2016 Sustainability Report

Honoring the Past.
Transforming the Future.

Hawaiian Electric
Maui Electric
Hawai‘i Electric Light

HONORING THE PAST
1891 - 2016

125 YEARS SERVING HAWAI'I

1891 — 2016

Inspired by an enlightened king, Hawai'i has always been at the cutting edge of electricity and energy innovation. We're proud to have been a part of that history for well over a century in all of the communities we're honored to serve.

1891 Hawaiian Electric Company, Ltd. is incorporated on Oct. 13.

1894 Alakea Power Plant is dedicated and placed into service.

1914 Hawaiian Electric establishes service to the windward side of O'ahu by stringing an 11,000 volt line over the Pali to service a wireless telegraph company at He'eia.

1915 The legislature grants Hawaiian Electric the right to supply power to the entire island.

Contents

EDITOR'S NOTE:
At the Hawaiian Electric Companies, we recognize the use of diacritical marks in the modern Hawaiian language and make every effort to include such marks in Hawaiian names. Out of respect for individuals and organizations that do not use diacritical marks in the official spelling of their names, we are not including diacritical marks in those instances.

Aloha,

In 2016, we proudly celebrated the 125th anniversary of Hawaiian Electric, the 95th anniversary of Maui Electric and the 122nd anniversary of Hawai'i Electric Light—local companies serving Hawai'i's people. As we commemorate our past, we're reminded of the challenges we've overcome, empowered by the milestones we've achieved and encouraged to progress further. Our history is brimming with wonderful success stories and our future is filled with opportunities for more.

To share highlights of the many things we have accomplished this past year, we are pleased to present our 2016 Sustainability Report.

In 2016, we pushed ever closer to the state's ambitious clean energy goals, closing the year with the submission of our energy plans to state regulators laying out our path to 100 percent renewable energy for Hawai'i. We also continued working every day to transform the way we do business and the way we provide service to enhance value for our customers.

Our energy environment continues to evolve and innovative technologies are emerging at a fast pace. To keep up with those changes, we launched several demonstration projects and pilot programs to find solutions to address grid stability challenges, better integrate more renewable energy, and develop new customer programs that meet diverse energy needs. We also focused on ways we can continue to reduce the environmental impacts of our business operations and support the protection and restoration of Hawai'i's environment and unique ecosystem.

Electrification of transportation was again a main focus this year. We installed more electric vehicle fast-charging stations throughout our service territories, developed new customer education tools, and shared the gift of green transportation with deserving non-profit organizations that provide valuable services to our island communities.

As plans for Hawai'i's energy future are refined, we want to collaborate with partners from all segments – government, business, community and environmental groups and especially our customers. There are challenges ahead, and we know that by working together, we can solve problems and make positive impacts on our customers of today and on future generations.

Mahalo,

Alan Oshima
President & Chief Executive Officer

Generating for Generations

Our companies are proud of our century or more history of generating power to meet the needs of Hawai'i's people.

This map shows the generating facilities in our service area and the maximum potential power in megawatts (MW) each can produce.

Ⓕ **FIRM GENERATION**: energy available on demand, which can be adjusted as needed.

Ⓥ **VARIABLE GENERATION**: energy that may not always be available or controllable.

RENEWABLE FACILITIES

More than half of the facilities on the map incorporate renewable energy sources.

