amounts<sup>37</sup> that specify compensation according to performance levels achieved.

The program results are reported annually<sup>38</sup> by Leidos and are verified by an independent evaluator.

#### Program Results FY 2014

The fifth program year of Hawaii Energy was completed on June 30, 2014. FY 2014 activities generated a 1.7 billion kWh of lifetime (system level) energy savings at a cost of 1.8¢ per kWh. The program-incentivized work resulted in an annual energy cost savings of \$49M per year to utility customers and avoided lifetime energy of \$517 million.

Leidos claimed a performance award of \$616,981. Preliminary results are presented in Table 9.

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<sup>37</sup> The incentive payment amounts are considered separately from program outreach and operation/management expenses, or the incentive payments used as pass-through for residential and commercial customers.

<sup>38</sup> The Hawaii Energy Annual Report is available at: <http://www.hawaiienergy.com/information-reports>



**Table 9 - Hawaii Energy FY 2013 Preliminary Results**<sup>39</sup>

Key Performance Metrics	FY 2014 <sup>a</sup> Targets	FY 2014 Results	% of Target FY 2014
<b>Annual Energy Savings</b>			
First Year Energy Reduction (kWh)			
Program Level	141,616,143	127,007,811	90%
Customer Level		146,232,261	
System Level		162,003,933	
Peak Demand Reduction (kW)	17,821	16,787	94%
Total Resource Benefit (\$)	\$177,013,974	\$156,542,771	88%
<b>Market Transformation Infrastructure Development</b> <sup>40</sup>			
Behavior Modification	18,000	23,297	129%
Professional Development	1,000	1,336	134%
Technical Know-How	2,000	223	11%
<b>Financials</b>			
Total Non-Incentives Billed <sup>b</sup>	\$9,592,893	\$9,541,937	99.5%
Total Residential and Business Incentives Billed <sup>c</sup>	\$21,094,309	\$20,424,652	96.8%
Residential Transformation Program Billed	\$1,054,715	\$1,051,054	99.7%
Business Transformation Program Billed	\$1,289,097	\$1,282,595	99.5%
On-bill Financing Billed	\$5,098,950	\$1,994,083	39%
Total Program Costs Billed	\$33,483,031	\$32,049,855	95.7%
<sup>a</sup> Hawaii Energy's "Program Year 2013" is FY 2014. For consistency with the rest of this document, Hawaii Energy's references to "Program Year 2013" in this section have been changed to "FY 2014." <sup>b</sup> Does not include tax. Does reflect the deduction of performance incentive fees for the award pool. <sup>c</sup> Include Transformational Incentives.			

Island equity is intended to promote equitable participation in PBF programs among the counties. The island equity targets require that the total cost of the projects in each county are equal to the funds collected in those counties, allowing a range of plus or minus 20 percent (i.e., equity target = collected amount +/- 20%). In FY 2014, 73.8 percent of PBF funds were collected from Oahu, 12.9 percent from Hawaii, and 13.4 percent came from Maui county ratepayers. Expenditures by county (Table 10), showed that expenditures as a percentage are within 20% of target.<sup>41</sup>

**Table 10 - PBF Island Equity Expenditure Targets and Results**

County	Target %	Actual %
City & County of Honolulu	73.8%	74.1%
Hawaii County	12.9%	12.2%
Maui County	13.4%	13.7%

Additional information about the Hawaii Energy Program may be found on its website at [www.hawaienergy.com](http://www.hawaienergy.com).

<sup>39</sup> Hawaii Energy, *Annual Report*, revised 8 October 2013.

<sup>40</sup> Market Transformation activities include holding workshops, technical and/or educational programs. Transformation metrics are based on participation numbers.

<sup>41</sup> Calculated from Hawaii Energy Annual Reporting figures (PY 2013), as verified by Evergreen Economics

## Hawaii Energy Bill \$aver Program

In response to a legislative directive,<sup>42</sup> in February 2013<sup>43</sup> the Commission found that an on-bill financing program for the state could be viable. The Commission worked with various stakeholders and contractors to design a program that intends to serve ratepayers who have been looking for a way to manage their electricity costs but have been unable to invest in energy upgrades due to high upfront costs and other barriers, such being a renter. The Hawaii Energy Bill \$aver Program (“Bill \$aver Program”) is expected to launch in FY 2015. It is a tariff-based program that allows for ratepayers in the residential and small-business rate classes within the HECO Companies’ territory to pay for approved energy improvements (for example, a permanently-installed renewable energy system, energy efficiency equipment, or solar water heater) on their utility bills. These energy improvements must produce the same amount or more annual energy savings than the annual cost for the energy improvement. Non-payment of the on-bill obligation is handled according to the existing Commission-approved procedures for tariff non-payment including service disconnection.<sup>44</sup>

There are two options in the Bill \$aver Program to attract a wide range of participants, the On-Bill Financing (“OBF”) option and the On-Bill Repayment (“OBR”) option:

### On-Bill Financing Option (“OBF”)

The OBF option is designed for renters who pay their electricity bill and ratepayers who otherwise are unable to afford energy-saving measures and/or cannot obtain financing. OBF option participants will be able to pay for the benefits due to the equipment or service via the utility bill, without owning the equipment. Payments are tied to the electric meter, rather than the utility customer and would therefore transfer to successive utility account holders.

### On-Bill Repayment Option (“OBR”)

The OBR option allows a participant to install an energy improvement through a market-based finance product that allows for payment on the customer’s electric bill.

The Bill \$aver Program will be administered by three program entities under the guidance of the Commission:

### The Electric Utilities: The HECO Companies

The electric utilities<sup>45</sup> are responsible for tariff application and maintenance; assisting with eligibility for the Bill \$aver Program; 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; and some communication with participants.

### The Program Administrator: Hawaii Energy

The Program Administrator, Hawaii Energy, is responsible for providing an online platform for Bill \$aver Program information and application; technical certification of projects and participants; marketing and outreach about the OBF option; installer training, certification and oversight for the OBF option; addressing general public inquiries; and ongoing customer service for participants.

### The Finance Program Administrator

The Finance Program Administrator (“FPA”) is responsible for servicing all on-bill payments from the utility to the capital sources; origination services in the OBF option; capital pool assembly for

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<sup>42</sup> [HRS § 269-125](#)

<sup>43</sup> Decision and Order No. 30974 in Docket No. 2011-0186. Filed on February 1, 2013.

<sup>44</sup> In Decision and Order No. 30974, parameters for an on-bill financing program are named, including that the program is tariff-based, naming the eligible rate classes, shut-off for non-payment, and requiring bill neutrality.

<sup>45</sup> The HECO Companies

the OBF option; approval and oversight of the capital sources and financing products used in the OBR option; handling customer inquiries regarding payment; and management of all financial services of the Bill Saver Program.

In FY 2014, the Commission has aggressively pursued the creation of the Bill Saver Program by:

- Organizing and managing the On-Bill Financing Working Group that assisted with the design of the Bill Saver Program;
- Procuring for the services of the FPA through RFP-PUC-14-01, issued in September 2013. AFC First Financial Corporation was awarded the contract;
- Issuing a solicitation for a capital source provider for the OBF option of the Bill Saver Program;
- Overseeing the implementation of various program design parameters and technical system modifications (IT infrastructure) with the program entities; and
- Opening Docket No. 2014-0129 for the purpose of establishing and implementing the Bill Saver Program. This docket is also to serve as a repository for the documentation necessary to establish the Bill Saver Program.<sup>46</sup>

### **Green Energy Market Securitization Program**

Act 211, Session Laws of Hawaii 2013 ("Act 211"), established the statutory and regulatory framework for the Green Energy Market Securitization ("GEMS") Program to access funding from the Public Benefit Fee and requiring the Department of Business and Economic Development, and Tourism ("DBEDT") to file applications with the Commission. The Commission issued Decision and Order No. 32281 in Docket No. [2014-0134](#) on September 4, 2014 approving DBEDT's Financing Application ("Financing Order"). DBEDT is now authorized via the Financing Order to issue up to \$150,000,000 in Green Infrastructure Bonds according to the Financing Order's various terms and conditions.

The Commission issued Decision and Order No. 32318 in Docket No. [2014-0135](#) on September 30, 2014 approving DBEDT's Program Application to use proceeds from the issuance of Green Infrastructure Bonds to establish the GEMS Program, subject to several modifications and added ongoing oversight requirements. The Commission also required the dedication of GEMS Program loan repayments to replenish any reductions in the Public Benefits Fee resulting from Green Infrastructure Fee collections. Additional information about the GEMS Program may be found on the DBEDT Hawaii State Energy Office's website at <http://energy.hawaii.gov/testbeds-initiatives/gems/gems-overview>.

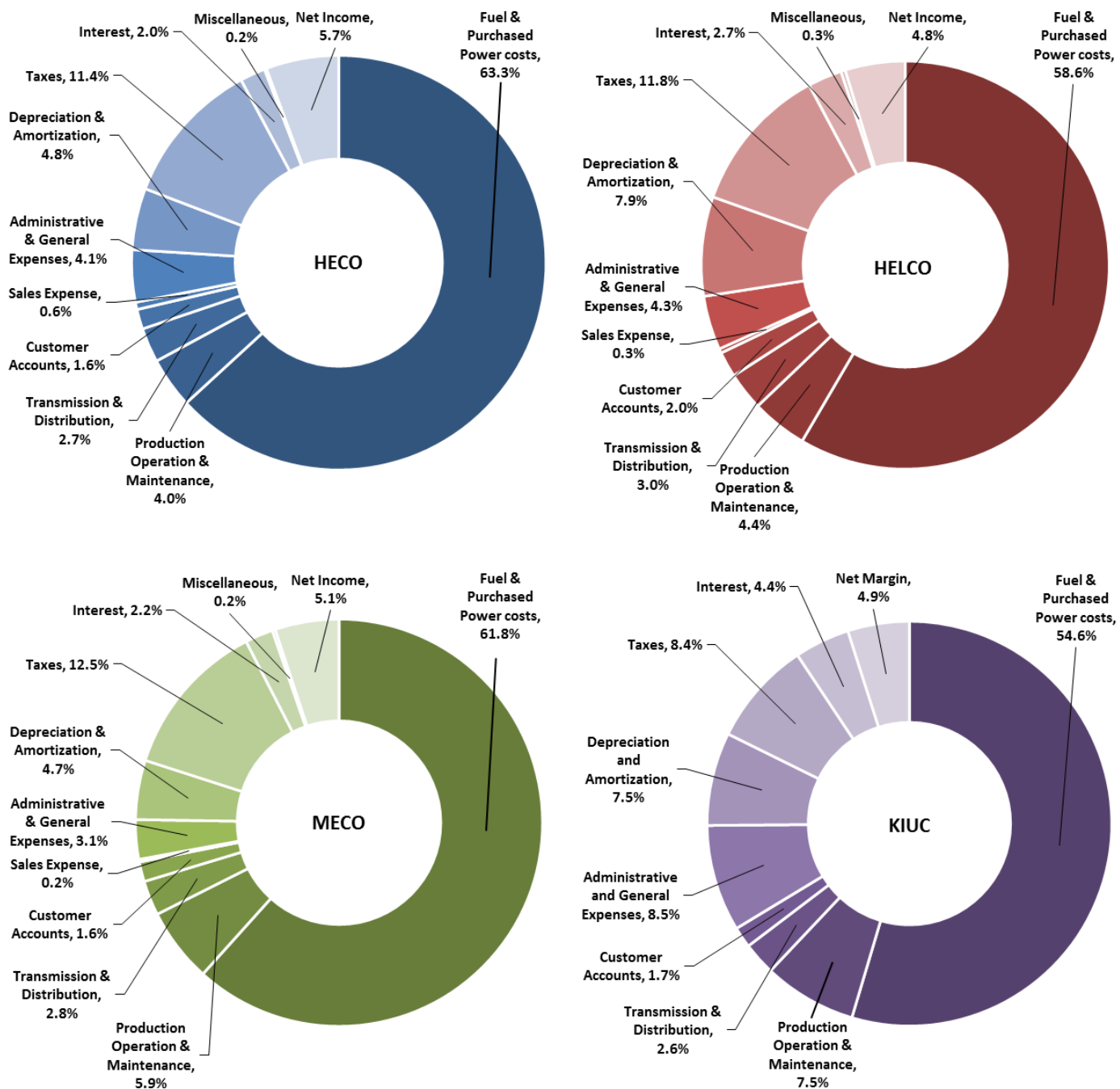
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<sup>46</sup> See Order No. 32114, filed in Docket No. 2014-0129 on June 3, 2014.

## Electric Utility Costs<sup>47</sup>

As shown in Figure 23, over half of each utility's revenue in 2013 was used for fuel and purchased power.

Figure 23 - Electric Utility Revenue Breakdown, 2013



<sup>47</sup> From Annual Financial Reports for the year ending December 31, 2013.

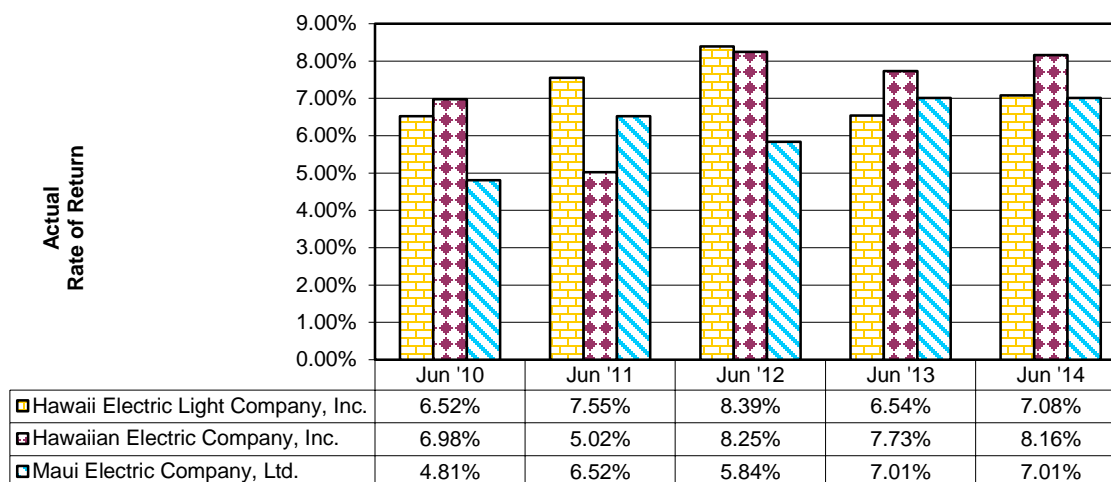
## Electric Utility Rates of Return

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, 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 24; authorized rates are shown in Table 11.

**Figure 24 - Electric Utility Rate of Return, Five-Year Comparison<sup>48</sup>**



**Table 11 - Authorized Rates of Return<sup>49</sup>**

Authorized rates of return	Jun '10	Jun '11	Jun '12	Jun '13	Jun '14
HELCO	8.33%	8.59%	8.31%	8.31%	8.31%
HECO	8.45%	8.16%	8.11%	8.11%	8.11%
MECO	8.67%	8.43%	7.91%	7.34%	7.34%

## Quality of service / service reliability

The 2013 service reliability reports submitted to the Commission by HECO, MECO, HELCO, and KIUC cover the 2013 calendar year. The following electric utility service quality information is based on or

<sup>48</sup> From monthly utility Rate of Return filings with the Commission.

<sup>49</sup> From rate cases, effective from the dates of final orders.

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.<sup>50</sup>

The reliability indices are based on all sustained<sup>51</sup> 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 10 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.

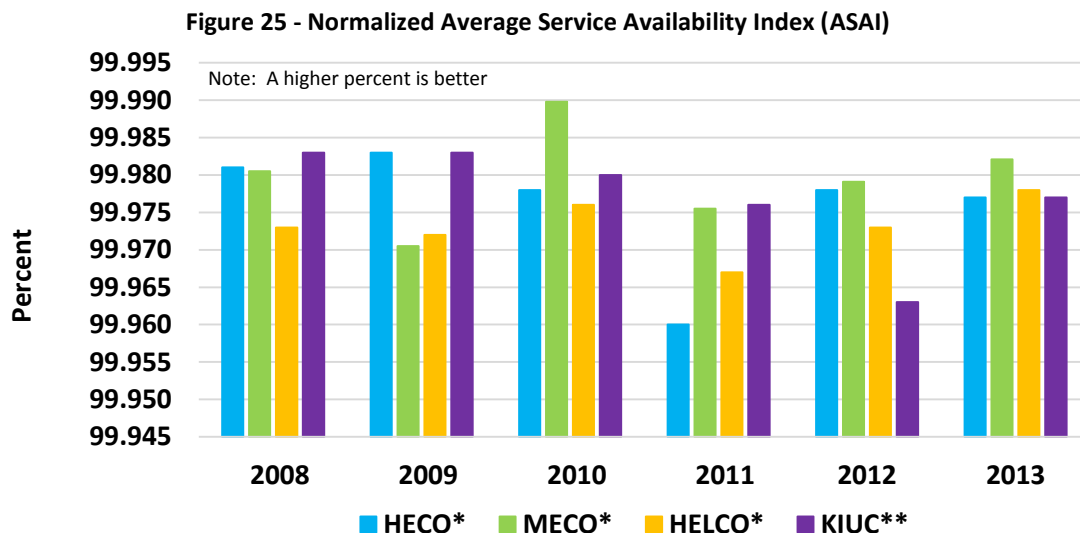
Indices used to measure reliability are defined in the box. As shown in Figure 25, the normalized system availabilities of the four utilities over the past six years were between 99.96 and 99.99 percent.

**ASAI:** *Average Service Availability Index: overall availability of electrical service.*

**SAIFI:** *System Average Interruption Frequency Index: the frequency or number of times a company's customer experiences an outage during the year or the average interruptions per customer*

**CAIDI:** *Customer Average Interruption Duration Index: the average length of time an interrupted customer is out of power.*

**SAIDI:** *System Average Interruption Duration Index: the average length of time the company's customers are out of power during the year.*



\*The HECO, MECO, and HELCO ASAI values are normalized.

\*\*The KIUC ASAI values are not normalized. The KIUC 2008 ASAI value is from the KIUC 2012 Annual Service Reliability report.

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. Further information on HECO's indices and causes of outages are available in the Appendix; see page 81.

<sup>50</sup> A copy of the Sandia report is available online at: <http://www.sandia.gov/ess/publications/SAND2012-3862.pdf>.

<sup>51</sup> A "sustained" outage is an electrical service interruption of more than one minute. Reliability indices do not include customer maintenance outages.

## HECO Service Quality

HECO's 2013 SAIDI (all events) was 121.63 minutes, a 7 percent increase over the 2012 SAIDI (all events) of 113.67 minutes. The reliability results for 2013 and the prior five years are shown in Table 12 (all events), Table 13 (normalized), and Figure 26. Additional data on HECO's indices, ASAI percent, and causes of outages are available in the Appendix; see page 81.

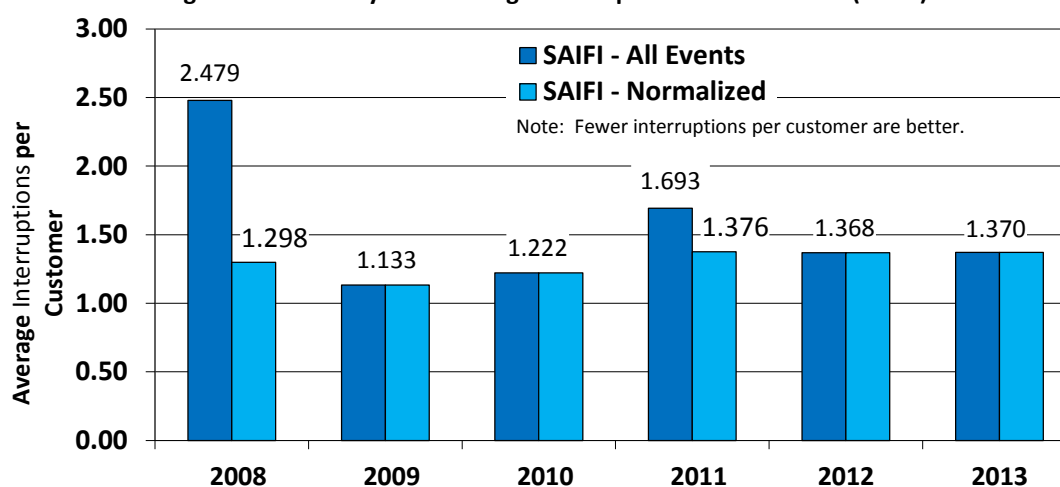
**Table 12 - HECO Annual Service Reliability Indices – All Events**

	2008	2009	2010	2011	2012	2013
Number of Customers	294,371	294,802	295,637	296,679	297,598	298,920
Customer Interruptions	729,784	333,908	361,334	502,252	407,197	409,516
Customer-Hours Interrupted	3,985,756	442,546	564,424	1,257,338	563,807	605,964
SAIDI (Minutes)	812.39	90.08	114.55	254.59	113.67	121.63
CAIDI (Minutes)	327.69	79.52	93.72	150.20	83.08	88.78
SAIFI (Average Interruptions per Customer)	2.479	1.133	1.222	1.693	1.368	1.370
ASAI (Percent)	99.846	99.983	99.978	99.952	99.978	99.977

**Table 13 - HECO Annual Service Reliability Indices – Normalized<sup>52</sup>**

	2008	2009	2010	2011	2012	2013
Number of Customers	294,371	294,802	295,637	296,679	297,598	298,920
Customer Interruptions	382,124	333,908	361,334	408,326	407,197	409,516
Customer-Hours Interrupted	490,842	442,546	564,424	1,044,904	563,807	605,964
SAIDI (Minutes)	100.05	90.08	114.55	211.32	113.67	121.63
CAIDI (Minutes)	77.07	79.52	93.72	153.54	83.08	88.78
SAIFI (Average Interruptions per Customer)	1.298	1.133	1.222	1.376	1.368	1.370
ASAI (Percent)	99.981	99.983	99.978	99.960	99.978	99.977

**Figure 26 - HECO System Average Interruption Duration Index (SAIDI)**



<sup>52</sup> Data on normalized events and outage causes are provided in the Appendix.

## HELCO Service Quality

HELCO's 2013 SAIDI for all events was 202.35 minutes. This was HELCO's worst in the past six years. HELCO's normalized 2013 SAIDI of 114.29 minutes is 25.81 minutes less than the normalized 2012 SAIDI of 140.10 minutes. Annual service reliability indices for 2013 and five prior years are shown in Table 14 (all events), Table 15 (normalized), and Figure 27. Additional data on HELCO's CAIDI and SAIFI indices, ASAI percent, and causes of outages are available in the Appendix; see page 86.

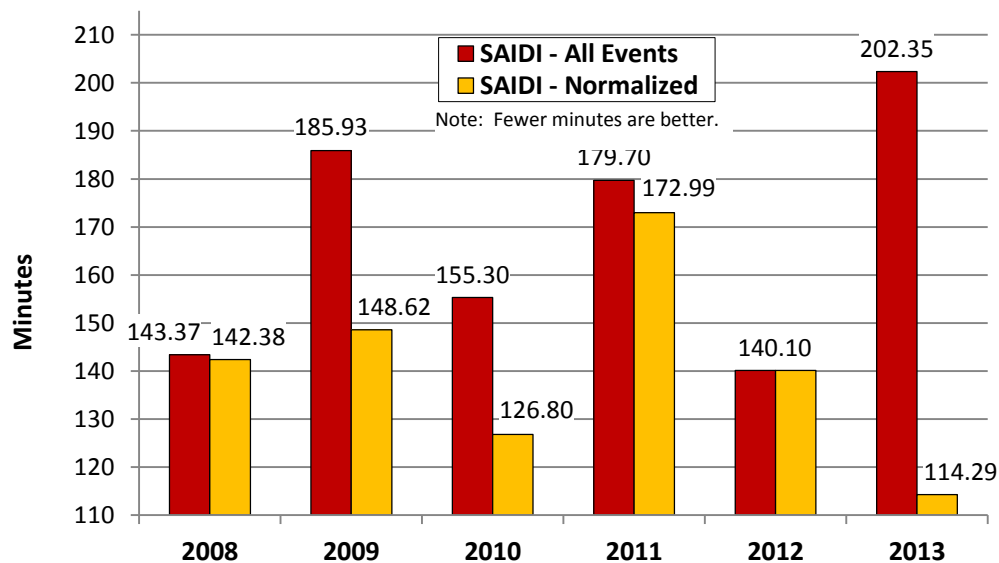
**Table 14 - HELCO Annual Service Reliability Indices – All Events**

	2008	2009	2010	2011	2012	2013
Number of Customers	79,386	79,679	80,171	80,807	81,537	82,074
Customer Interruptions	194,807	298,334	302,402	290,616	228,549	379,397
Customer-Hours Interrupted	190,314	246,916	207,607	242,120	190,395	276,798
SAIDI (Minutes)	143.83	185.93	155.3	179.7	140.1	202.35
CAIDI (Minutes)	58.62	49.66	41.19	49.99	49.98	43.77
SAIFI (Average Interruptions per Customer)	2.454	3.744	3.772	3.596	2.803	4.623
ASAI (Percent)	99.973	99.965	99.97	99.966	99.973	99.962

**Table 15 - HELCO Annual Service Reliability Indices – Normalized<sup>53</sup>**

	2008	2009	2010	2011	2012	2013
Number of Customers	79,386	79,679	80,171	80,807	81,537	82,074
Customer Interruptions	179,862	246,437	176,622	236,688	228,549	241,169
Customer-Hours Interrupted	189,156	197,371	169,522	232,981	190,395	156,338
SAIDI (Minutes)	142.96	148.62	126.8	172.99	140.1	114.29
CAIDI (Minutes)	63.1	48.05	57.59	59.06	49.98	38.89
SAIFI (Average Interruptions per Customer)	2.266	3.093	2.203	2.929	2.803	2.938
ASAI (Percent)	99.973	99.972	99.976	99.967	99.973	99.978

**Figure 27 - HELCO System Average Interruption Duration Index (SAIDI)**



<sup>53</sup> Data on normalized events and outage causes are provided in the Appendix.



## MECO Service Quality

MECO's 2013 SAIDI for all events of 191.33 minutes is 26.1 minutes better than MECO's 2012 SAIDI for all events of 217.43 minutes, a 12.00 percent decrease.<sup>54</sup> The normalized 2013 SAIDI of 93.81 minutes is 16.29 minutes less than the normalized 2012 SAIDI of 110.10 minutes, a 14.80 percent decrease.

Figure 28 shows the SAIDI for 2013 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 86.

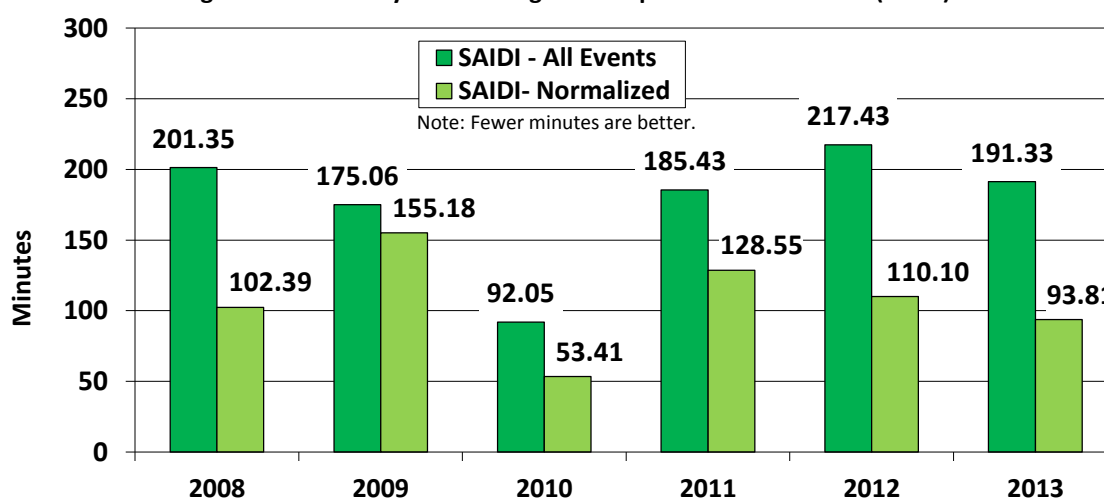
**Table 16 - MECO Annual Service Reliability Indices (All Islands) – All Events**

	2008	2009	2010	2011	2012	2013
Number of Customers	66,810	67,126	67,405	68,010	68,575	69,303
Customer Interruptions	163,120	124,864	131,294	170,379	195,618	138,480
Customer-Hours Interrupted	224,209	195,853	103,416	210,186	248,501	221,000
SAIDI (Minutes)	201.35	175.06	92.05	185.43	217.43	191.33
CAIDI (Minutes)	82.47	94.11	47.26	74.02	76.22	95.75
SAIFI (Average Interruptions per Customer)	2.442	1.860	1.948	2.505	2.853	1.998
ASAI (Percent)	99.9617	99.9667	99.9824	99.9646	99.9586	99.9635

**Table 17 - MECO Annual Service Reliability Indices (All Islands) – Normalized<sup>55</sup>**

	2008	2009	2010	2011	2012	2013
Number of Customers	66,810	67,126	67,405	68,010	68,575	69,303
Customer Interruptions	75,764	108,368	67,481	101,268	81,428	71,894
Customer-Hours Interrupted	114,001	173,602	60,007	145,711	125,836	108,361
SAIDI (Minutes)	102.39	155.18	53.41	128.55	110.10	93.81
CAIDI (Minutes)	90.29	96.12	53.35	86.33	92.72	90.43
SAIFI (Average Interruptions per Customer)	1.134	1.615	1.001	1.489	1.187	1.037
ASAI (Percent)	99.9805	99.9705	99.9898	99.9755	99.9791	99.9821

**Figure 28 - MECO System Average Interruption Duration Index (SAIDI)**



<sup>54</sup>  $(217.43 \text{ minutes} - 191.33 \text{ minutes}) \div 217.43 \text{ minutes} \times 100 \% = 12.00\%$ .

<sup>55</sup> Data on normalized events and outage causes are provided in the Appendix.

## KIUC Service Quality

KIUC's 2013 SAIDI of 118.32 minutes is lower than the previous two years of the five-year period and is lower than the five year average SAIDI of 124.98 minutes. The reliability indices reported by KIUC, and shown in Table 18 and in Figure 29, include all events (i.e., not normalized). Further information on HECO's indices and causes of outages are available in the Appendix; see page 95.

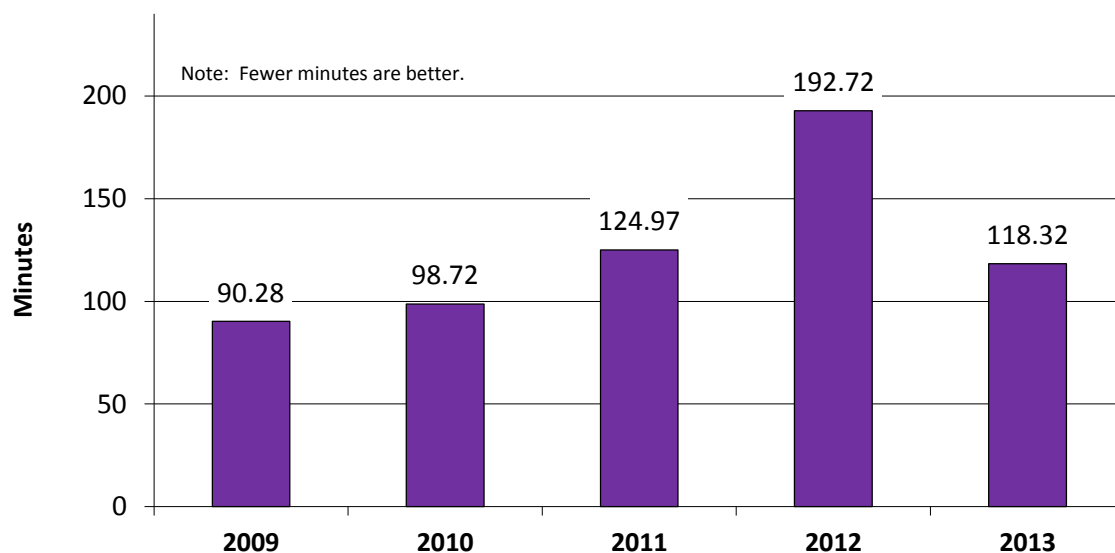
In 2013, KIUC's system experienced the following outages of significant magnitude:

- October 29, 2013, 7:38:26 p.m. (Interruption Report 2013-190) - A transmission circuit tripped due to an auto accident which resulted in loss of power to Kaumakani Substation, Kekaha Switchyard, and Mana Substation. Clearing of the damaged pole and repairs lasted more than 3 hours before the transmission circuit could be re-energized and subsequent loads restored to approximately 2,625 customers.
- April 7, 2013, 3:08:19 p.m. (Interruption Report 2013-060) - A transmission circuit between Port Allen Switchyard and Kapaa Switchyard tripped due to a phase-to-phase fault. An initial attempt to restore the affected transmission circuit caused another transmission circuit between Kapaa Switchyard and Lydgate Substation to open due to the pre-existing fault. The faulted circuit was isolated followed by the re-energizing of the Kapaa to Lydgate transmission lines. Loads were restored within 1 hour to approximately 11,103 customers.
- May 20, 2013, 11:50:45 p.m. (Interruption Report 2013-080) - Kapaia Power Station tripped due to a failed coupling of the mineral lube oil pump, resulting in an under-frequency load shed. Port Allen Generating Station started all available generation and restored loads within 33 minutes to approximately 28,654 customers.

**Table 18 - KIUC Annual Service Reliability Indices – All Events**

	2009	2010	2011	2012	2013
System Peak (MW)	75.41	76.54	72.05	73.06	72.96
Number of Customers	36,004	36,113	36,222	36,473	36,704
SAIDI (Minutes)	90.28	98.72	124.97	192.72	118.32
CAIDI (Minutes)	14.63	20.74	21.53	44.20	36.62
SAIFI (Occurrences)	6.17	4.76	5.80	4.36	3.23
ASA (Percent)	99.983	99.980	99.976	99.963	99.977

**Figure 29 - KIUC System Average Interruption Duration Index (SAIDI)**



## Utility Gas

The Commission regulates the production, conveyance, transmission, and delivery of gas. When the gas pipelines deliver fuel directly to a property, this service is regulated by the Commission. However, 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 gas provider, the Gas Company (doing business as Hawaii Gas), which serves over 35,000 customers (shown in Table 19). Although the number of customers declined between 2008 and 2013, gas sales over the same period increased slightly, from 33.098 million therms in 2008 to 33.100 million therms in 2013.

**Table 19 - Utility Gas Customers, 2008-2013**

Gas District	2008	2009	2010	2011	2012	2013
Honolulu	32,358	32,179	32,109	32,019	31,876	31,749
Hilo	1,796	1,784	1,781	1,767	1,779	1,844
Maui	479	512	516	518	516	512
Molokai	82	78	78	75	89	89
Lanai	11	13	17	19	21	21
Kauai	737	835	837	858	888	924
Hawaii Gas Totals	35,463	35,401	35,338	35,256	35,169	35,139

### Sources used to meet Hawaii's gas needs

Both synthetic natural gas ("SNG," produced from by-products of Hawaii refinery operations) and small amounts of liquefied natural gas ("LNG," shipped to Hawaii in tanks) are delivered from the Hawaii Gas facilities 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 neighborhood networks of pipes. SNG comprises almost 79 percent, and propane, about 21 percent, of the Hawaii Gas utility sales.

About half of the hydrogen used to produce SNG is renewable, derived from recycled water supplied by the Honouliuli Waste Water Treatment Plant. This renewable hydrogen accounted for 2.4% of the material inputs used to produce SNG in 2013.<sup>56</sup> Hawaii Gas also operates a pilot Renewable Natural Gas Pilot Plant to test a wide variety of feedstock including yellow grease, brown grease, canola oil and glycerin to produce methane, propane, and hydrogen.