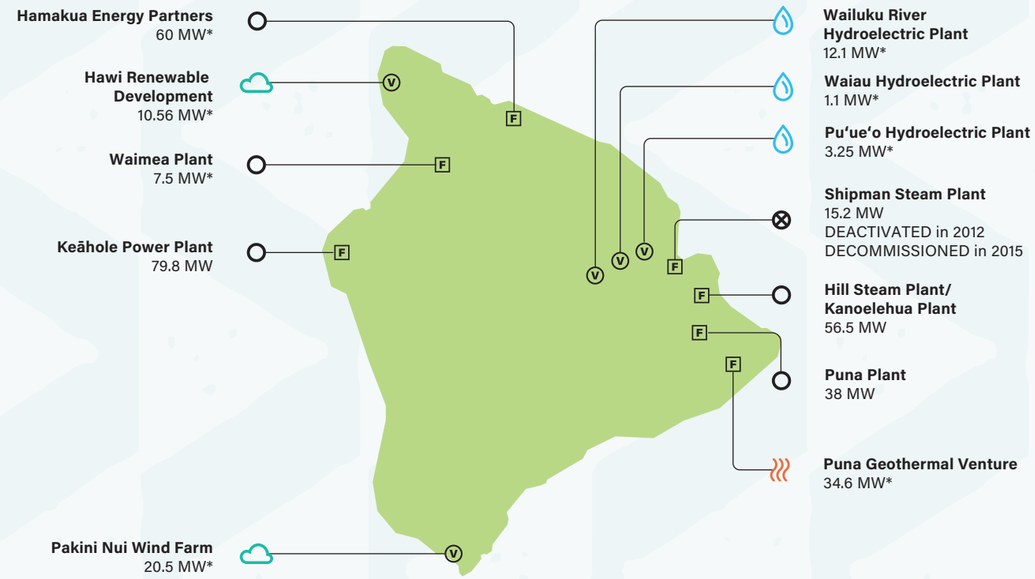
BIOFUELS: 2 **BIOMASS: 1** **GEOTHERMAL: 1** **HYDRO: 5** **WASTE TO ENERGY: 2**

SOLAR: 6 **WIND: 7** **COAL** **OIL** **OIL (DEACTIVATED)**

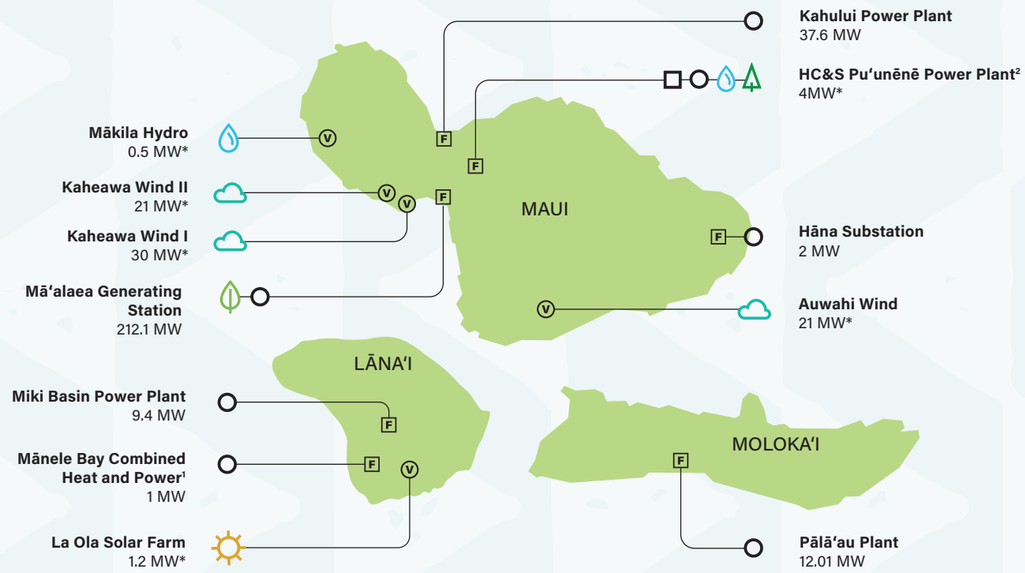
*Net generating capacity [1] Out of service since March 2015; expected back online in 2017 [2] Power Purchase Agreement ended in 2016

O'AHU

HAWAI'I ISLAND



MAUI COUNTY



Toward A Clean Energy Environment

Working Together to Reach Our Goals

The Hawaiian Electric Companies have made significant progress in achieving clean energy goals. Our success would not be possible without the hard work of our employees, our customers – who will play a vital role in everything we do – and the leaders and experts we call clean energy stakeholders. Everyone has a part to play in realizing Hawai'i's commitment to lead the nation in renewable energy.

RENEWABLE PORTFOLIO STANDARD (RPS) STATUS REPORT

Transforming Tomorrow Starts Today

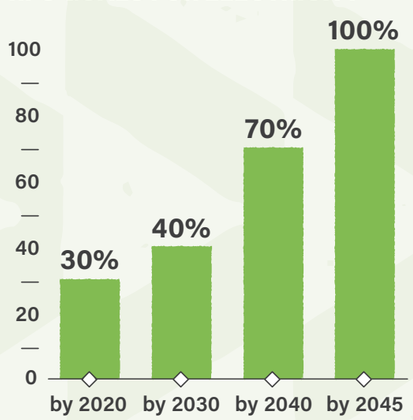
Our net electricity sales from renewable energy resources rose to nearly 26 percent in 2016, up from 23 percent the year before. Hawai'i Island continues to lead the way with 54 percent, followed by Maui County, including the islands of Maui, Moloka'i and Lāna'i with 37 percent, and 19 percent for O'ahu.

Looking ahead, we are pursuing multiple efforts to reach Hawai'i's RPS milestones of 30 percent by 2020, 40 percent by 2030, 70 percent by 2040 and 100 percent by 2045. As described in our updated Power Supply Improvement Plan submitted to the Hawai'i Public Utilities Commission (PUC) in December, we predict these efforts will help us reach the 100 percent milestone five years early.

Integrating renewable energy resources for the benefit of all customers is a top priority for our companies, and we are seeking more renewable energy projects and partnering with energy stakeholders to find new ways to perpetuate our momentum and transition away from imported oil.

We are developing new distributed energy resource and demand response programs with rate plans that incentivize shifting energy use to times when renewable energy, like wind and solar, is abundant.

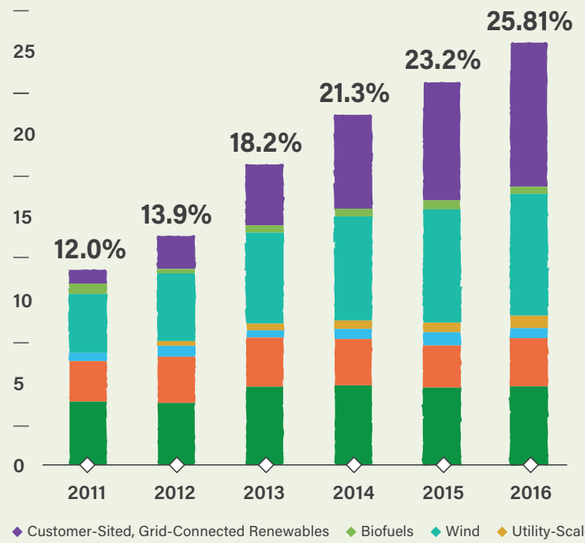
RPS GOALS FOR ELECTRICITY



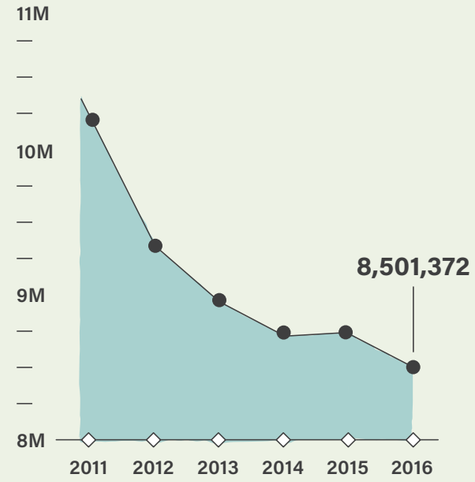
POWER SUPPLY IMPROVEMENT PLAN HIGHLIGHTS

- Exceed Hawai'i's 2020 RPS and achieve a consolidated RPS of 52 percent over the next five years
- Enable Moloka'i to achieve 100 percent renewable energy by 2020
- Maximize distributed energy resources – fairly compensated
- Elevate use of demand response programs
- Aggressively seek grid-scale renewable resources, leveraging federal tax credits
- Pursue grid modernization to enable continued integration of renewable energy
- Preserve long-term flexibility to use emerging technologies and accommodate changing circumstances
- Reduce operations that use fossil fuels and contribute to global warming