The importation and use of liquefied natural gas ("LNG") is a key component of the fuel supply plans for both Hawaii Gas and the HECO Companies. In April 2014, Hawaii Gas received its first shipment of LNG,<sup>57</sup> and has requested approvals from the PUC to import LNG sufficient to supply about 30% of its

<sup>56</sup> Report from Hawaii Gas to the Public Utilities Commission, <http://puc.hawaii.gov/wp-content/uploads/2013/04/CY2013-Act-30-Report-PUC-The-Gas-Co.pdf>

<sup>57</sup> The first shipment of LNG was received on April 7, 2014, <http://www.hawaiigas.com/media-center/press-release/2014/hawaii-gas-brings-first-shipment-of-liquefied-natural-gas-lng-to-hawaii/>

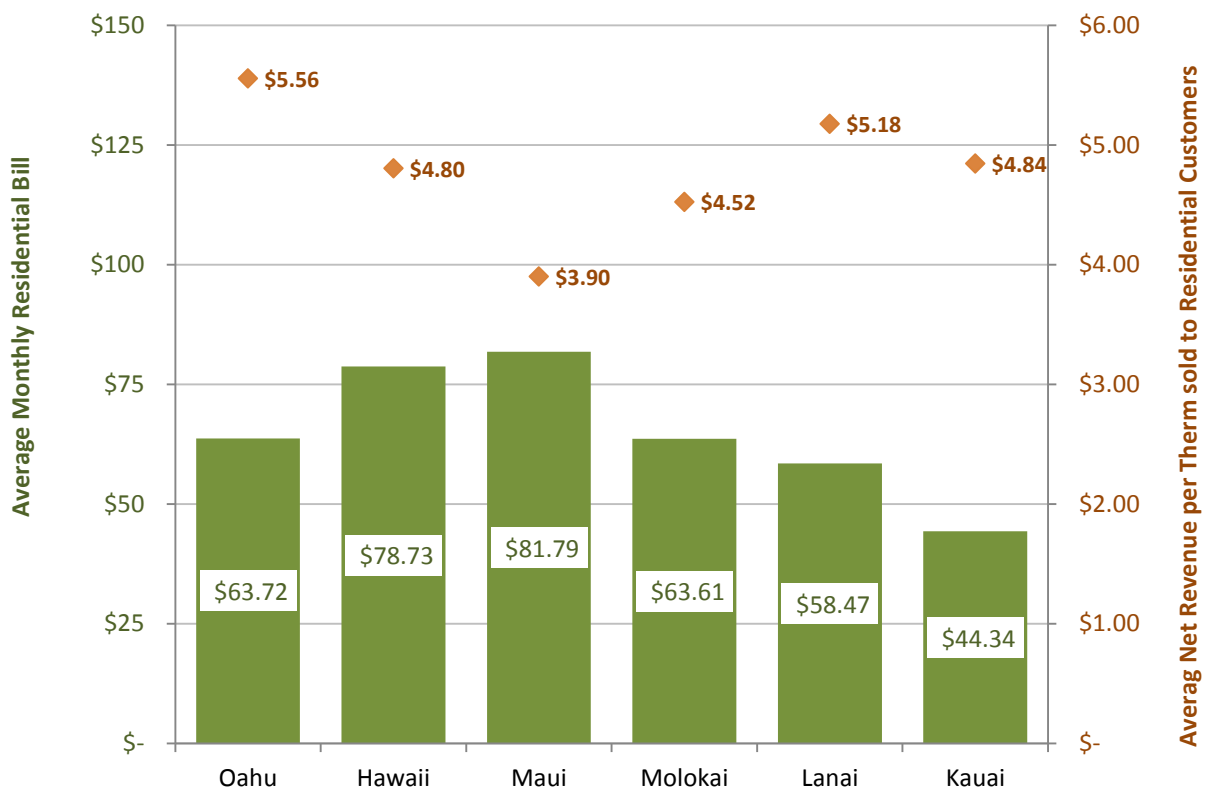
Oahu utility gas needs (see Docket No. [2014-0315](#)). The HECO Companies announced parallel efforts to import containerized and eventually, bulk LNG.<sup>58</sup> However, the HECO Companies have not yet filed any formal applications with the Commission to do so

### Gas use, rates, and average residential bills

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 30, average residential utility gas bills range from \$46.54 on Kauai to \$89.48 on Maui

**Figure 30 - Average Monthly Residential Utility Gas Bills and Cost Per Therm, 2013**



<sup>58</sup> HECO, Transformation Overview, <http://www.hawaiianelectric.com/heco/About-Us/Our-Vision> and HECO, Requests for Proposals – Containerized LNG Supply, <http://www.hawaiianelectric.com/LNG>.

## Gas Utility Dockets

Selected gas-related dockets are shown in Table 20.

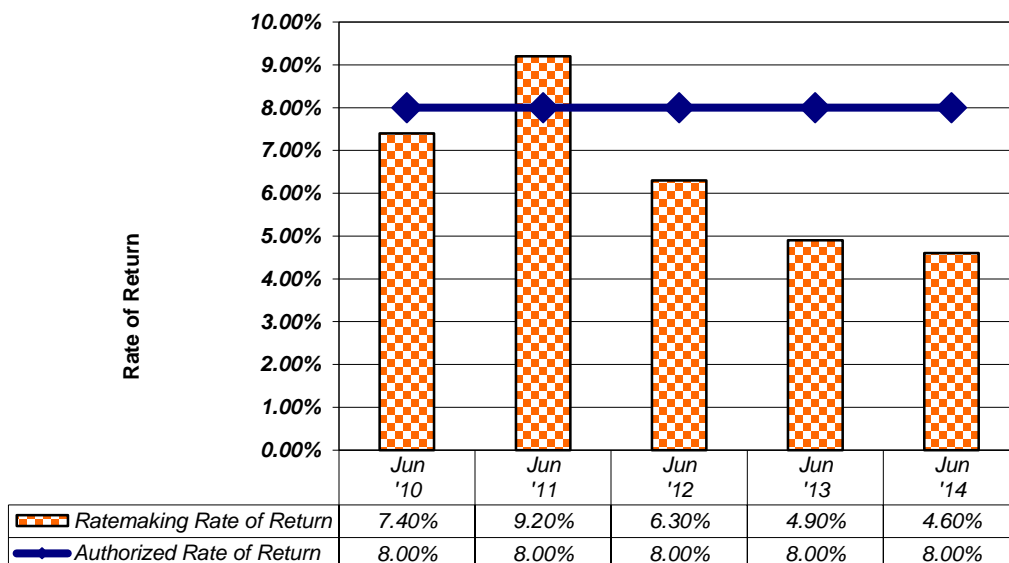
**Table 20 - Selected Gas Utility Dockets**

Docket No.	Topic	Action / Status
<a href="#">2013-0179</a>	New petroleum feedstock agreement with Tesoro Hawaii	On December 18, 2014, by Order No. 31752, the Commission approved the Petroleum Feedstock Agreement subject to reporting requirements.
<a href="#">2013-0184</a>	SNG system backup enhancement project	On March 6, 2014, by Order No. 31964, the Commission dismissed the request to commit funds in excess of \$500,000 for the proposed SNG system Backup Enhancement Project but approved the Fuel Supply Agreement subject to certain changes.
<a href="#">2014-0070</a>	Relocation of gas transmission and distribution lines	On April 7, 2014, Hawaii Gas filed an application for expenditures related to the relocation of gas transmission and distribution lines to accommodate the Honolulu Rail Transit Project and to waive the 60-day filing requirement. On May 5, 2014, the Commission issued Interim Order No. 32066 granting the waiver.
<a href="#">2014-0171</a>	Additional fuel supply arrangement for backup enhancement project	On July 25, 2014, Hawaii Gas requested approval of an additional fuel supply arrangement for the existing backup enhancement project approved in Order No. 31964 in Docket No. 2013-0184 to diversify its sources of LNG supply, and to include the costs of the arrangement in its fuel adjustment clause.
<a href="#">2014-0315</a>	30% SNG project	On October 16, 2014, Hawaii Gas filed an application for various approvals and authorizations for its 30% SNG Conversion Project, which proposes to displace SNG with LNG.

## Gas utility costs

The authorized and actual rates of return for the Oahu Gas District of Hawaii Gas are shown in Figure 31 for each 12-month period ending on the date shown.

**Figure 31 - Gas Utility Rate of Return, Five-Year Comparison, Oahu Gas District**



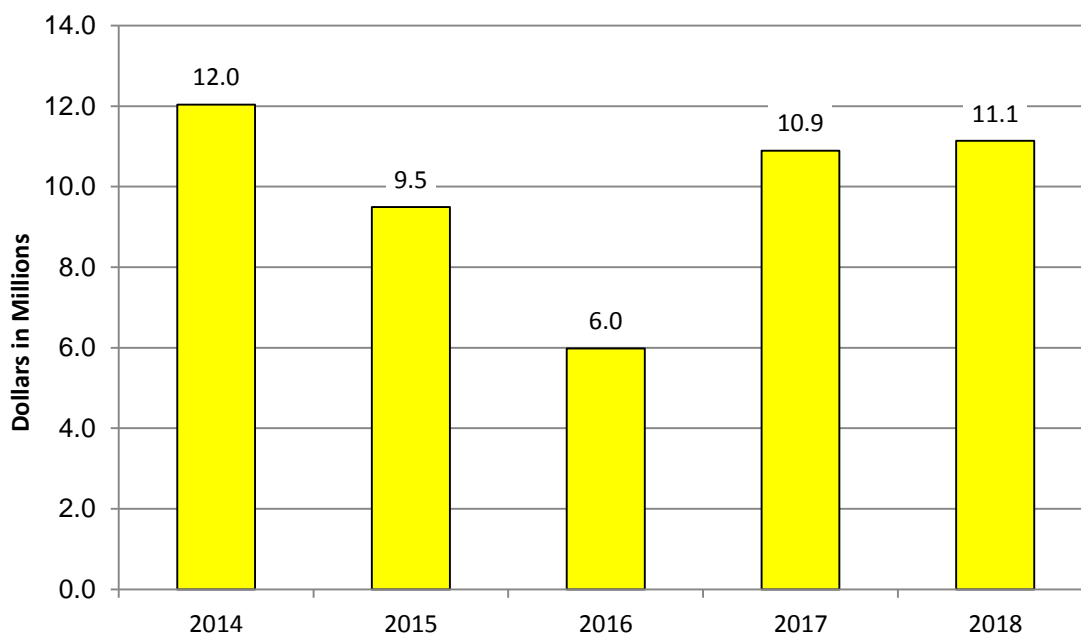
## Gas Utility Capital Improvement Expenditure Forecasts

Hawaii Gas 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 Gas is approximately \$12 million in 2014, \$9.5 million in 2015, \$6 million in 2016, \$10.9 million in 2017, and \$11.1 million in 2018, for a total of approximately \$49.55 million over the five year period. Table 21 and show the five-year capital expenditure budget forecast for Hawaii Gas.

**Table 21 - Gas Utility Expenditure Forecast**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Hawaii Gas</b>	\$12,035,858	\$9,496,650	\$5,983,427	\$10,895,588	\$11,139,951

**Figure 32 - 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, 2013, and June 30, 2014, there were 123 line breaks, all caused by third parties, affecting 82 customers and resulting in 87.78 customer-hours of interruption. This is 10% more line breaks but 70% fewer customer-hours of interruption than in fiscal year 2013 (which had 111 line breaks and 299 customer-hours of interruption).

**Table 22 - Gas Line Breaks and Service Interruptions**

Month, Year	Number of breaks	Number of Customers Affected	Customer-Hours of Interruption
July, 2013	10	4	4.25
August, 2013	7	2	1.1
September, 2013	14	1	2
October, 2013	11	15	5.5
November, 2013	9	10	13.58
December, 2013	9	13	6.25
January, 2014	12	5	11
February, 2014	10	6	8.5
March, 2014	10	6	5
April, 2014	13	6	11
May, 2014	4	1	1
June, 2014	14	13	18.6
FY 2014	123	82	87.78

Meter Performance Control Program Annual Reports are filed by Hawaii Gas each calendar year. The objectives of the program are to (1) provide accurate measurement of gas delivery to consumers and (2) extend the service lives of the meters. Separate reports are compiled for meters with flow rates of 0 to 250 cubic feet per hour ("CFH") and for meters with flow rates of 251 to 1500 CFH. In 2013, Hawaii Gas had 26,081 meters in service and, by the end of 2013, had removed 2,516 meters from service.

**Table 23 - Meter Performance Control Program**

	Meters in Service in 2013	Meters Removed from Service by Year-End 2013
0-250 CFH meters	23,015	2,108
251-1500 CFH meters	3,066	408
Total:	26,081	2,516

## Private Water and Sewage Utilities

The Commission currently regulates 18 water service utilities, 15 wastewater service utilities, and 5 utilities which provide both water service and wastewater service. The majority of these utilities can be found on the neighbor islands with 12 located on Hawaii Island, 11 located on Maui, 5 located on Kauai, 5 located on Oahu, 3 located on Molokai, and 2 located on Lanai.

In 2014 the Commission continued its efforts to draft administrative rules to provide standards for uniform practices by private water and wastewater utilities. The Commission expects to begin hearings on these rules in 2015.

The Commission recognizes the challenges and opportunities presented as a result of the “water-energy nexus” – the inextricable link between water utility operations and energy use. Because of Hawaii’s high electricity rates, the energy intensive nature of water and wastewater utility operations have led to difficult challenges in controlling operating costs. The Commission is focused on addressing these challenges by encouraging significant improvements in utility energy efficiency, water conservation, and management practices to ensure reliable service at an affordable cost while helping achieve the State’s clean energy goals. The *Water and Wastewater Energy Management Best Practices Handbook* published by Hawaii Energy in April 2014<sup>59</sup> will be instrumental in addressing these challenges.

## Private Water and Wastewater Dockets

Selected dockets relating to water and wastewater are shown in Table 24.

**Table 24– Water/Wastewater Dockets**

Docket No.	Applicant - Topic	Action / Status
<a href="#">2008-0115</a>	Molokai Public Utilities, Inc., Wai’ola O Moloka’I, Inc., and Mosco, Inc. – Temporary Rate Relief	Authorized temporary relief superseded by the tariff sheets and rates authorized in Docket Nos. 2009-0048 and 2009-0049. Closed on November 14, 2013.
<a href="#">2008-0180</a>	North Shore Water Company, LLC – CPCN	Decision and Order No. 30472 revised to remove reference to phase in plan and associated rate increase. Closed on March 7, 2014.
<a href="#">2011-0148</a>	Hawaii Water Service Company, Inc. – Rate Case	Adopt proposed D&O, rate increase approved, tariff sheets and rate schedules approved. Closed on January 14, 2014.
<a href="#">2011-0331</a>	Waikoloa Resort Utilities, Inc., dba West Hawaii Utility Company – Rate Case	Rate increase approved and settlement agreement partially approved. Closed on May 23, 2014.
<a href="#">2012-0147</a>	Waikoloa Sanitary Sewer Co., Inc. dba West Hawaii Sewer Company – Rate Case	On August 29, 2012, an application was filed for a general rate increase and tariff revisions. Review is ongoing.
<a href="#">2012-0148</a>	Waikoloa Water Co., Inc. dba West Hawaii Water Company – Rate Case	On August 28, 2012, an application was filed for a general rate increase and tariff revisions. Review is ongoing.

<sup>59</sup> A copy of the *Water and Waste Water Energy Management Best Practices Handbook* is available online at:  
<http://www.hawaiienergy.com/water-and-wastewater>



<a href="#">2012-0181</a>	Puhi Sewer & Water Co., Inc. - CPCN	On July 27, 2012, an application was filed to amend the CPCN to provide non-potable water service on the island of Kauai; and for approval of rules, regulations, and rates. Review is ongoing.
<a href="#">2013-0001</a>	Puhi Sewer & Water Co., Inc. - CPCN	Expansion of service territory approved. Closed on October 9, 2014.
<a href="#">2013-0048</a>	Hawaiian Beaches Water Company, Inc. - Financing	Approved financing and security arrangement subject to certain conditions. Closed on May 22, 2014.
<a href="#">2013-0131</a>	Puhi Sewer & Water Co., Inc. and Aqua Puhi, LLC - CPCN	On May 21, 2013, an application was filed to approve the sale and transfer of assets of Puhi Sewer & Water Co., Inc. Review is ongoing.
<a href="#">2013-0134</a>	Kalaeloa Water Company, LLC – CPCN (New)	On May 23, 2013, an application was filed for a CPCN to provide potable water and wastewater service in Kalaeloa, Oahu; and for approval of rules, regulations, and rates. Review is ongoing.
<a href="#">2013-0172</a>	Kaupulehu Water Company and Kaupulehu Waste Water Company – Partnership Interests	Pledge of partnership interests of applicants approved. Closed on June 24, 2014.
<a href="#">2013-0203</a>	Hawaiian Beaches Water Company, Inc. – Rate Case	On September 9, 2013, an application was filed for the review and approval of rate increases and revised rate schedules. Review is ongoing.
<a href="#">2013-0375</a>	Kona Water Service Company, Inc. – Notice of Intent for Rate Case	On October 31, 2013, a notice of intent to file a general rate increase application was filed. Review is ongoing.
<a href="#">2014-0097</a>	Hana Water Company, Inc., Hana Water Resources, Inc., and Hana Water Systems, LLC – CPCN	On May 1, 2014, an application was filed for the approval of the sale and transfer of assets and related matters. Review is ongoing.
<a href="#">2012-0157</a>	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.
<a href="#">2012-0181</a>	Puhi Sewer & Water Co., Inc.	On July 27, 2012, Puhi Sewer & Water Co. filed an application to amend its 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.
<a href="#">2013-0001</a>	Puhi Sewer & Water Co., Inc.	On January 4, 2013, an application was filed for approval of expansion of service territory.
<a href="#">2013-0131</a>	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.
<a href="#">2013-0134</a>	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.

## 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 2014, 19 new telecommunication service providers received approval to provide telecommunications services in Hawaii.

As of September 29, 2014, the Commission has granted eligible telecommunications carrier ("ETC") status to four carriers. See Table 25.

**Table 25 - Eligible Telecommunications Carriers in Hawaii**

Eligible Telecommunications Carriers ("ETCs")	Carrier Type	Date Designated	Docket No.
Hawaiian Telcom, Inc.	Incumbent	12/04/1997	<a href="#">1997-0363</a>
Sandwich Isles Communications, Inc.	Incumbent	12/09/1998	<a href="#">1998-0317</a>
Coral Wireless, LLC, doing business as Mobi PCS	Wireless	02/23/2007	<a href="#">2005-0300</a>
Pa Makani LLC, doing business as Sandwich Isles Wireless	Wireless	04/10/2012	<a href="#">2011-0145</a>
<b>ETC Lifeline Only</b>			
TracFone Wireless, Inc. doing business as SafeLink Wireless	Wireless	03/27/2013	<a href="#">2012-0144</a>
Total Call Mobile, Inc	Wireless	07/09/2013	<a href="#">2012-0233</a>
Budget PrePay, Inc., dba Budget Mobile	Wireless	07/26/2013	<a href="#">2012-0327</a>
Blue Jay Wireless, LLC	Wireless	08/21/2013	<a href="#">2013-0029</a>

In addition to designating ETCs, the Hawaii PUC must annually certify to the Federal Communications Commission ("FCC") that all ETCs that receive high-cost Universal Service Fund ("USF") support are using those funds for their intended purposes. The Hawaii PUC established annual certification requirements applicable to Hawaii ETCs in 2006, subsequently updated in 2012.<sup>60</sup>

<sup>60</sup> Docket No. [2011-0052](#), Decision and Order No. 30932

## Telecommunications Dockets

Selected telecommunications dockets for Fiscal Year 2014 are shown in Table 26.