RENEWABLE PORTFOLIO STANDARD PROGRESS



BARRELS OF OIL USED FOR ELECTRICITY



2016 RENEWABLE PORTFOLIO STANDARD STATUS REPORT FOR THE YEAR ENDED DECEMBER 31, 2016 (IN NET MEGAWATT HOURS)

	Hawaiian Electric	Hawai'i Electric Light	Maui Electric	2016 Total	2015 Total
ELECTRIC ENERGY GENERATION USING RENEWABLE ENERGY SOURCES					
◆ Biomass[1] (including municipal solid waste)	418,735	-	4,383	423,118	416,716
◆ Geothermal[1]	-	260,116	-	260,116	230,495
◆ Hydro[1]	-	54,108	968	55,076	73,098
◆ Photovoltaic and Solar Thermal[1]	53,723	4,071	9,078	66,872	51,212
◆ Wind[1]	233,531	145,691	277,456	656,678	612,782
◆ Biofuels	37,491	-	984	38,475	53,412
◆ Customer-Sited, Grid-Connected[2]	548,562	114,784	119,438	782,785	643,060
TOTAL	1,292,042	578,770	412,308	2,283,120	2,080,775
TOTAL SALES	6,660,195	1,067,398	1,117,742	8,845,336	8,956,498
RPS PERCENTAGE	**19.4%**	**54.2%**	**36.9%**	**25.8%**	**23.2%**

1 Renewable electrical energy generated is based on recorded data from Feed-In-Tariff contracts and Independent Power Producers with PPAs.
2 Savings from photovoltaic, wind, and hydro systems are based on known system installations for 2016 including Net Energy Metering ("NEM") installations, non-NEM systems, and Sun Power for Schools installations. Recorded generation data was used when available. For systems where recorded data was not available, estimates were made based on reasonable performance assumptions for typical photovoltaic systems.
The full RPS report provided to the Hawai'i PUC is available online at www.hawaiianelectric.com/cleanenergy.

Clean Energy Updates

The Future is Greener

Our companies are pursuing more locally sourced, clean and reliable energy projects that will lower our customers' bills, free us from oil-based dependency and create positive change for our economy, environment, and communities. In 2016, we issued a Request for Information seeking properties whose owners might be interested in utility-scale renewable energy projects – such as solar, wind or biofuel feedstock farms – on Oʻahu, Hawaiʻi Island, Maui, Molokaʻi and Lānaʻi. We have also asked permission of the Hawaiʻi PUC to issue Requests for Proposal for new renewable energy projects on each of the five islands that we serve.

SOLAR

Harnessing Power from the Sun

Our companies lead the nation in the adoption of solar power. By the end of 2016, about 15 percent of all residential and commercial electric customers had PV systems – nearly 20 times the national average. And it continues to grow.

- In July, Macquarie Infrastructure Company completed construction of the 5 MW Waihonu North and the 1.5 MW Waihonu South solar farms in Mililani, Oʻahu. The projects uniquely integrate sheep grazing under the solar panels, reducing dust from traditional grass cutting and increasing the efficiency of the panels. Hawaiian Electric has a 20-year Feed-in-Tariff (FIT) agreement to purchase energy from the farms at a fixed rate of 23.6 cents per kWh.

▲ Sheep grazing under the PV panels at the Waihonu Solar Farm in Mililani, Oʻahu. Photo Credit: Star Advertiser

◀ 27.6 MW Waiʻanae Solar PV facility developed by Eurus Energy America. Photo Credit: REC Solar Commercial Corporation

- The largest solar farm in Hawaiʻi broke ground in March 2016 and was completed in January 2017. The 27.6 MW Waiʻanae Solar photovoltaic facility, developed by Eurus Energy America, sits on approximately 200 acres in West Oʻahu. Hawaiian Electric will purchase electricity from Eurus at 14.5 cents per kWh, making it one of the state's lowest-cost renewable energy projects.

- In March 2017, Altus Power America completed Aloha Solar I, a 5 MW ground-mounted solar farm in Waiʻanae which generates more than 10,000 MWh of electricity sold to Hawaiian Electric through a 20-year FIT agreement at 23.6 cents per kWh.

- After receiving approval from the Hawaiʻi PUC in February 2016, Kenyon Energy began construction on two solar projects on Maui. Both projects feature 2.87 MW photovoltaic installations on 12 acres. SSA Solar of HI 3, LLC, is above the Maui Research & Technology Park in Kihei; and SSA Solar of HI 2, LLC, is near Lahainaluna High School. The projects will provide power to Maui Electric's grid at a price of 11.06 cents per kWh.

- In October, we asked the Hawaiʻi PUC for approval to develop a 20 MW solar energy facility at Joint Base Pearl Harbor-Hickam, West Loch Annex. The project, a cooperative effort with the Department of the Navy, involves the provision of land needed to build the facility in return for in-kind electrical infrastructure upgrades to Navy-owned facilities. If approved, it would be the lowest-cost renewable energy project in the state, at 9.54 cents per kWh or less.

A Great F.I.T.

In 2016, our Feed-In-Tariff program let us integrate 13 additional utility-scale solar projects with a combined capacity of nearly 11 MW.

1927 Hawaiian Electric's King Street building opened for business on July 25.

1938 The first unit at the Waiau Generating Station goes online.

1941 As Japanese war planes strafe the Waiau Power Plant at Pearl Harbor with machine gun fire, 13 workers stay at their posts to safely shut down the plant. The plant's log book records, "The plant is under attack–secured everything." Later, power plants are painted in camouflage and reinforced with steel and concrete.

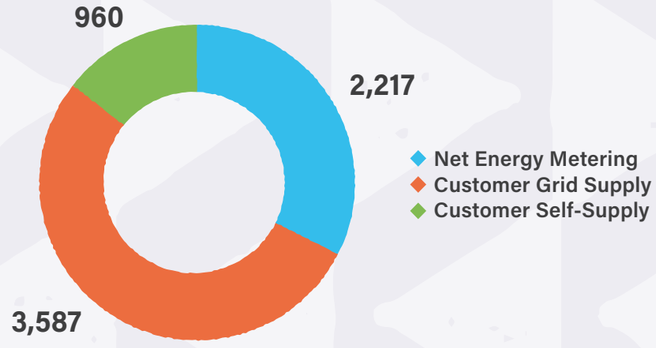
1947 The Ward Avenue operations building is constructed.

PRIVATE ROOFTOP SOLAR

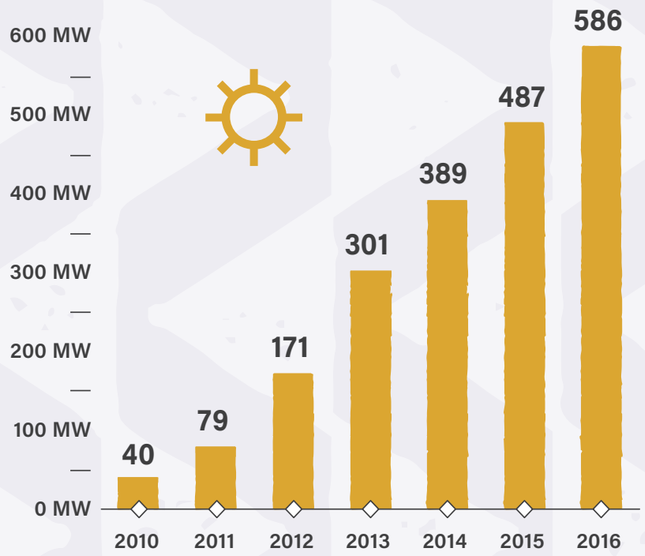
Through the Roof

In 2016, applications for the next generation of private rooftop solar energy systems surged, fulfilling our Customer Grid Supply program and demonstrating enhanced customer interest in our Customer Self-Supply program that incorporates energy storage. To date, nearly 79,000 customers have installed or been approved to install solar systems on O'ahu, Maui County and Hawai'i Island.

6,764 SOLAR APPLICATIONS WERE APPROVED IN 2016



CUMULATIVE PV INSTALLATIONS MEASURED IN MW



Includes: Net Energy Metering, Customer Grid Supply, Customer Self-Supply, Feed-In-Tariff, Standard Interconnection Agreements (SIA), Power Purchase Agreements, non-SIA, and utility projects, including military installations and Smart Power for Schools.