**Table 26 - Selected Telecommunications-Related Dockets**

<b>Docket No.</b>	<b>Applicant - Topic</b>	<b>Action / Status</b>
<a href="#"><u>2011-0052</u></a>	Amend annual certification requirements for eligible telecommunications carriers	By Order No. 30932 issued December 28, 2012, the PUC adopts annual certification requirements for ETCs consistent with Federal requirements for the high cost support program. The docket was closed on November 11, 2013.
<a href="#"><u>2012-0045</u></a>	YourTel America Inc. / Lifeline Only ETC	YourTel America withdrew its application on October 15, 2013 and the docket was subsequently closed by Order No. 31555.
<a href="#"><u>2012-0057</u></a>	Pinnacle Telecommunications Group / Lifeline Only ETC	On August 3, 2012, the PUC suspended Docket. No. 2012-0057 with an automatic rescission upon Pinnacle's submittal of the FCC's order regarding its request for FCC Forbearance.
<a href="#"><u>2012-0233</u></a>	Total Call Mobile, Inc. / Lifeline Only ETC	Total Call Mobile's application was approved on July 9, 2013 by Order 31353.
<a href="#"><u>2012-0327</u></a>	Budget PrePay, Inc., dba Budget Mobile / Lifeline Only ETC	Budget Mobile's application was approved on July 26, 2013 by Order 31731.
<a href="#"><u>2013-0029</u></a>	Blue Jay Wireless, LLC / Lifeline Only ETC	Blue Jay Wireless's application was approved on August 21, 2013 by Order 31416.
<a href="#"><u>2013-0066</u></a>	Investigate whether ETCs participating in the high-cost program of the universal service fund (USF) should be certified by the Commission	By Order No. 31745, issued December 12, 2013, the PUC determined that the ETCs in the State participating in the federal high-cost support program of the USF have been or will be using such federal support for the purposes for which the support is intended.
<a href="#"><u>2013-0199</u></a>	i-wireless, LLC / Low-income only ETC	On September 3, 2013, i-wireless submitted an application for Lifeline only ETC designation. The PUC suspended i-wireless's application pending receipt of the FCC Notice of Apparent Liability for Forfeiture (NAL) by Order No. 32192, issued July 7, 2014.
<a href="#"><u>2014-0025</u></a>	Tempo Telecom, LLC / Lifeline Only ETC	On February 11, 2014, Tempo Telecom submitted an application for Lifeline only ETC designation. The docket is pending.
<a href="#"><u>2014-0056</u></a>	Hawaiian Telcom / Master Lease Agreement	On July 10, 2014 the PUC granted an exemption to regulatory requirements in HAR § 6-80-135 allowing Hawaiian Telcom to lease use of and access to rooftop premises to TSWG Solar for siting PV systems.
<a href="#"><u>2014-0074</u></a>	Transfer of control of Time Warner Cable Subsidiaries to Comcast	On September 17, 2014, the PUC denied Time Warner Cable Information Service and Time Warner Cable Business, LLC (Time Warner Subsidiaries) request to waive the regulatory requirements related to the indirect transfer of the Time Warner Subsidiaries to Comcast, but approved the indirect transfer of control pursuant to certain conditions.
<a href="#"><u>2014-0126</u></a>	Investigate whether ETCs participating in the high-cost program of the universal service fund (USF) should be certified by the Commission	By Order No. 32304, issued September 22, 2014, the PUC determined that the ETCs in the State participating in the federal high-cost support program of the USF have been or will be using such federal support for the purposes for which the support is intended, consistent with 47 Code of Federal Regulations.
<a href="#"><u>2014-0148</u></a>	Hawaiian Telcom / Request for waiver or approval	On June 23, 2014, Hawaiian Telcom filed an application for a waiver or approval of asset purchase and sale agreements, and to enter into pad lease agreements. The docket is pending.
<a href="#"><u>2014-0186</u></a>	Hawaii Direct Telephone Company, LLC / Transfer of authority	On August 11, 2014, Hawaii Direct Telephone Company and Hawaii Dialogix filed a joint application to transfer Hawaii Direct Telephone Company's certificate of authority and all assets to Hawaii Dialogix.
<a href="#"><u>2014-0304</u></a>	T-Mobile West / Relinquish ETC Designation	On October 7, 2014, T-Mobile West filed an application to relinquish its ETC designation effective December 31, 2013.

## Transportation: Water Carriers

The Commission regulates four water carriers: <sup>61</sup> 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.<sup>62</sup>

## Transportation: Water Carriers Dockets

Selected water carrier-related dockets are shown in Table 27.

**Table 27 - Selected Water Carrier-Related Dockets**

<b>Docket No.</b>	<b>Applicant - Topic</b>	<b>Action / Status</b>
<a href="#"><u>2013-0032</u></a>	Young Brothers, Ltd. / Annual Freight Rate Adjustment	On November 27, 2013, the PUC approved Young Brothers' modified tariff sheet.
<a href="#"><u>2013-0332</u></a>	Young Brothers, Ltd. / Transfer of Stock	On September 26, 2013, Young Brothers requested permission to transfer its stock from Foss Marine Holdings, Inc. to Foss Maritime Company. The PUC approved the transfer on December 16, 2013.
<a href="#"><u>2013-0436</u></a>	Hone Heke Corporation, dba Expeditions – Application for authority to purchase new asset	On December 23, 2013, Expeditions filed an application to enter into a design-build contract for the construction of a new ferry vessel and requested approval of requisite financing for the construction. The application was approved on April 16, 2014.

<sup>61</sup> Intrastate marine transport

<sup>62</sup> [HRS 271G](#).

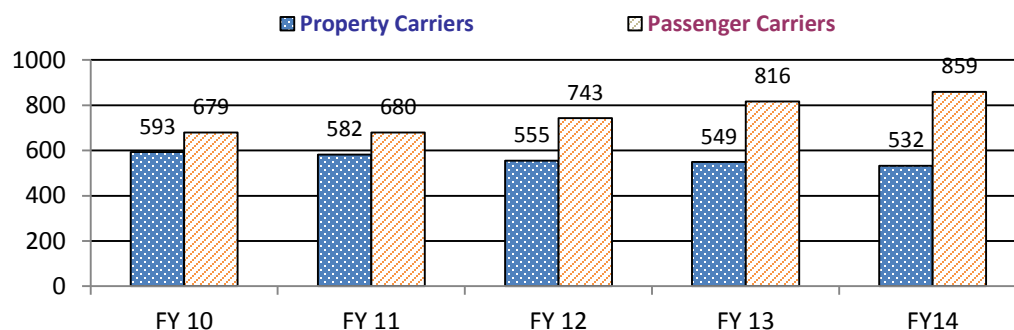
## Transportation: Motor Carriers

The Commission regulates passenger and property motor carriers transporting passengers or property for compensation or hire on the public highways.<sup>63</sup> 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.<sup>64</sup> 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 1391 motor carriers: 532 property and 859 passenger carriers. During FY 2014, new certificates or permits were issued to 93 new passenger carriers and 19 new property carriers. As shown in Figure 33, the number of property carriers declined and the number of passenger carriers increased.

**Figure 33 - Number of Active Motor Carriers, Fiscal Years 2010-2014**



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  $\pm 10$  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>.

<sup>63</sup> [HRS Chapter 271](#).

<sup>64</sup> [HRS §271-5](#).

## 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.<sup>65</sup>

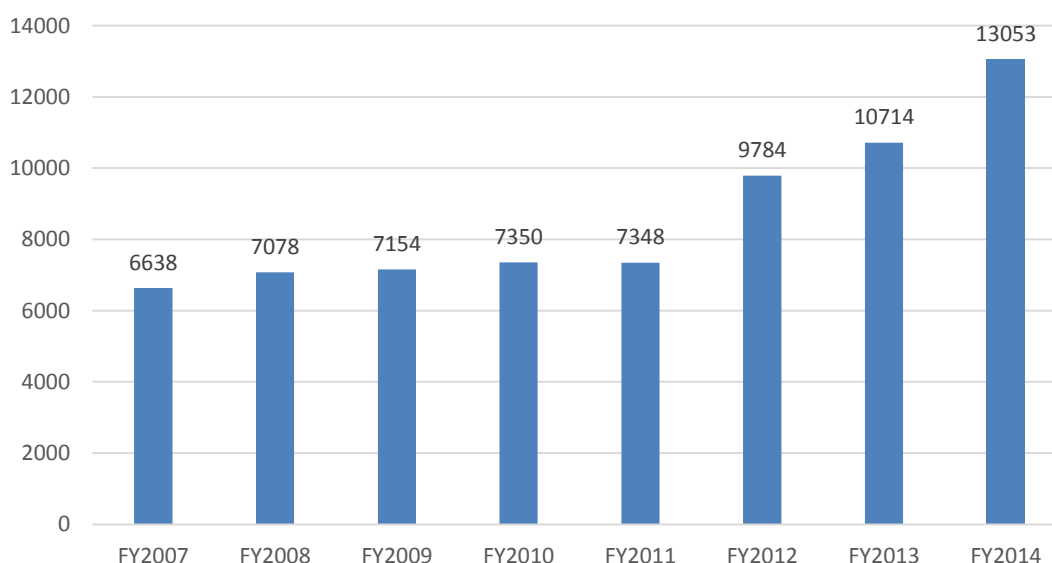
When an excavator calls the Hawaii One Call Center to schedule an excavation, the Hawaii One Call Center notifies facility operators in the area of excavation. Within five (5) working days of the notification, each facility operator must provide one of the following: (1) an indication that the facility 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, 2016, 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 2014, the Advisory Committee held quarterly meetings to deliberate on a variety of issues regarding the One Call Center.

In November 2013 and May 2014, 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 300 participants attended the training.

In FY 2014, the Hawaii One Call Center had an approximately 22 percent increase in the number of requests called in from excavators, compared to the previous year (Figure 34).

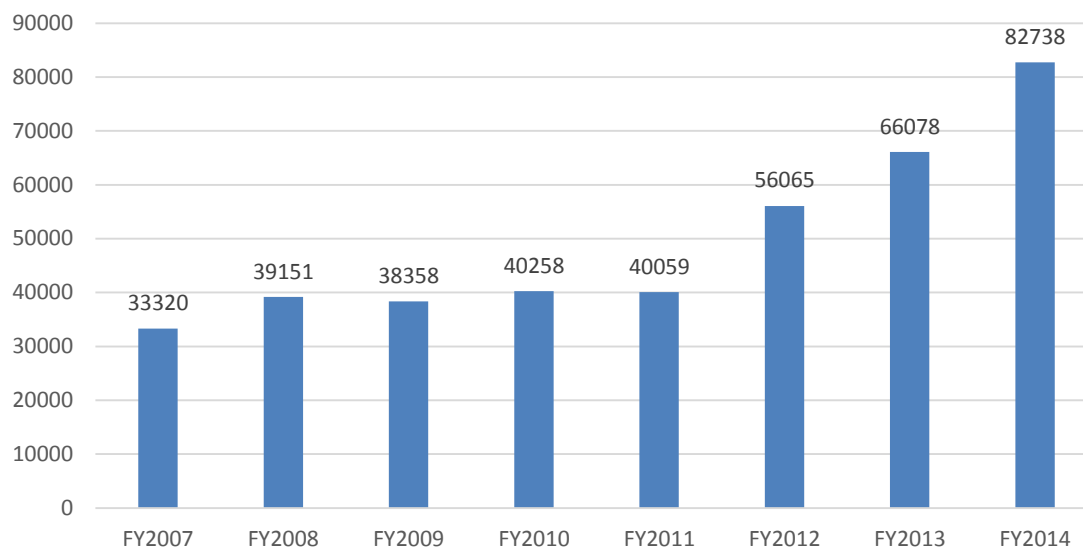
**Figure 34 - Requests Made to the Hawaii One Call Center by Excavators**



<sup>65</sup> Pilot program established by Act 141, SLH 2004; made permanent by Act 72, SLH 2009; codified in [HRS Chapter 269E](#).

The Hawaii One Call Center had a corresponding 25 percent increase in the number of requests transmitted to facility operators (Figure 35).

**Figure 35 - Requests Transmitted to Facility Operators  
by the Hawaii One Call Center**



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

## Enforcement Activities

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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 verbal and written complaints against any public utility, water carrier, motor carrier, or others subject to the Commission's jurisdiction. Verbal complaints are received by telephone, or in person at the Commission's office. There are two kinds of written complaints—formal and informal.

The Commission's rules of practice and procedure, Hawaii Administrative Rules ("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

In FY 2014, one formal complaint was investigated in Docket No. 2013-0171.



## Written Informal Complaints

As shown in Table 28, the Commission received a total of 169 written informal complaints in the Fiscal Year against regulated and unregulated utility and transportation companies.

**Table 28 - Total Number of Informal Complaints Received by the Commission**

	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Utilities</b>					
<b>Telecommunications</b>	<b>70</b>	<b>63</b>	<b>50</b>	<b>50</b>	<b>43</b>
Wire line (telephone)	27	30	28	24	27
Cellular and Paging	36	32	22	20	14
Other	7	1	0	6	2
<b>Electricity</b>	<b>31</b>	<b>30</b>	<b>41</b>	<b>99</b>	<b>57</b>
<b>Gas</b>	<b>7</b>	<b>4</b>	<b>3</b>	<b>8</b>	<b>3</b>
<b>Water/Sewer</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>3</b>
<b>Other</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>1</b>
<b>Transportation Carriers</b>					
<b>Water Carrier</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>Motor Carrier</b>	<b>22</b>	<b>17</b>	<b>15</b>	<b>6</b>	<b>10</b>
<b>One Call Center</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Total Complaints</b>	<b>137</b>	<b>124</b>	<b>114</b>	<b>169</b>	<b>118</b>

## 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 2014, civil citations issued totaled \$9,000. The Commission also revoked 53 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

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### Special Fund Update for Fiscal Year 2014

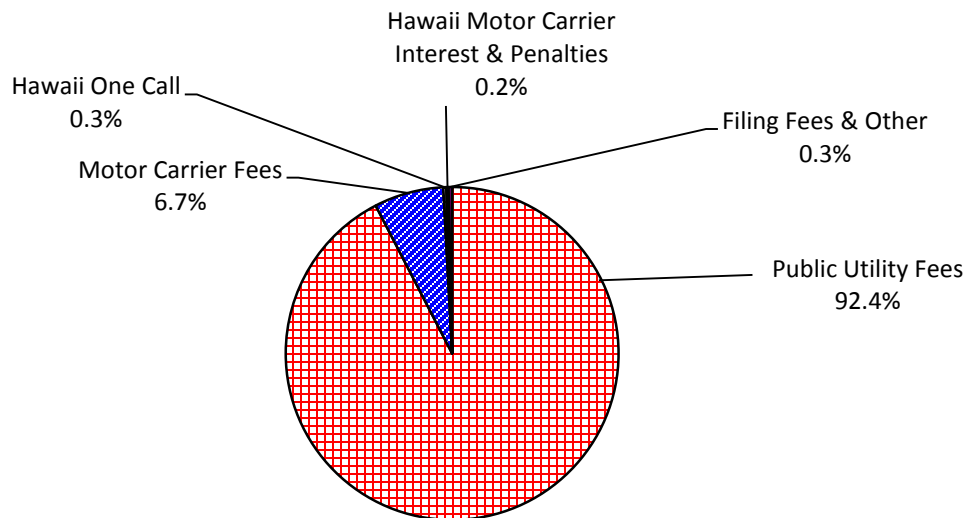
Act 226, SLH 1994, established the Commission's Special Fund to be administered by the Commission and to be used by the Commission and the Division of the Consumer Advocacy, Department of Commerce and Consumer Affairs ("Consumer Advocate") for all expenses incurred in the administration of HRS Chapters 269, 269E, 271, and 271G. 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 §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 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.

This update on the Special Fund is provided to the legislature as required by HRS §269-33(c), as amended by Act 24, SLH 2013.

### Revenue

Total FY 2014 Special Fund revenues of \$22,924,028, reflect an increase of 5.3% compared to FY 2013 revenues. The Commission collected \$21.2 million in public utility fees for FY 2014, 5.3 percent more than FY 2013 public utility fees. Motor carrier fees of \$1.5 million collected in FY 2014 were 3 percent more than the fees collected in FY 2013. The revenues derived from each source of income for FY 2014 are shown in Figure 36 and Table 29.

**Figure 36 - Public Utilities Commission Special Fund FY 2014 Revenues****Table 29- Public Utility Commission Special Fund Revenues, FY 2013 and 2014**

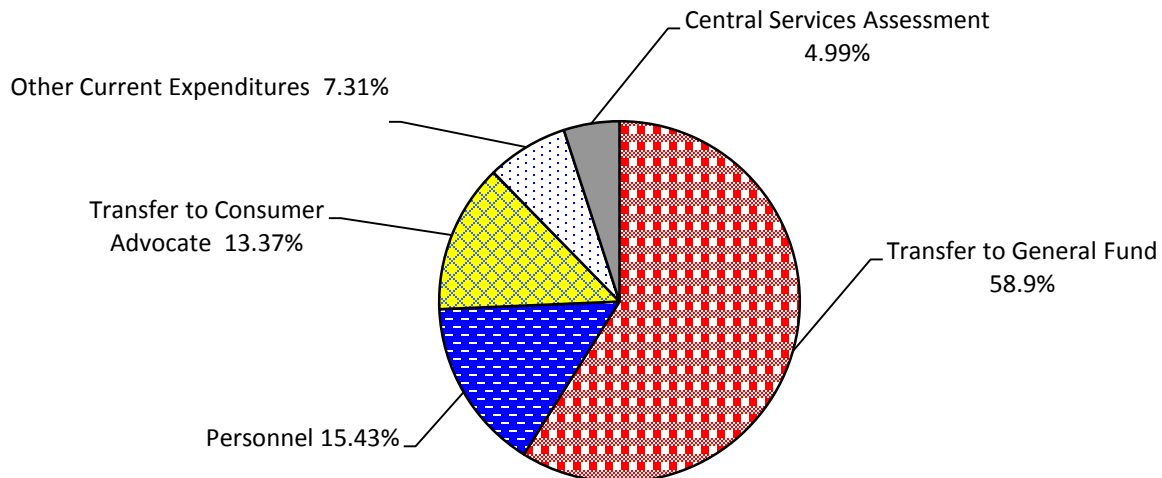
Description of Revenues	FY 2013	FY 2014
Public Utility Fees	20,111,411	21,182,772
Motor Carrier Fees	1,500,947	1,546,675
Hawaii One Call Center Fees	66,353	65,423
Motor Carrier Interest/Penalties	35,775	36,949
Hawaii Motor Carrier Act Penalties	26,988	12,883
Filing Fees & Other*	20,399	79,326
<b>Total Revenues</b>	<b>\$ 21,761,873</b>	<b>22,924,028</b>
<i>*Includes transfer of \$34,223 from DAGS project account 22-13-7475/7519 for unused cash from Oahu Office Renovations Project</i>		
<i>(Note: All figures are rounded to the nearest dollar.)</i>		

## Expenditures and Transfers

In FY 2014, a total of 77.26 percent of the Special Fund revenues were transferred: over half (58.9 percent) to the General Fund, 13.37 percent to the Consumer Advocate, and 4.99 percent for Central Services Assessment. As shown in Table 30 and Figure 37, Commission direct expenditures (personnel and other current expenditures), accounted for only 22.74 percent of total Special Fund revenues.

**Table 30 – FY 2014 Amount Expended and Transferred**

FY 2014	Amount	Percent
Expenditures	5,212,985	22.74%
Transfers	17,711,043	77.26%

**Figure 37 - Public Utilities Commission Special Fund FY 2014 Expenditures and Transfers**

The Commission expended \$3,536,428 for personnel, and \$1,676,557 for other current expenditures.

Transfers included \$3,065,285 to the Office of the Consumer Advocate to cover its operating expenses; and \$1,144,332 to Department of Accounting and General Services ("DAGS") Central Services Division pursuant to HRS Section 36-37. In FY 2014, the Commission transferred the Special Fund's excess balance of \$13,501,426 to the general fund, an increase of 11.1 percent over FY 2013, pursuant to Section 269-33, HRS. Table 31 shows the breakdown of all Commission expenditures and transfers out of the Special Fund in FY 2013 and FY 2014.

**Table 31- Public Utilities Commission Special Fund Expenditures and Transfers, FY 2013 and 2014**

Description of Expenditures and Transfers	FY 2013	FY 2014
Personnel (Appn. Acct. S-14-352-O)	3,236,240	3,536,428
Other Current Expenditures (includes DAGS Transfer)	2,578,698	1,676,557
Transfer to Consumer Advocate	2,701,465	3,065,285
Central Services Assessment	1,087,895	1,144,332
Transfer to General Fund	12,157,575	13,501,426
Total	\$ 21,761,873	\$ 22,924,028
<i>(Note: All figures are rounded to the nearest dollar.)</i>		

Total Special Fund expenditures and transfers (excluding General Fund transfer) for FY 2014 increased 7.2 percent over FY 2013, primarily due to the increase in Personnel Services and transfers to Central Services and the Consumer Advocate.

## Summary of Power Purchase Agreements

As required by Act 260, SLH 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.

**Table 32 - Summary of Power Purchase Agreements in Effect on Oahu, FY 2014**

OAHU Facility Name	Export Capacity (MW)	Facility Type	Average FY14 Energy Price (\$ per kWh) <sup>a</sup>	Time of Production	Fuel / Energy Source	Identifying Docket or In Service Date	End Date / Term
Kahuku Wind Power <sup>b</sup>	30	As Available	\$0.1866	Any	Wind	<a href="#">2009-0176</a>	5/31/2031
Kawailoa Wind	69	As Available	\$0.2064	Any	Wind	<a href="#">2011-0224</a>	11/30/2032
Kalaeloa Renewable Energy Park	5	As Available	\$0.2138	Any	Solar	<a href="#">2011-0384</a>	11/30/2033
Kalaeloa Solar Two	5	As Available	\$0.1941	Any	Solar	<a href="#">2011-0051</a>	12/31/2032
Kapolei Sustainable Energy Park	1	As Available	\$0.2360	Any	Solar	<a href="#">2011-0185</a>	12/31/2031
Chevron USA Hawaiian Refinery <sup>c</sup>	9.6	As Available	\$0.2118 \$0.1559	On Peak Off Peak	Refinery Gas / Naphtha	Docket No. 6717. In service 8/2/1990.	Year to year
Hawaii Independent Energy (formerly Tesoro Hawaii) <sup>d</sup>	18.5	As Available	\$0.2048 \$0.1533	On Peak Off Peak	Refinery Gas / Naphtha	Docket No. 5025. In service 12/28/1983.	Year to year
AES Hawaii <sup>e</sup>	180	Firm	\$0.0520	Any	Coal	Docket No. 6177. In service 9/1/1992.	9/1/2022
Kalaeloa Partners <sup>f</sup>	208	Firm	\$0.1941	Any	LSFO*	Docket No. 6378. In service 5/23/1991.	5/23/2016
H-POWER	68.5	Firm	\$0.1606 \$0.1175	On Peak Off Peak	Waste	<a href="#">2012-0129</a>	4/2/2033
Feed-in Tariff	Varied	As Available	\$0.2059	Any	Solar	<a href="#">2008-0273</a>	20 years
Avoided Energy Cost Rate			\$0.2118 \$0.1559	On Peak Off Peak	Docket No. 7310, Decision and Order No. 24086; <a href="#">2008-0069</a>		
a Based on 12-month averages of actual energy costs; do not include capacity payments (if applicable). Facility was not operating between August, 2012, and July, 2013. Facility resumed operations in August, 2013, without battery energy storage adder price.							
c Temporary Agreement for 4th cogen was filed with the Hawaii Public Utilities Commission on April 9, 2013. Chevron exported a limited amount of kWh to Hawaiian Electric; however per Temporary Agreement, Hawaiian Electric did not pay for such kWh. Average Energy Price is the average of the energy cost rate filings.							
d Average Energy Price does not include reactive adjustment.							
e Energy Price based on AES Hawaii Energy Cost which includes Fuel, Variable O&M, and Fixed O&M components.							
f Energy Price based on Kalaeloa Partners Energy Cost which includes Fuel, Nonfuel, and Additive components.							

Table 33 - Summary of Power Purchase Agreements in Effect on Hawaii Island, FY 2014

HAWAII Facility Name	Export Capacity (MW)	Facility Type	Average FY14 Energy Price (\$ per kWh) <sup>a</sup>	Time of Production	Fuel / Energy Source	Identifying Docket or In Service Date	End Date / Term
Hawi Renewable Development	10.56	As Available	\$0.1949	On Peak	Wind	<a href="#">2004-0016</a>	5/18/2021
			\$0.1554	Off Peak			
Hamakua Energy Partners	60	Firm	\$0.2191	Any	Naphtha	<a href="#">1998-0013</a>	12/31/2030
Keahole Solar <sup>b</sup>	0.5	As Available	\$0.000	Any	Solar	<a href="#">2008-0186</a>	12/27/2019
Puna Geothermal Venture (PGV)	25	Firm	\$0.1959	On Peak	Geo- thermal	<a href="#">2011-0040</a>	12/31/2027
			\$0.1564	Off Peak			
	5	Firm	\$0.1196	Any			
	8	Cycling	\$0.0913	On Peak			
			\$0.0608	Off Peak			
Tawhiri Power (Pakini Nui)	20.5	As Available	\$0.1791	On Peak	Wind	<a href="#">2004-0346</a>	4/2/2027
			\$0.1481	Off Peak			
Wailuku River Hydro	12.1	As Available	\$0.1964	On Peak	Hydro	6956	5/12/2023
			\$0.1565	Off Peak			
Feed-in Tariff	Varied	As Available	\$0.2306	Any	Solar	<a href="#">2008-0273</a>	20 years
Schedule Q <sup>c</sup>	Varied	As Available	\$0.1751	Any	Docket No. 7310 Decision and Order No. 24086; <a href="#">2008-0069</a>		
Avoided Energy Cost Rate (>100 kW)			\$0.1958	On Peak	Docket No. 7310 Decision and Order No. 24086		
			\$0.1563	Off Peak			
a Based on 12-month averages of actual energy costs; do not include capacity payments (if applicable).							
b Facility was not operating during this period July 2013 to June 2014.							
c Includes County of Hawaii Department of Water Supply; Palm Valley Farm; Wenko Energy.							

**Table 34 - Summary of Power Purchase Agreements in Effect on Maui Island, FY 2014**

MAUI Facility Name	Export Capacity (MW)	Facility Type	Average FY14 Energy Price (\$ per kWh) <sup>a</sup>	Time of Production	Fuel / Energy Source	Identifying Docket or In Service Date	End Date / Term <sup>b</sup>
Hawaiian Commercial & Sugar Company	16	Firm	\$0.2050	On Peak	Biomass and Hydro	6616, 6374, 4072	12/29/2015
			\$0.1849	Off Peak			
Kaheawa Wind Farm	30	As Available	\$0.1322	On Peak	Wind	<a href="#">2004-0365</a> 6/9/2006	6/9/2026
			\$0.1243	Off Peak			
Kaheawa Wind Power II	21	As Available	\$0.2341	Any	Wind	<a href="#">2010-0279</a> 7/2/2012	7/2/2032
Auwahi Wind Energy	21	As Available	\$0.2026	Any	Wind	<a href="#">2011-0060</a> 12/8/2012	12/28/2032
Makila Hydroelectric Plant	0.5	As Available	\$0.2035	On Peak	Hydro	<a href="#">2005-0161</a> 9/22/2006	9/22/2026
			\$0.1850	Off Peak			
Feed-in Tariff	Varied	As Available	\$0.2227	Any	Solar	<a href="#">2008-0273</a>	20 years
Avoided Energy Cost Rate			\$0.2021	On Peak	Docket No. 7310 Decision and Order No. 24086		
			\$0.1856	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 35 - Power Purchase Agreement<sup>a</sup> in Effect on Lanai, FY 2014**

LANAI Facility Name	Facility Capacity (MW)	Facility Type	Average FY14 Energy Price (\$ per kWh)	Time of Production	Fuel / Energy Source	Identifying Docket or In Service Date	End Date / Term <sup>b</sup>
Lanai Sustainability Research, LLC	1.2	As Available	\$0.2700	Any	Solar	<a href="#">2008-0167</a> 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 36 - Summary of Power Purchase Agreements in Effect on Kauai, FY 2014

KAUAI 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
Gay & Robinson	1	Baseload	\$0.1644	Any	Hydro	<a href="#">2000-0086</a>	Year to year
Green Hydro	0.13	As Available	\$0.2216	Any	Hydro	<a href="#">2007-0059</a>	8/20/2029
Kapaa Solar	1	As Available	\$0.2000	Any	Solar	<a href="#">2010-0179</a>	3/4/2031
Kauai Coffee	4.8	Baseload	\$0.1956	Any	Hydro	<a href="#">2012-0150</a>	1/31/2033
Kekaha Ag Assoc	1.5	Baseload	\$0.1325	Any	Hydro	<a href="#">2001-0055</a>	Year to year
McBryde PV	6	As Available	\$0.2000	Any	Solar	<a href="#">2011-0180</a>	12/3/2032
MP2 Kaneshiro	0.300	As Available	\$0.2000	Any	Solar	<a href="#">2011-0362</a>	1/4/2033
Pioneer PV	0.25	As Available	\$0.1067	Any	Solar	<a href="#">2010-0122</a>	11/18/2015
Avoided Energy Cost Rate			\$0.2441	Docket No. 7310 Decision and Order No. 24086			



## Evaluation of Hawaii's Renewable Energy Policy and Procurement

Under a State Electricity Regulators Capacity Assistance and Training grant funded by the U.S. Department of Energy through the National Association of Regulatory Utility Commissioners, Energy and Environmental Economics, Inc. ("E3") was retained to develop an economic framework to compare the economics of different renewable energy procurement options in the service territories of HECO, HELCO, MECO, and KIUC.

The report, *Evaluation of Hawaii's Renewable Energy Policy and Procurement*,<sup>66</sup> was completed in January 2014.

### Report Summary

E3 developed a methodology for modeling avoided costs on an hourly basis for each of the four islands included in the study (Oahu, Hawaii, Maui, and Kauai). These avoided costs were compared to the cost of renewable electricity received via agreements such as utility-scale contracts, net energy metering,<sup>67</sup> or feed-in tariffs. This comparison between the calculated value of the electricity and the amount paid to procure the renewable electricity was used to indicate the net cost or value to the system.

E3 found that, given the high costs of purchasing petroleum fuels for energy on the islands, there are many renewable technology types that can lower utility costs and provide net value to ratepayers. However, E3 also found that not every approach to procuring renewable energy and deploying it in Hawaii provides net value to ratepayers. For example, the study found that biofuel resources are more costly than conventional generation and other renewable options. Customer-owned generators that receive compensation for energy sold to the system through NEM tariffs at full retail credit were also found to impose costs that exceed the avoided costs. The report also states that there is value in keeping diversity of geographic locations and technology types to smooth out the production of renewable energy and reduce the volatility on the system.

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

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<sup>66</sup> The report, *Evaluation of Hawaii's Renewable Energy Policy and Procurement* is available online at: <http://puc.hawaii.gov/wp-content/uploads/2013/04/HIPUC-Final-Report-January-2014-Revision.pdf>

<sup>67</sup> For 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

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 existing oil- and coal-fired generating units with capacities of 25 MW or greater.<sup>68</sup> Changes to the standards for new facilities were announced on March 29, 2013.<sup>69</sup>

The HECO Companies were granted a one year MATS compliance extension, which places the compliance deadline at April 16, 2016. The HECO Companies may apply for an additional one year extension based on an evaluation criteria set by the EPA.

The HECO Companies have proposed to fuel switching to meet MATS requirements.<sup>70</sup>

### National Ambient Air Quality Standards

The National Ambient Air Quality Standards (“NAAQS”),<sup>71</sup> updated on February 9, 2010 with new limits on nitrogen dioxide emissions; on June 22, 2010 with new limits on sulfur dioxide emissions; on August 31, 2011 with new limits on carbon monoxide; and on December 14, 2012 with new limits on particulates. NAAQS will affect all of Hawaii's major combustion power plants.

The HECO Companies have proposed to comply with NAAQS through the use of liquefied natural gas (“LNG”).<sup>72</sup>

### Greenhouse Gases

On September 20, 2013, EPA issued a proposal under Section 111(b) of the Federal Clean Air Act to establish carbon pollution standards for new power plants.<sup>73</sup>

On June 18, 2014, the EPA issued proposed guidelines under Section 111(d) for States to control carbon emissions from the existing electricity production system. The EPA is scheduled to issue final

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<sup>68</sup> USEPA, “[Mercury and Air Toxics Standards](#),” and “[Power Plants Likely Covered by the Toxics Rule](#),” accessed July 26, 2013.

<sup>69</sup> USEPA, “[EPA Updates Mercury and Air Toxics Standards for New Power Plants](#),” accessed November 26, 2014.

<sup>70</sup> Hawaiian Electric Company, “Environmental Compliance,” [Hawaiian Electric Power Supply Improvement Plan](#), August 26, 2014.

<sup>71</sup> USEPA, “[National Ambient Air Quality Standards](#),” accessed July 26, 2013.

<sup>72</sup> Hawaiian Electric Company, “Environmental Compliance,” [Hawaiian Electric Power Supply Improvement Plan](#), August 26, 2014.

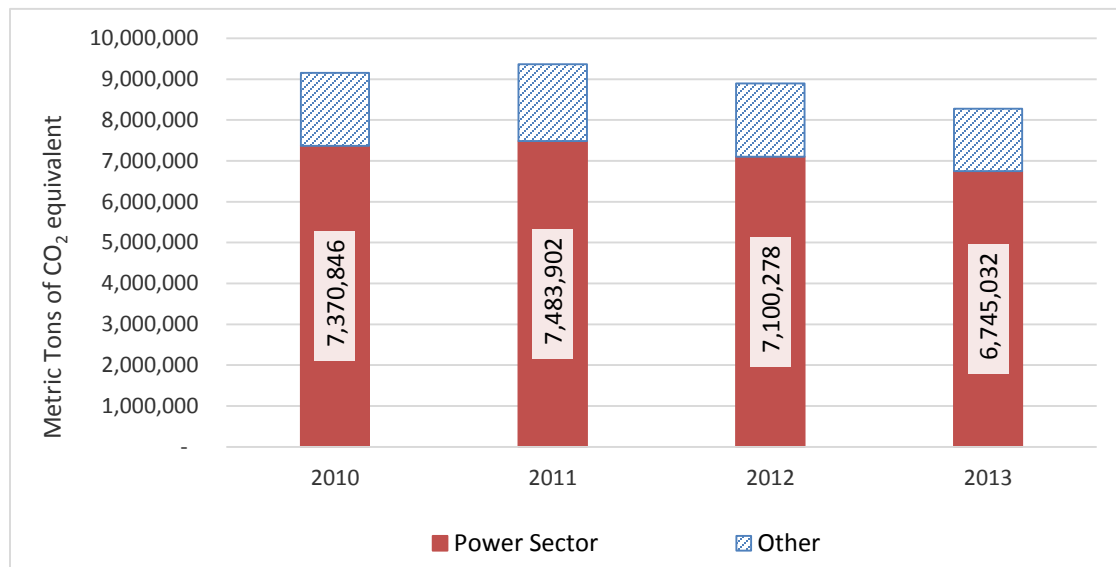
<sup>73</sup> USEPA, “[Clean Air Act Permitting for Greenhouse Gases](#),” accessed September 30, 2014.

guidelines by June 2015. States are expected to use the guidelines to develop and submit state plans to EPA by June 2016.<sup>74</sup>

Hawaii's state greenhouse gas law<sup>75</sup> requires emissions by 2020 to be less than 1990 levels.<sup>76</sup>

As shown in Figure 38, emissions from Hawaii's large electric power plants dropped 9.9 percent between calendar year 2011 and calendar year 2013. With Hawaii's current energy efficiency and renewable energy laws and standards,<sup>77</sup> it is projected that both Federal and State goals for greenhouse gas emissions reductions from the power sector will be met.

**Figure 38 - Greenhouse Gas Emissions  
Reported by Large Facilities in Hawaii, 2010-2013<sup>78</sup>**



## Fish Protection Rule

On May 19, 2014, the EPA issued its [Final Regulation to Establish Requirements for Cooling Water Intake Structures at Existing Facilities](#) to Section 316(b) of the Clean Water Act (fish protection rule).

The rule requires existing facilities designed to withdraw at least 2 million gallons per day of cooling water and use at least 25 percent of the water they withdraw exclusively for cooling purposes to reduce fish impingement.<sup>79</sup>

The fish protection rule applies to the HECO Companies' Honolulu, Kahe and Waiau electric generating stations.

No firm deadline for compliance is specified in the fish protection rule; however, facility-specific compliance schedules will be developed after completing significant technology requirements studies at the affected facilities.

<sup>74</sup> USEPA, "Carbon Pollution Standards," <http://www2.epa.gov/carbon-pollution-standards>, accessed July 25, 2013.

<sup>75</sup> Act 234, Session Laws of Hawaii 2007; [HRS §342B-71 to 73](#).