BIOFUELS

From Farm to Fuel

In September 2016, we started construction of our new, 50 MW Schofield Generating Station. The plant will run on at least 50 percent biofuel and will feature modern, flexible, efficient generators capable of quickly starting up, shutting down, or changing their output. That makes them well-suited for responding to sudden changes in solar and wind energy resources, enhancing our integration of renewables onto O'ahu's electric grid. As the island's only major inland powerplant, it will be protected from coastal impacts such as storms and tsunamis. This will also strengthen the security and emergency preparedness of O'ahu's electric grid. Built in cooperation with the U.S. Army, the plant can also provide power directly to Army and National Guard first responders and Wheeler Army Airfield.

"We're excited about the benefits of this partnership for the Army and local community. In keeping with the Army's commitment to protecting the environment, we know this plant will provide the energy we need while, at the same time, being good stewards of our natural resources."

— COL. STEPHEN DAWSON, Commander, U.S. Army Garrison-Hawaii

▲ Hawaiian Electric and the U.S. Army broke ground on a new power plant at Schofield Barracks that will strengthen the island's power grid and improve integration of renewable energy.

WIND

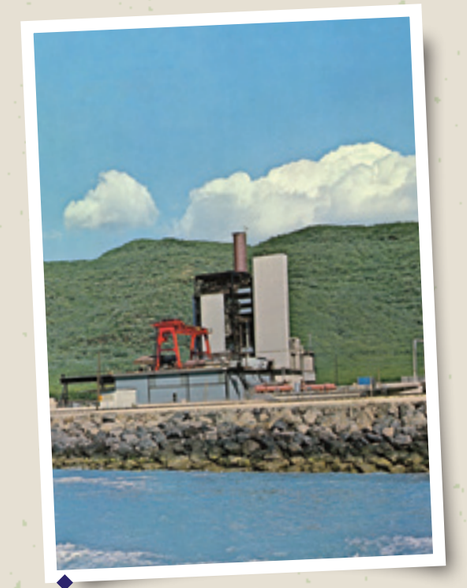
There's Power in the Air

In October 2016, the Board of Land and Natural Resources approved a 40-year lease for Na Pua Makani Power Partners, LLC, to build a wind facility in Kahuku on the North Shore of O'ahu. The 24 MW Na Pua Makani Wind Farm is expected to begin construction in 2017 and will sell energy to Hawaiian Electric at an average rate of 15 cents per kWh over 20 years.