<sup>76</sup> Greenhouse Gas Emissions Reduction Task Force, [Report to the Twenty-Fifth Legislature](#), December 30, 2009.

<sup>77</sup> Honolulu Star-Advertiser, "[Local utilities: We're on board with Obama's emissions goals](#)," June 25, 2013; accessed July 25, 2013.

<sup>78</sup> USEPA, Greenhouse Gas Reporting Program website, accessed October 28, 2014.

<sup>79</sup> USEPA, "Cooling Water Intakes," accessed November 26, 2014.

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# Appendix

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## Table of Acronyms

ASAI .....	Average Service Availability Index
DBF .....	Department of Budget and Finance
CAIDI .....	Customer Average Interruption Duration Index
CFH .....	Cubic Feet per Hour
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
DCCA.....	Department of Commerce and Consumer Affairs, State of Hawaii
DER.....	Distributed Energy Resources
DG.....	Distributed Generation
DGIP .....	Distributed Generation Interconnection Plan
DMS .....	Document Management System
DR .....	Demand Response
DSM .....	Demand-side Management
E3 .....	Energy and Environmental Economics, Inc.
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
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
GIF .....	Green Infrastructure Fee
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.
HRS .....	Hawaii Revised Statutes
IDRPP .....	Integrated Demand Response Portfolio Plan
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), amount of energy produced or used over a time period
LNG .....	Liquefied Natural Gas
MATS .....	Mercury Air Toxics Standard
MECO .....	Maui Electric Company, Limited
MW .....	Megawatt: 1,000,000 watts, a measure of instantaneous energy capacity or demand
MWh .....	Megawatt-hour: 1,000,000 watt-hours, amount 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
PPA.....	Power Purchase Agreement
PSIP .....	Power Supply Improvement Plan
PV / photovoltaic ..	A system that generates electricity from the sun (solar power)
PUC .....	Public Utilities Commission, State of Hawaii
RFP .....	Request for Proposals
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
USF .....	Universal Service Fund

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## 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 45.

### HECO

For completeness, the two tables below (Table 37, all events, and Table 38, normalized) are similar to those presented on page 47.

**Table 37 - HECO Annual Service Reliability Indices – All Events, by Year**

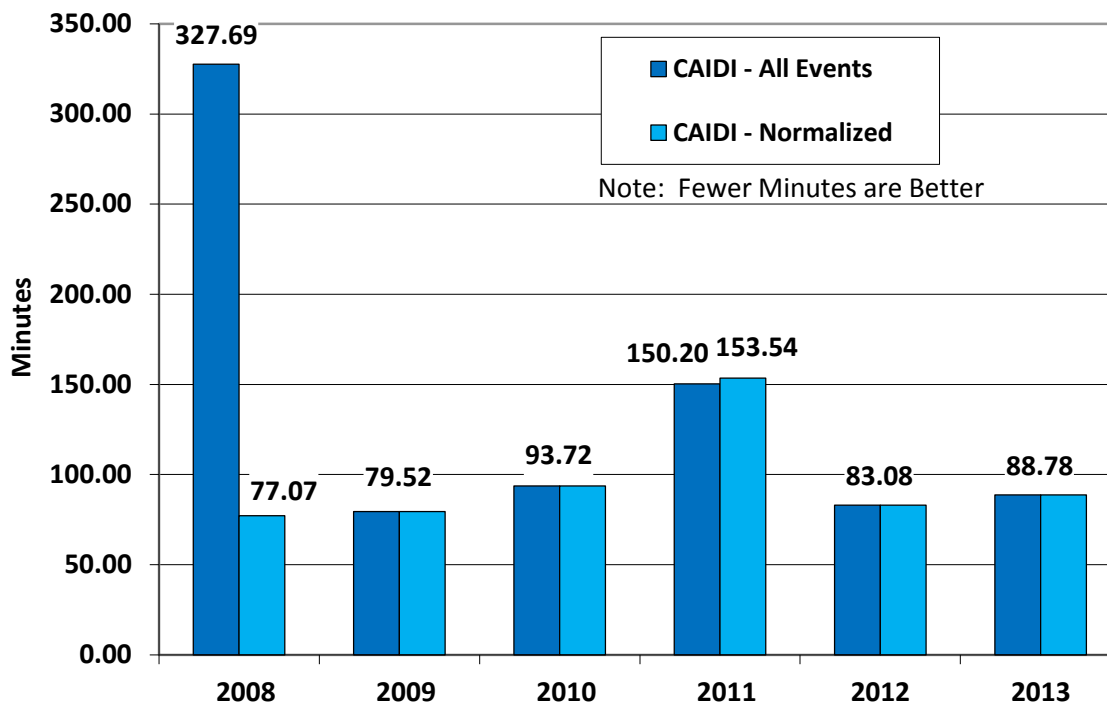
	2008	2009	2010	2011	2012	2013
Number of Customers	294,371	294,802	295,637	296,679	297,598	298,920
Customer Interruptions	729,784	333,908	361,334	502,252	407,197	409,516
Customer-Hours Interrupted	3,985,756	442,546	564,424	1,257,338	563,807	605,964
SAIDI (Minutes)	812.39	90.08	114.55	254.59	113.67	121.63
CAIDI (Minutes)	327.69	79.52	93.72	150.20	83.08	88.78
SAIFI (Interruptions per Customer)	2.479	1.133	1.222	1.693	1.368	1.370
ASAI (Percent)	99.846	99.983	99.978	99.952	99.978	99.977

**Table 38 - HECO Annual Service Reliability Indices – Normalized, by Year**

	2008	2009	2010	2011	2012	2013
Number of Customers	294,371	294,802	295,637	296,679	297,598	298,920
Customer Interruptions	382,124	333,908	361,334	408,326	407,197	409,516
Customer-Hours Interrupted	490,842	442,546	564,424	1,044,904	563,807	605,964
SAIDI (Minutes)	100.05	90.08	114.55	211.32	113.67	121.63
CAIDI (Minutes)	77.07	79.52	93.72	153.54	83.08	88.78
SAIFI (Interruptions per Customer)	1.298	1.133	1.222	1.376	1.368	1.370
ASAI (Percent)	99.981	99.983	99.978	99.960	99.978	99.977
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 39 shows the CAIDI (all events and normalized) for the past six years. The average duration of a customer's outage in 2013 was 88.78 minutes, a 7 percent increase compared to the 2012 CAIDI of 83.08 minutes.

Figure 39 - HECO Customer Average Interruption Duration Index (CAIDI), by Year



The following two events added over 9 minutes to the 2013 CAIDI, which was well over the 5 minute increase from the 2012 CAIDI:

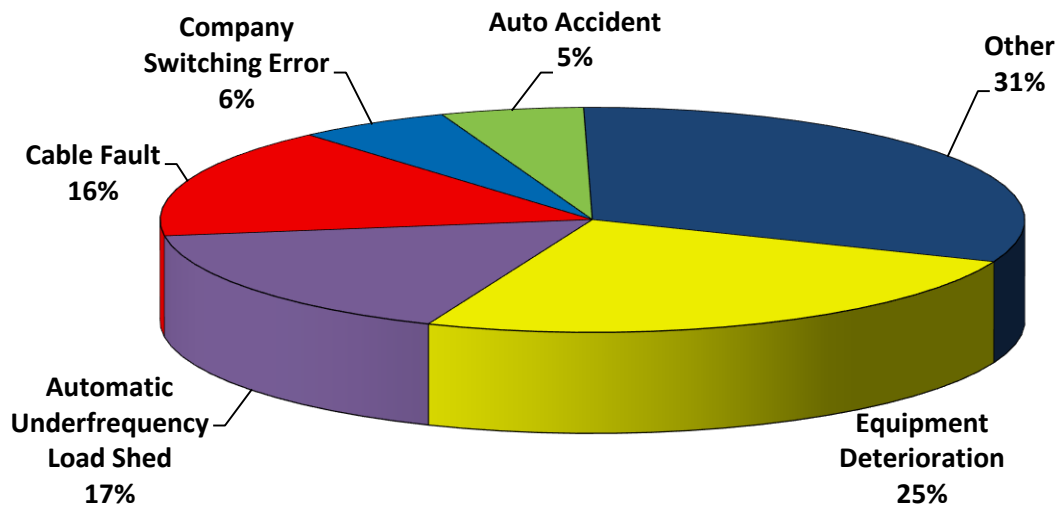
- February 17, 2013 – Broken switch hardware fell into conductors atop the Kamehame Ridge in the Koolau Mountain Range affecting 12,691 customers and lasting from a momentary interruption to 4 hours and 39 minutes. This incident added nearly 6 minutes to the annual 2013 CAIDI.
- October 14, 2013 – A broken strain insulator on Woodlawn Drive caused the attached conductor line to fall affecting about 5,210 customers and lasting from a momentary interruption to 7 hours and 7 minutes. This incident added nearly 4 minutes to the annual 2013 CAIDI.

HECO's top five outage categories for 2013, by number of customers affected, equate to about 69 percent of the total customer interruptions in 2013 and are shown in Table 39 and Figure 40.

Table 39 - HECO's Top 5 Outage Causes, 2013

Rank	Outage Category	Sample Causes
1	Equipment Deterioration	Failed, broken, corroded equipment
2	Automatic Underfrequency Load Shed	Loss of generation, major disruptions to distribution
3	Cable Fault	Underground equipment failures
4	Company Switching Errors	Errors during activities to reroute power for maintenance purposes
5	Auto Accident	Vehicular contact with poles, vaults, and support structures

Figure 40 - HECO 2013 Outage Causes, by Number of Customers Affected



The "Other" category in Table 40 accounts for 31 percent of all customer interruptions in 2013 and includes such outage causes as "Trees/Branches in Lines," "Animal in Lines," "Flashover," "Transfer Load Maintenance," and "Customer Maintenance." A complete list of the outage causes and their approximate percentages that are included in the "Other" category is provided in Table 40.

Table 40 - "Other" Causes of HECO Outages, 2013 <sup>80</sup>

OUTAGE CAUSE	%	OUTAGE CAUSE	%
Trees/Branches in Lines	5.30%	Transformer Failure	0.54%
Company Personnel Error	3.30%	Contamination Flashover	0.25%
Forced Maintenance	3.14%	Transform Overload	0.24%
Scheduled Maintenance	2.69%	Overgrown Vegetation	0.23%
Mylar Balloon	2.43%	Equipment Overload	0.17%
Animal in Lines	2.07%	Other	0.13%
Faulty Equipment Operation	2.02%	Man in Lines	0.03%
Construction Accident	1.95%	Customer Equipment	0.01%
Lightning	1.76%	System Load Maintenance	0.01%
Unknown	1.51%	Fire	0.01%
High Winds	1.42%	Vandalism	0.00%
Foreign Object in Lines	0.77%	Equipment Rot Or Termites	0.00%
Flashover	0.76%	Landslide/Flooding	0.00%
Moving Equipment Accident	0.68%	Transfer Load Maintenance	0.00%

<sup>80</sup> Table 40 provides the outage causes and their approximate percentage that comprise the "Other" category shown in Figure 40 for HECO outages for 2013. The approximate percentage for those outage causes were derived from the "Hawaiian Electric Company Sustained Interruption Summary" found in the Hawaiian Electric Companies Annual Service Reliability Reports for 2013, Attachment 1, page 10 of 15, Attachment A. More specifically, each "Customer Interruptions" value attributed to an outage cause was divided by the "Customer Interruptions" value for all outage causes and expressed as a percent. Although 0.00% is shown for "Vandalism," "Equipment Rot Or Termites," "Landslide/Flooding," and "Transfer Load Maintenance," those outage causes have 9, 5, 3, and 1 customer interruptions, respectively, attributed to them.

The top five outage cause factors for 2013 were similar to those for 2012, except that for 2013 “Company Switching Error” replaced “High Winds.”

The total number of customer interruptions in 2013 was 409,516 compared with 407,197 in 2012. In the six-year period, 2013 had the highest number of interruptions. However, it was the second highest in normalized SAIFI indicating the increase in customers served. The number of interruptions due to “Equipment Deterioration” went from 59,320 in 2012 to 102,637 in 2013, an increase of 73 percent. The number of customer interruptions due to “Automatic Underfrequency Load Shed” increased from 53,424 in 2012 to 67,586 in 2013, a 27 percent increase. All of the “Automatic Underfrequency Load Shed” interruptions were caused by a single non-utility loss of generation event on April 2, 2013. In contrast, the number of customer interruptions due to “Cable Fault” decreased by 27 percent from 88,965 in 2012 to 65,201 in 2013; “Auto Accidents” decreased by 12 percent from 24,790 in 2012 to 21,915 in 2013; and “High Winds” decreased by 85 percent from 37,807 in 2012 to 5,818 in 2013. The reliability improvement realized in the “High Winds” category may be attributed to the pole replacement and overhead line maintenance programs and the vegetation management program.

In 2013, the following three events resulted in the loss of more than 10,000 customers:

- April 2, 2013 - Oahu experienced a load shedding event due to the loss of the island's largest generating units at the AES facility. This event caused an interruption to 67,586 customers, or 23 percent of HECO customers, with outage durations ranging from 3 minutes to 1 hour and 54 minutes.
- January 15, 2013 – A switching error de-energized a transformer at Koolau Substation. This event caused interruption to 13,182 customers and lasted 25 minutes.
- February 17, 2013 - Broken switch hardware affected 12,691 customers.

Figure 41 shows the SAIFI (all events and normalized) for the past six years. It shows that the SAIFI of 1.370 for 2013 was the second worst normalized performance in the past six years, increasing 0.15 percent from the 1.368 SAIFI in 2012.

Figure 41 - HECO System Average Interruption Frequency Index (SAIFI), by Year

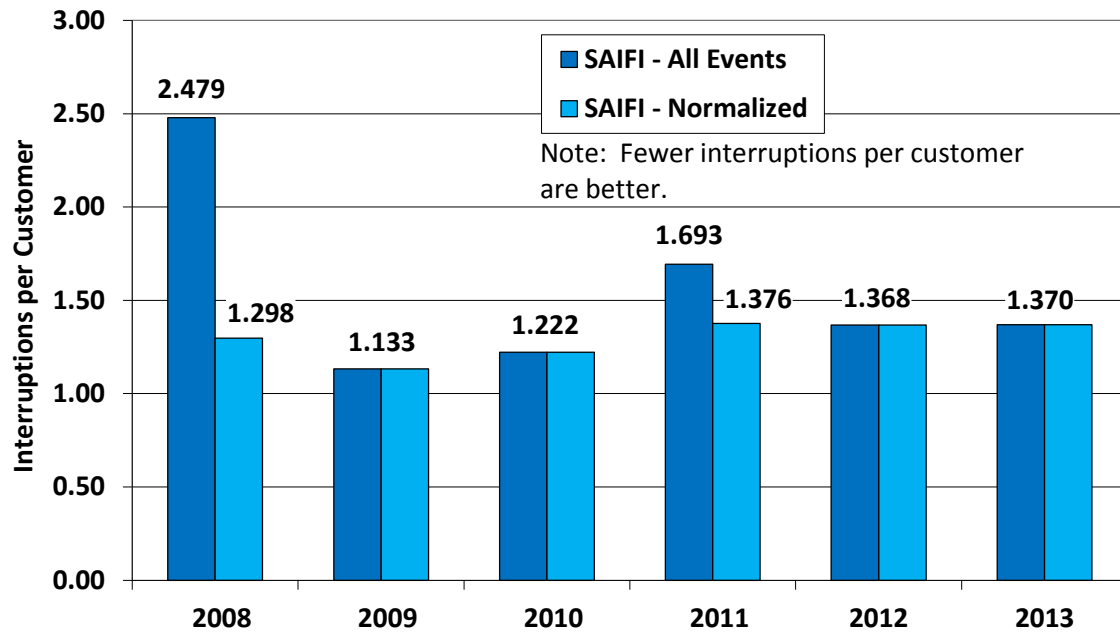
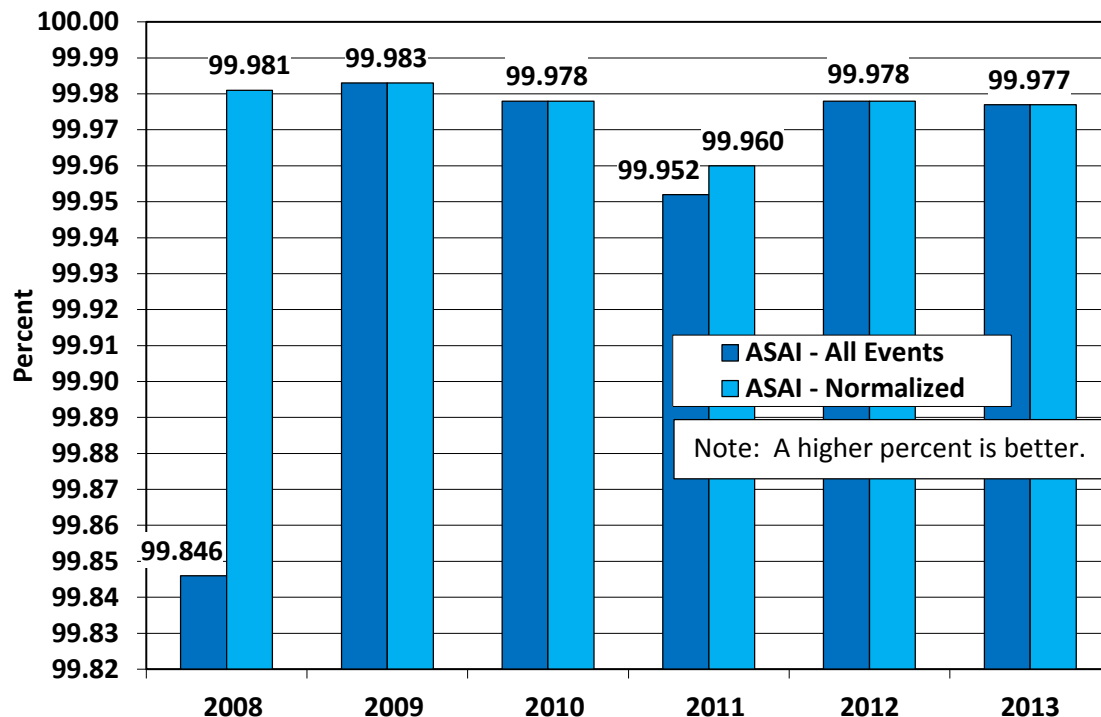


Figure 42 shows that HECO's 2013 ASAI of 99.977 percent decreased slightly compared to the 2012 ASAI of 99.978 percent. This difference of availability is about 2300 less hours of availability to a customer base of approximately 1300 more customers than in 2012.

Figure 42 - HECO Average Service Availability Index (ASAI), by Year



## HELCO

For completeness, the two tables below (Table 41, all events, and Table 42, normalized) are similar to those presented on page 48.

**Table 41 - HELCO Annual Service Reliability Indices – All Events**

	2008	2009	2010	2011	2012	2013
Number of Customers	79,386	79,679	80,171	80,807	81,537	82,074
Customer Interruptions	194,807	298,334	302,402	290,616	228,549	379,397
Customer-Hours Interrupted	190,314	246,916	207,607	242,120	190,395	276,798
SAIDI (Minutes)	143.37	185.93	155.30	179.70	140.10	202.35
CAIDI (Minutes)	58.67	49.66	41.19	49.99	49.98	43.77
SAIFI (Interruptions per Customer)	2.444	3.744	3.772	3.596	2.803	4.623
ASAI (Percent)	99.973	99.965	99.97	99.966	99.973	99.962

**Table 42 - HELCO Annual Service Reliability Indices – Normalized**

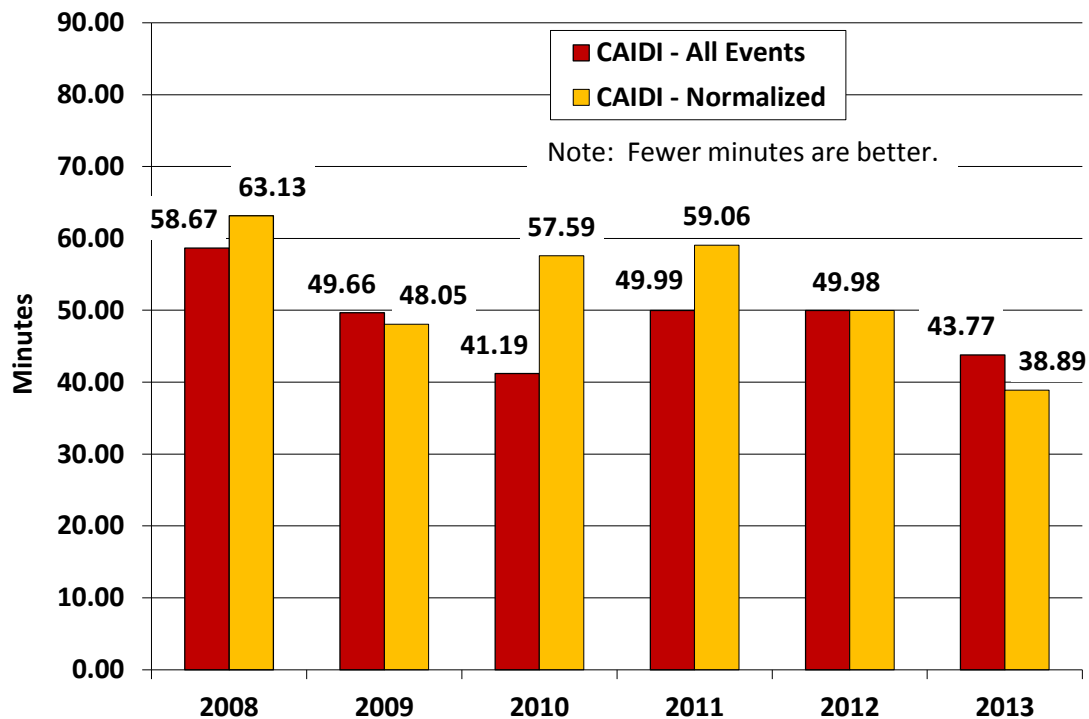
	2008	2009	2010	2011	2012	2013
Number of Customers	79,386	79,679	80,171	80,807	81,537	82,074
Customer Interruptions	179,037	246,437	176,622	236,688	228,549	241,169
Customer-Hours Interrupted	188,381	197,371	169,522	232,981	190,395	156,338
SAIDI (Minutes)	142.38	148.62	126.80	172.99	140.10	114.29
CAIDI (Minutes)	63.13	48.05	57.59	59.06	49.98	38.89
SAIFI (Interruptions per Customer)	2.255	3.093	2.203	2.929	2.803	2.938
ASAI (Percent)	99.973	99.972	99.976	99.967	99.973	99.978
2008 Data normalized to exclude the 7/2/08 underfrequency loadshedding event due to trip of HEP. 2009 Data normalized to exclude the 6/25/09 HRD underfrequency loadshedding event; the 9/22/09 Keahole ST-7 underfrequency loadshedding event; and the 12/19-20/09 lightning storm. 2010 Data normalized to exclude the 1/26/10 Puna Plant underfrequency loadshedding event; the 4/9/10 and 7/3/10 Keahole CT-5 underfrequency loadshedding events; and the 10/27/10 Keahole CT-4 underfrequency loadshedding event. 2011 Data normalized to exclude the 6/30/11 Keahole CT-4 underfrequency loadshedding event; the Keahole CT-5 and ST-7 underfrequency loadshedding events; and the 8/2/11 HEP underfrequency loadshedding event. 2013 Data normalized to exclude the 1/25/13 7600 line fault; the 3/2/13 Keahole CT-4 underfrequency loadshedding event; the 3/13/13 6500 line fault; the 6/27/13 and 8/14/13 Waimea Substation upgrade; the 7/29/13 wind storm; the 10/26/13 and 12/30/13 PGV underfrequency loadshedding events; the 11/25/13 Hill 6 underfrequency loadshedding event; and the 12/30/13 lightning storm.						

Figure 43 shows the CAIDI (all events and normalized) for the past six years. The normalized CAIDI for 2013 was 38.89 minutes, a 22 percent decrease compared to the 2012 normalized CAIDI of 49.98 minutes.

The following three events increased HELCO's 2013 CAIDI results by 1.24 minutes:

- August 10, 2013 – A fallen tree on the 34 kV Line 3400 near Volcano affected 4,568 customers and resulted in an outage duration of 9,967 customer-hours.
- March 1, 2013 – A motor vehicle accident compromised the 34 kV Line 3400 near Kurtistown, which affected 5,647 customers and resulted in an outage duration of 4,226 customer-hours.
- March 3, 2013 – An operator error led to an underfrequency load shedding event that affected 5,046 customers and resulted in an outage duration of 401 customer-hours.

**Figure 43 - HELCO Customer Average Interruption Duration Index (CAIDI), by Year**

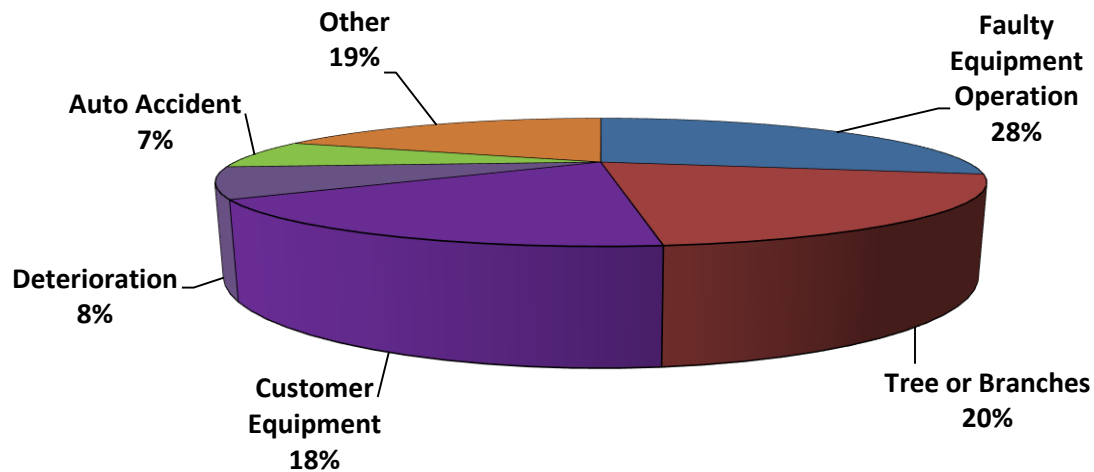


The top 5 outage categories by number of customer affected, shown in Table 43 and Figure 44, equate to about 81 percent of the total customer interruptions in 2013.

**Table 43 - HELCO Outage Categories and Sample Causes**

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

Figure 44 - HELCO 2013 Outage Causes



The "Other" category in Figure 44 accounts for 19 percent of all customer interruptions in 2013 and includes such causes "Unknown," "Operation or Switching Error," "Foreign Objects," "Man or Animal," "Scheduled Maintenance," and several other causes. A complete list of all outage causes and their approximate percentages that are included in the "Other" category is provided in Table 44.

In 2013, HELCO customers experienced 20 load shedding events, which consisted of 12 load shed events due to HELCO generating units, 3 load shed events due to loss of PGV generating units, 3 load shed events due to loss of HEP generating units, 1 load shed event due to loss of HRD, and 1 load shed event due to loss of Pakini Nui Wind Farm. Of the 20 events, 16 were caused by generation equipment and 4 were caused by T&D equipment.

Table 44 - "Other" Causes of HELCO Outages, 2013

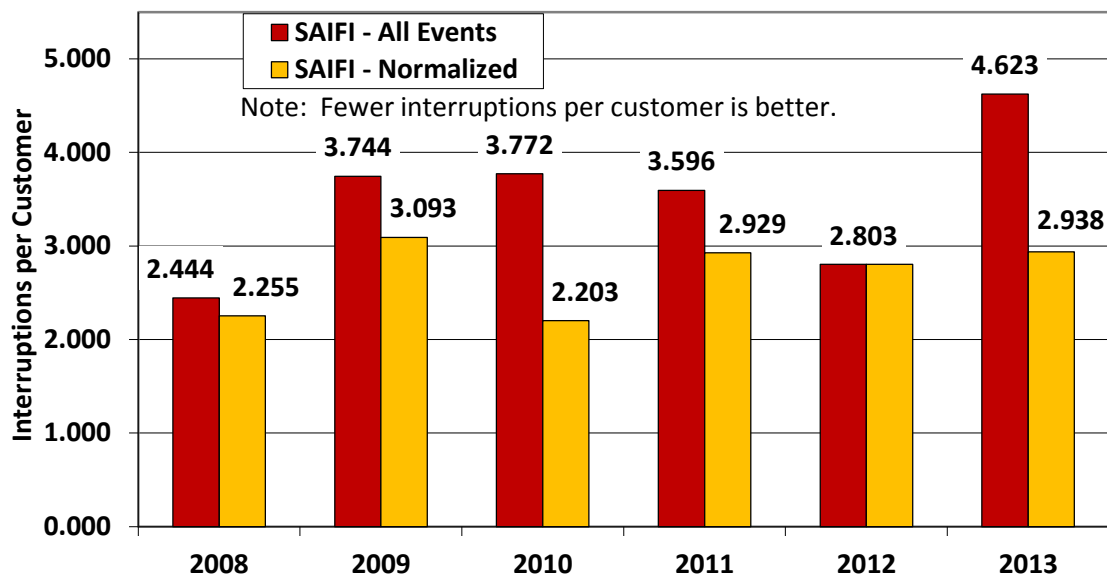
OUTAGE CAUSE	%	OUTAGE CAUSE	%
Unknown	4.90%	Tsf Failure	0.55%
Operation or Switching Error	2.72%	Forced Maintenance	0.19%
Foreign Objects	2.72%	Excavate Construction	0.13%
Man or Animal	1.92%	Equipment Contact	0.08%
Scheduled Maintenance	1.59%	Balance Load	0.04%
Cable Fault	1.51%	Loose Connection	0.03%
Other Personnel Error	1.03%	Equipment Failure	0.03%
Lightning	0.88%	Fire	0.01%
Sys Add/Removal	0.60%	Flashover	0.00%
High Wind	0.60%	Vandalism	0.00%

Figure 45 shows the SAIFI (all events and normalized) for the past six years. HELCO's 2013 normalized SAIFI of 2.938 increased as compared to the 2012 normalized SAIFI of 2.803. Figure

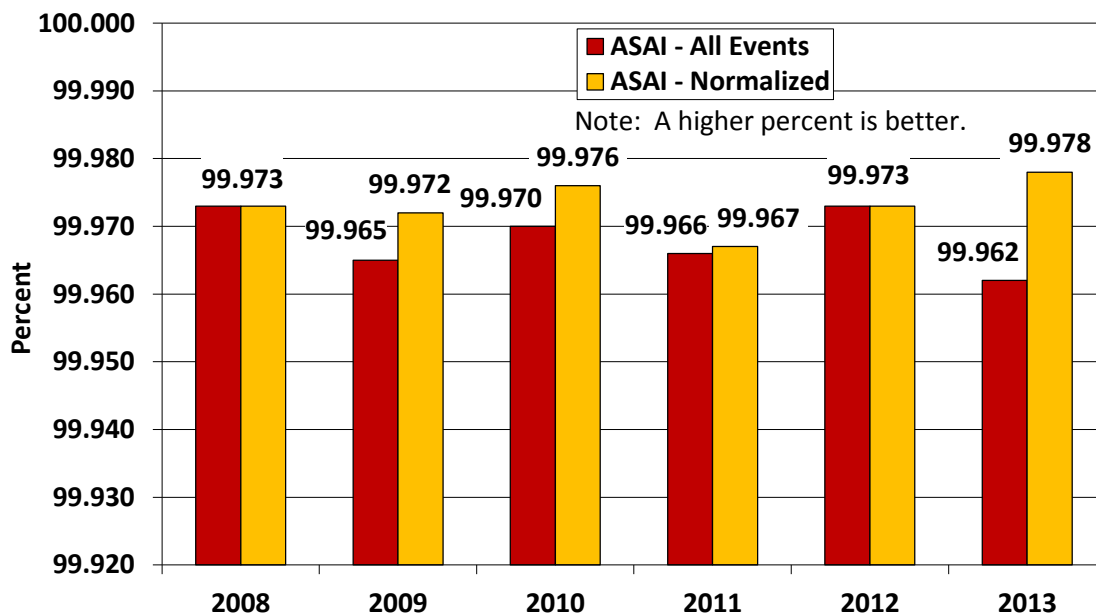


46, shows the ASAI (all events and normalized) for the past six years. HELCO's 2013 normalized ASAI of 99.978 increased as compared to the 2012 normalized ASAI of 99.973.

**Figure 45 - HELCO System Average Interruption Frequency Index (SAIFI), by Year**



**Figure 46 - HELCO Average Service Availability Index (ASAI), by Year**



## MECO

For completeness, the two tables below (Table 45, all events, and Table 46, normalized) are similar to those presented on page 49.

**Table 45 - MECO Annual Service Reliability Indices (All Islands) – All Events**

	2008	2009	2010	2011	2012	2013
Number of Customers	66,810	67,126	67,405	68,010	68,575	69,303
Customer Interruptions	163,120	124,864	131,294	170,379	195,618	138,480
Customer-Hours Interrupted	224,208.8	195,853.4	103,416.1	210,185.7	248,500.5	221,000.3
SAIDI (Minutes)	201.35	175.06	92.05	185.43	217.43	191.33
CAIDI (Minutes)	82.47	94.11	47.26	74.02	76.22	95.75
SAIFI (Interruptions)	2.442	1.860	1.948	2.505	2.853	1.998
ASAI (Percent)	99.9617	99.9667	99.9824	99.9646	99.9586	99.9635

**Table 46 - MECO Annual Service Reliability Indices (All Islands) – Normalized**

	2008	2009	2010	2011	2012	2013
Number of Customers	66,810	67,126	67,405	68,010	68,575	69,303
Customer Interruptions	75,764	108,368	67,481	101,268	81,428	71,894
Customer-Hours Interrupted	114,000.7	173,602.0	60,006.6	145,710.8	125,836.1	108,360.7
SAIDI (Minutes)	102.39	155.18	53.41	128.55	110.10	93.81
CAIDI (Minutes)	90.29	96.12	53.35	86.33	92.72	90.43
SAIFI (Interruptions)	1.134	1.615	1.001	1.489	1.187	1.037
ASAI (Percent)	99.9805	99.9705	99.9898	99.9755	99.9791	99.9821
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; and various equipment failures and faults on Lanai and Molokai.					
2009	Data normalized to exclude the 1/16/09 and 6/19/09 high winds; and 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; and 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; and 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; and various equipment failures and faults on Lanai and Molokai.					
2013	Data normalized to exclude the 01/02/13 trees in transmission lines; 07/29/13 – 07/30/13 Tropical Storm Flossie; and various equipment failures and faults on Lanai and Molokai.					

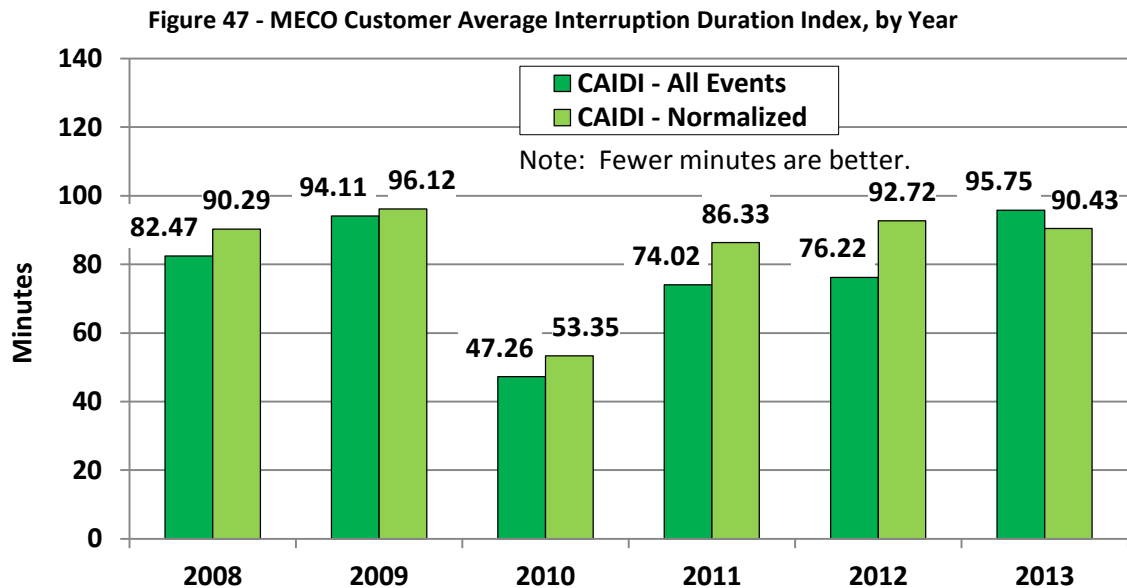


Figure 47 shows the CAIDI (all events and normalized) for the past six years. The normalized 2013 CAIDI was 90.43 minutes, a 2.47 percent decrease compared to the normalized 2012 CAIDI of 92.72 minutes.