1952 New drop box allows customers to pay bills after hours.

1954 The Leslie A. Hicks Power Plant in downtown Honolulu becomes operational.

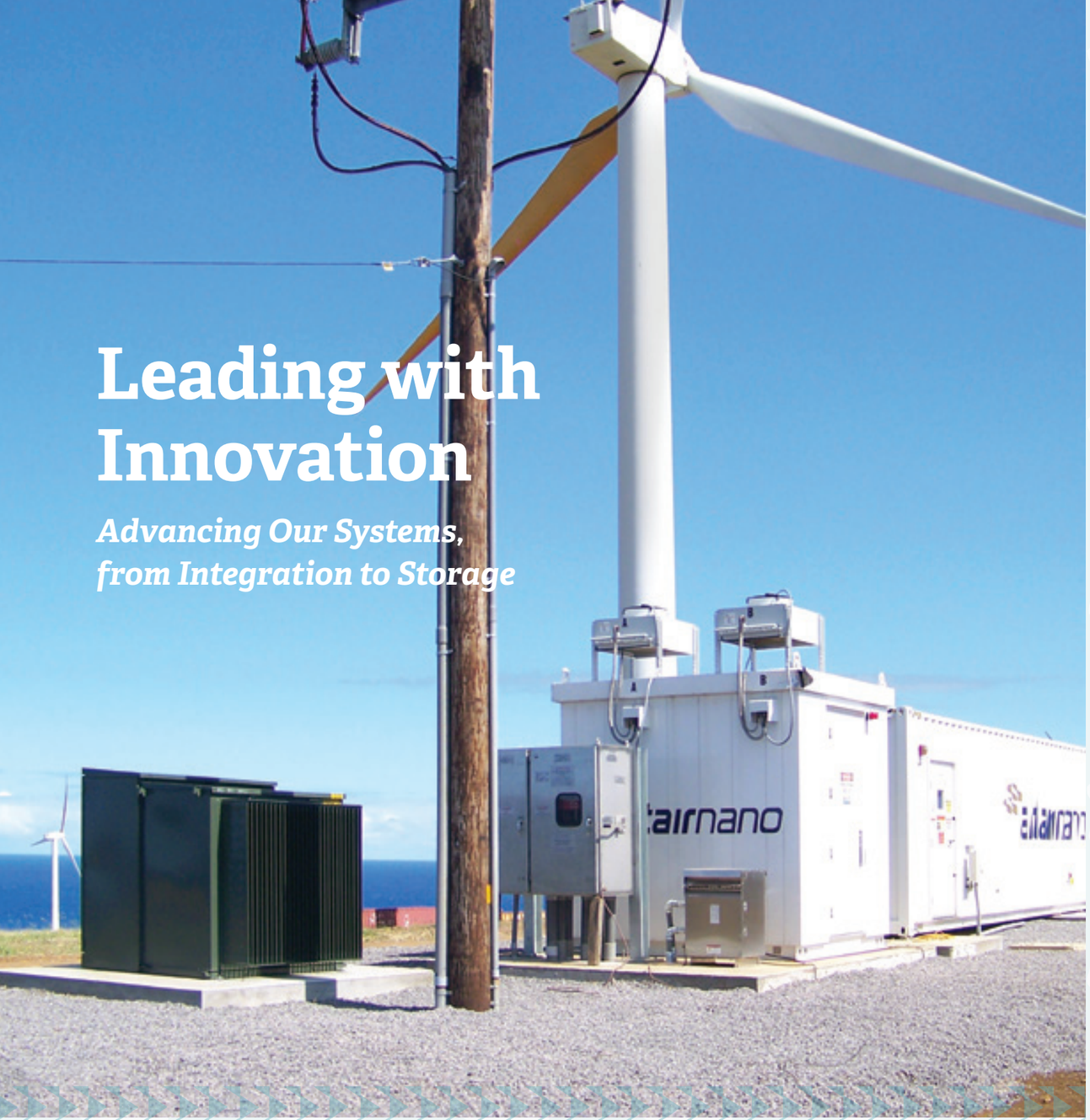
1958 The first 138 kV lines are strung from Waiau over the Ko'olau range. The Pali tunnels and a new highway open Windward O'ahu to development.



1963 The first unit at Kahe Power Plant goes online.

Leading with Innovation

Advancing Our Systems, from Integration to Storage



If replacing fossil fuels with renewable sources were as easy as switching a plug, Hawai'i's clean energy future would already be here. However, there are many challenges we're working hard to overcome.

MODERNIZING OUR ELECTRIC GRIDS

We made many improvements in 2016 to modernize our electrical systems for more reliable and resilient service.

- On O'ahu, Maui and Moloka'i, we installed GRID20/20 OptaNODE™ sensors on circuits with high levels of rooftop solar. The sensors identify and monitor bi-directional energy flows and voltage variation, allowing us to deliver safe, reliable quality power to our customers.
- On O'ahu, we partnered with Varentec, Inc., to test its grid edge voltage control technology as a solution for crucial voltage issues on circuits with high penetrations of solar, which can trip off rooftop solar systems and damage home appliances. A successful test could lead to increased solar penetration and other innovative energy conservation applications.
- Maui Electric upgraded its Wailuku Substation on Lower Main Street, which serves about 3,700 customers. Upgrades included a larger transformer to meet anticipated growth demands and a circuit breaker to turn power on or off remotely as required.
- On Moloka'i, we launched a pilot program to improve the interaction of private rooftop PV systems with the grid, allowing increased interconnections without undermining power reliability and quality for other customers. Our companies will evaluate the performance of these pilot systems in partnership with E-Gear, which provided specialized Energy Management Control and storage technology, and the Electric Power Research Institute.
- We installed seven S&C Tripsaver II units and 13 Power Delivery Products Remote (SCADA) Faulted Circuit Indicators to enhance the Moloka'i east end distribution protection system. The Tripsaver units, in concert with new equipment settings from the Maui Electric Protection Department, will help limit outage areas and the remotely-accessible indicators give us greater visibility and potentially improved power restoration times during outages.
- To optimize generating resources and accommodate more variable generation while maintaining reliability, Hawai'i Electric Light has implemented six-hour ahead wind and solar forecasting. This gives system operators the best possible information about variable generation to make decisions about starting firm, conventional generation, rather than scheduling units a day ahead with less accurate information.
- While the companies work to find a system-wide approach to allow more private rooftop systems access to our grids, Hawai'i Electric Light found a low-cost, off-the-shelf, temporary way to communicate with solar systems' advanced inverters. This allows real-time monitoring of solar production and curtailment management in the event of a system emergency.