Factors contributing to the decrease of the normalized 2013 CAIDI from the normalized 2012 CAIDI were shorter outage durations related to “Deterioration, Corrosion, Termites” (1,999.9 customer interruption hours in 2013 compared to 23,657.0 customer interruption hours in 2012), “Maintenance – Scheduled” (3,181.4 customer interruption hours in 2013 compared to 14,004.1 customer interruption hours in 2012), and “Equipment Failure” (1,269.0 customer interruption hours in 2013 compared to 7,945.8 customer interruption hours in 2012).

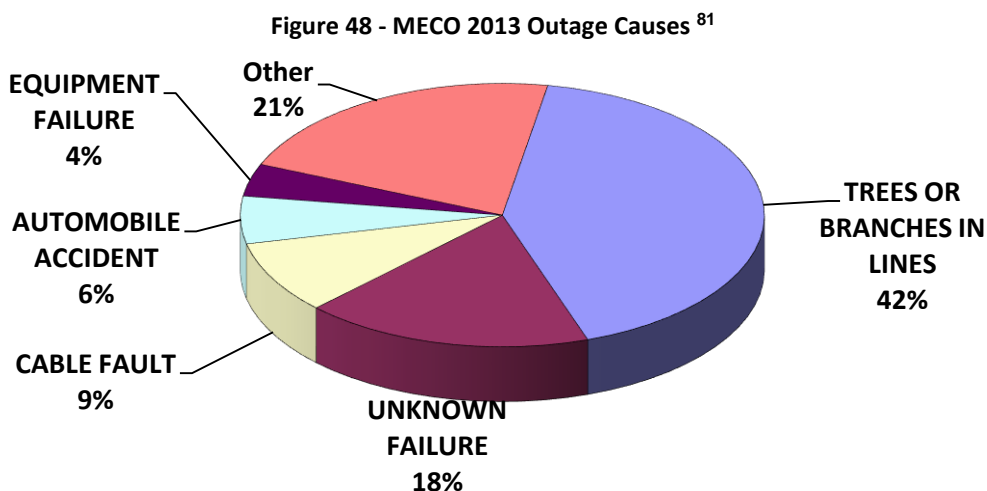
The following three events increased MECO’s 2013 CAIDI by over 15 minutes:

- January 31, 2012 – A prearranged outage to perform maintenance work on the Hana 23 kV line caused outages affecting 644 customers from 10 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 1 hour and 10 minutes to 14 hours and 24 minutes.
- December 2012 – High winds in areas across Maui and Molokai caused outages affecting 17,548 customers from 5 minutes to 21 hours and 32 minutes.

The top 5 outage categories by number of customer affected, equate to about 79 percent of the total customer interruptions in 2013 and are shown in Table 47 and Figure 48.

**Table 47 - MECO Outage Categories**

Rank	Outage Category
1	Trees or Branches in Lines
2	Unknown Failure
3	Cable Fault
4	Automobile Accident
5	Equipment Failure



The "Other" category in Figure 48 accounts for 21 percent of all customer interruptions in 2013 and includes such causes as "Faulty Operation of Equipment," "Flashover," "High Wind," "Maintenance – Forced," "Maintenance - Scheduled," "Fire," "Lightning," and "Foreign Objects in Lines or Equipment." A complete list of the causes and their approximate percentages that are included in the "Other" category is provided in Table 48.

**Table 48 - "Other" Causes of MECO Outages, 2013<sup>82</sup>**

OUTAGE CAUSE	%	OUTAGE CAUSE	%
Faulty Operation of Equipment	2.84%	Int. to Balance Load or System Conv.	0.19%
Flashover	2.50%	Excavation and Construction	0.16%
Deterioration, Corrosion, Termites	2.46%	Equipment Overload	0.14%
Maintenance – Forced	2.46%	Lightning	0.13%
Man or Animals in Line or Equipment	1.98%	System Additions or Removals	0.04%
High Wind	1.88%	Int. to Transfer Load (Out of Phase)	0.02%
Maintenance – Scheduled	1.77%	Failure of Customer's Elec Equipment	0.02%
Operator or Switching Error	1.76%	Loose Connection	0.02%
Contact by Moving Equipment	1.64%	Other Company Personnel Error	0.01%
Fire	1.22%	Foreign Objects in Lines or Equipment	0.01%
Transformer Failure	0.21%		

<sup>81</sup> Figure 48 was created using data from the "Maui Electric Company Normalized Sustained Interruption Summary–System Total" found in the Hawaiian Electric Companies Annual Service Reliability Reports for 2013, Attachment 3, at 16 (Attachment-A). The percent of each outage cause shown in Figure 48 was calculated by taking the number of customer interruptions MECO attributed to that particular outage cause, dividing it by the total number of customer interruptions for all outage causes, then expressing the result as a percent. This method of calculating the outage cause percent is consistent with the method used by both HECO and HELCO to calculate their respective top five outage cause percentages for 2013, that were submitted in each company's annual service reliability report for 2013 (i.e., Figure 40 and Figure 44, respectively).

<sup>82</sup> Percentage for "Other" causes of MECO outages for 2013 shown in Table 48 - "Other" Causes of MECO Outages, 2013 were derived from the "Maui Electric Company Normalized Sustained Interruption Summary – System Total" found in the Hawaiian Electric Companies Annual Service Reliability Reports for 2013, Attachment 3, page 16 of 25, Attachment-A. More specifically, each "Customer Interruptions" value attributed to an outage cause was divided by the value of the "Customer Interruptions" for all outage causes and expressed as a percent.

The total number of customer interruptions in 2013 was 71,894,<sup>83</sup> a decrease from the total number of customer interruptions of 81,428 that occurred in 2012. In the six-year period, 2013 was the second-best performing year for the number of interruptions. The number of customer interruptions due to "Equipment Failure" decreased by 79.2 percent from 13,768 in 2012 to 2,865 in 2013. The number of customer interruptions due to "Deterioration, Corrosion, Termites" decreased by 83.8 percent from 10,945 in 2012 to 1,770 in 2013. In contrast, there were increases in the number of customer interruptions due to "Unknown Failure," increased from 398 in 2012 to 12,823 in 2013, and "Trees or Branches in Lines," increased from 18,203 in 2012 to 30,160 in 2013.

In 2013, the following four events resulted in the loss of more than 5,000 customers.

- January 2, 2013 - Maui experienced a major outage due to trees in lines. This event caused 14,826 customers, or 21.4 percent of MECO's customers, to experience outage durations ranging from momentary to 43 minutes.
- July 29, 2013 - Maui experienced a major outage due to lightning strikes. This event caused 7,490 customers, or 10.8 percent of MECO's customers, to experience outage durations ranging from 2 hours 53 minutes to 7 hours 33 minutes.
- July 29, 2013 - Maui experienced a major outage due to lightning strikes. This event caused 5,486 customers, or 7.9 percent of MECO's customers, to experience an outage duration of 53 minutes.
- September 16, 2013 - Maui experienced a major outage due to trees in lines. This event caused 6,941 customers, or 10 percent of MECO's customers, to experience outage durations ranging from 7 minutes to 2 hours 6 minutes.

Figure 49 shows that the normalized 2013 SAIFI of 1.037 was the second-best performance in the past six years, improved from the 2012 normalized SAIFI of 1.187.

The contributing factors to the decrease of the normalized SAIFI from 2012 to 2013 were fewer outage interruptions related to "Equipment Failure" (2,865 in 2013 compared to 13,768 in 2012), "Deterioration, Corrosion, Termites" (1,770 in 2013 compared to 10,945 in 2012), and "Interruptions to Balance Load or System Conversions" (137 in 2013 compared to 6,356 in 2012).

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<sup>83</sup> [Note for person putting the report together: My calculation of the total number of customer interruptions using the data from the Attachment-A was 71,903. However, I did not change the total provided by MECO because the difference between the two numbers is, in my opinion, insignificant.]

Figure 49 - MECO System Average Interruption Frequency Index, by Year

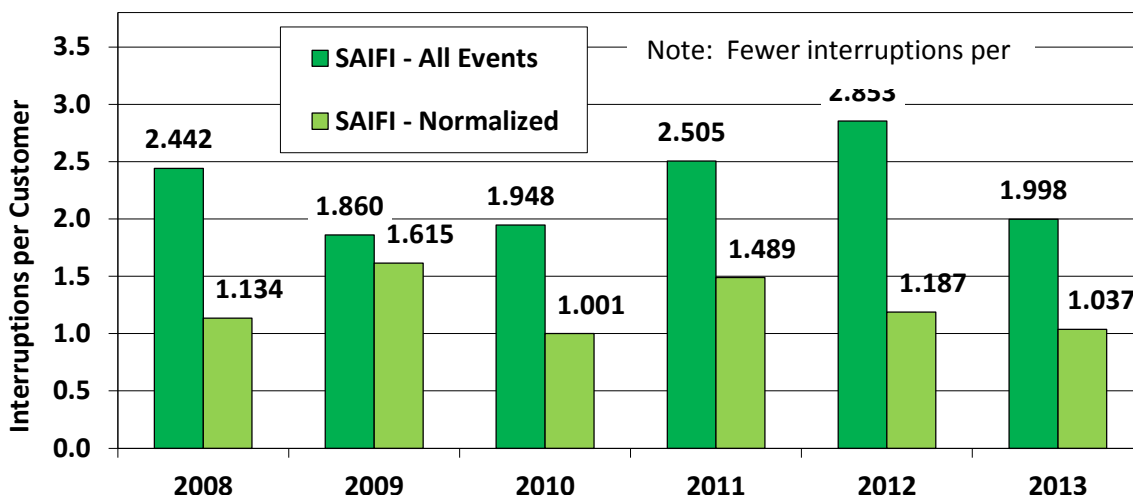
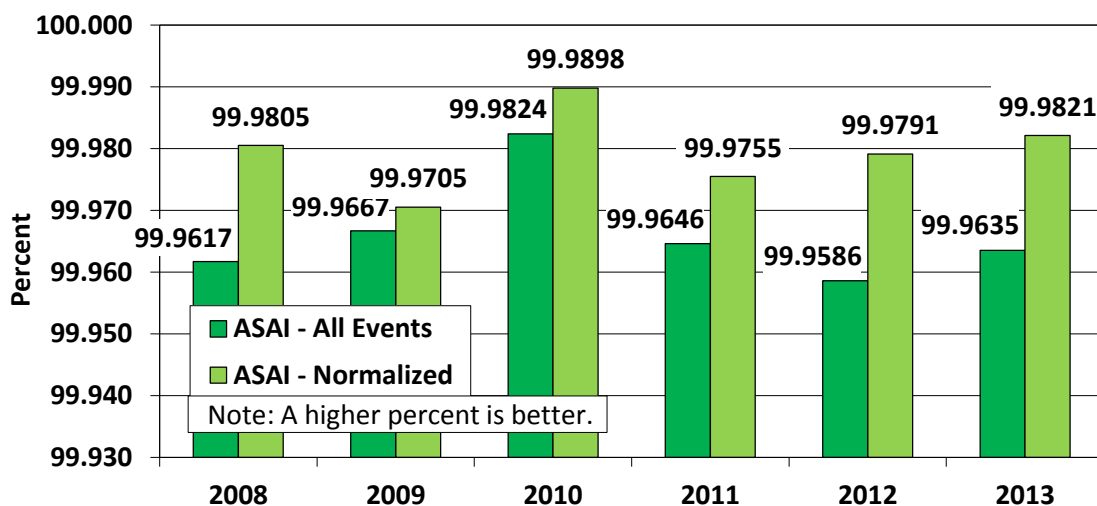


Figure 50 shows MECO's ASAI (all events and normalized) for the past six years. The normalized ASAI improved by 0.003 percentage points from 99.9791 percent in 2012 to 99.9821 percent in 2013.

Figure 50 - MECO Average Service Availability Index, by Year



Factors that contributed to the increase of the ASAI in 2013 from 2012 were a reduction of customer interruption hours related to "Equipment Failure" (7,945.8 customer interruption hours in 2012 compared to 1,269 customer interruption hours in 2013), "Maintenance – Scheduled" (14,004.1 customer interruption hours in 2012 compared to 3,181.4 customer interruption hours in 2013), and "Deterioration, Corrosion, Termites" (23,657 customer interruption hours in 2012 compared to 1,999.9 customer interruption hours in 2013).

## KIUC

Figure 51 shows KIUC's CAIDI for the past five years. The 2013 CAIDI of 36.62 minutes was the second highest of the five-year period and higher than the five-year average of 27.54 minutes.

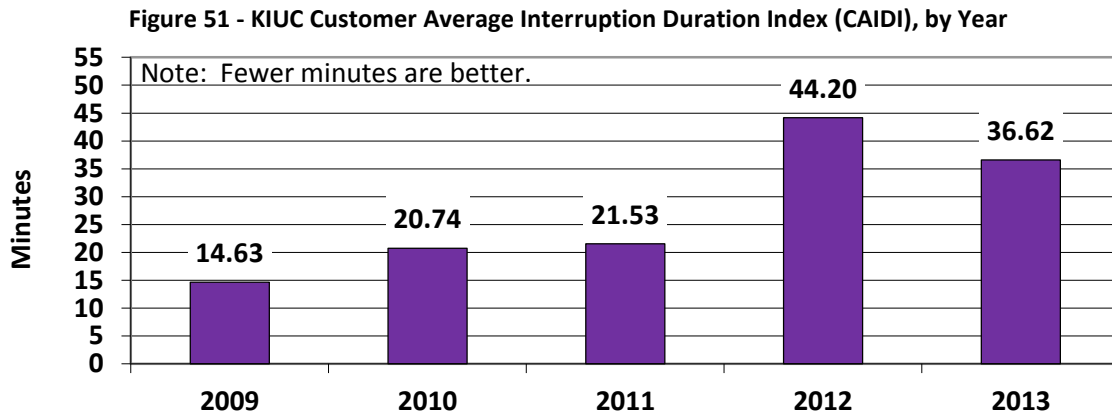


Figure 52 shows KIUC's SAIFI for the past five years. The 2013 SAIFI of 3.23 interruptions was the best of the five-year period and better than the five-year average of 4.86 interruptions.

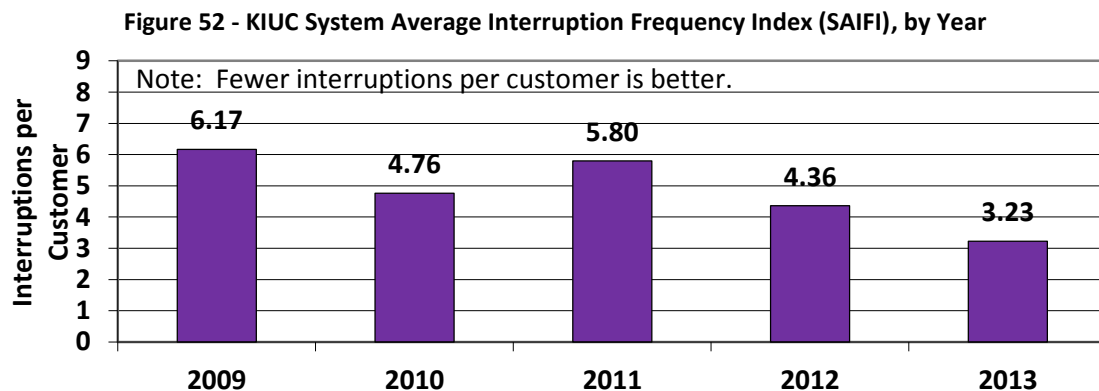
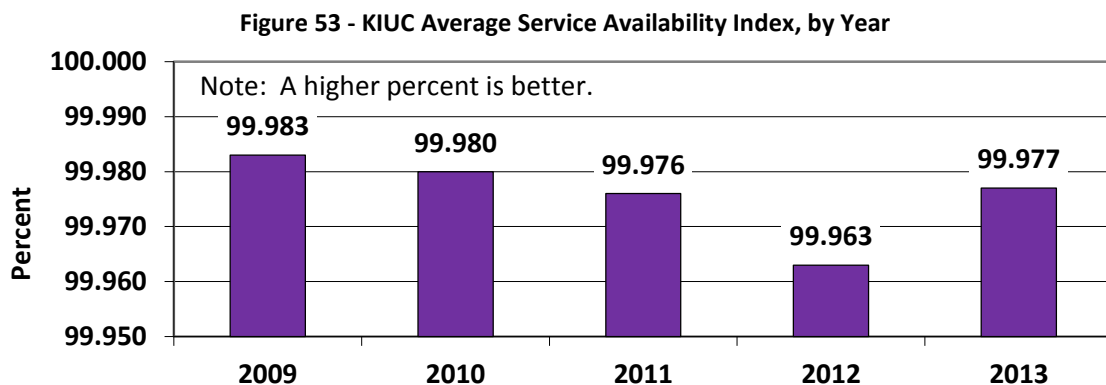
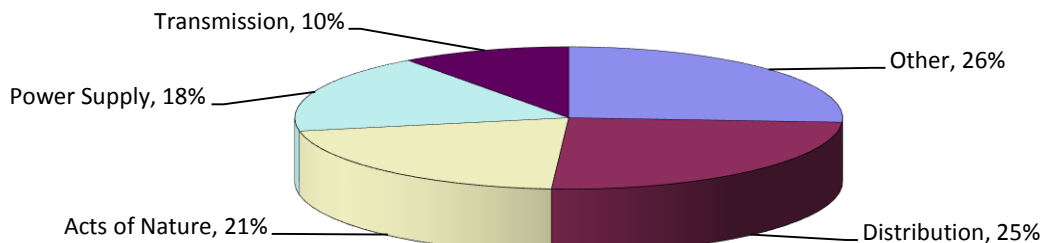


Figure 53 shows KIUC's ASAI for the past five years. The 2013 ASAI of 99.977 percent is higher than the 2011 ASAI of 99.976 percent and 2012 ASAI of 99.963 percent and nearly equal to the five-year average ASAI of 99.976 percent.



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 54. Sample causes for each category are described in Table 49.

**Figure 54 - KIUC 2012 Sustained Interruptions by Frequency**



**Table 49 - KIUC Outage Categories Ranked by Frequency, with Sample Causes**

Rank	Outage Category	Sample Causes
1	Distribution	Failure or malfunction of distribution equipment including cables, fuses, insulators, poles, and transformers
2	Other	Persons or equipment not related to or owned by KIUC, including 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
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 55 shows the breakdown by magnitude. The same descriptions and examples that were described in Table 49 also apply for Figure 55. The causes of severe interruptions, in order from most to least were "Other," "Distribution," "Acts of Nature," followed by "Transmission" and "Power Supply," which were identical.

**Figure 55 - KIUC 2012 Sustained Interruptions by Magnitude**