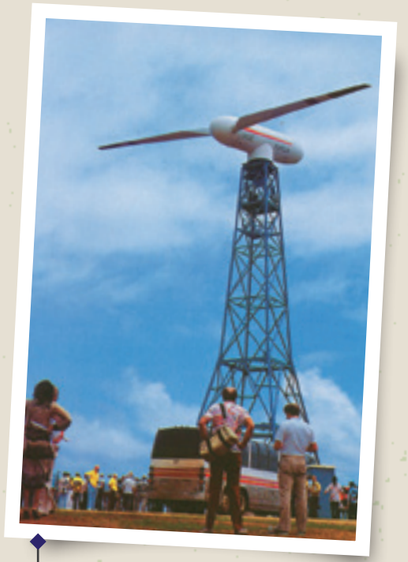
1964 Hawaiian Electric stock is publicly traded for the first time.

1967 Maui Electric acquires Lahaina Light and Power Company.

1968 Hawaiian Electric acquires Maui Electric Company on Nov. 1.

1970 Hawaiian Electric acquires Hawai'i Electric Light Company on Feb. 1.

1973 Keahole Generating Station and the Airport Substation begin operation on Hawai'i Island.



1978 Hawaiian Electric is awarded a $2 million grant for a Department of Energy/NASA test wind turbine in Kahuku.

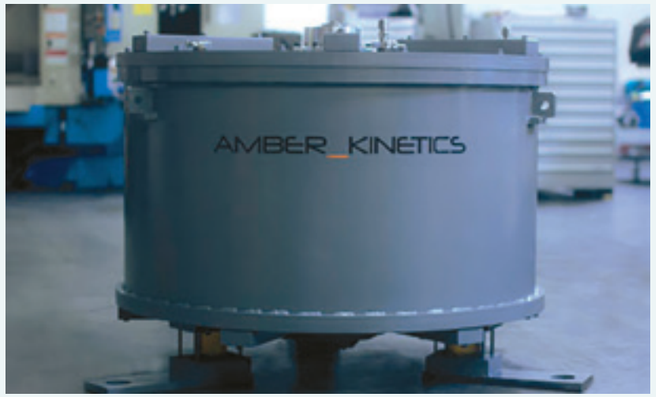
ENERGY STORAGE PILOTS

We are collaborating with several partners to test a range of energy storage technologies to help integrate more intermittent distributed renewable energy resources on the utility grid while preserving or enhancing grid operability and reliability in our service territories.

- The first utility-scale Battery Energy Storage System (BESS) on O'ahu went into service in September at our Campbell Industrial Park Generating Station as part of a joint demonstration with the Hawaii Natural Energy Institute (HNEI) at the University of Hawai'i, with funding for equipment from the U.S. Office of Naval Research and installation by Hawaiian Electric. The quick-responding battery can go from zero to full power output in a fraction of a second and provide 250 kW of power for one hour or 1 MW for 15 minutes. The two-year demonstration will test power smoothing, frequency and voltage response, operating costs, battery safety, operating characteristics and effectiveness in helping to integrate more renewable energy on a circuit that already has a high level of solar.

- Other BESS projects with HNEI include a wind smoothing and frequency regulation operation on Hawai'i Island and a contingency reserve and grid stability control test at our Pālā'au Power Plant on Moloka'i. BESS projects are among half a dozen energy storage demonstrations and pilot projects underway.

- In October, the largest customer-sited energy storage system in Hawai'i was activated by Wet'n'Wild Hawaii and Stem, Inc., a leader in intelligent energy storage technology. The Wet'n'Wild 108 kW system is part of a three-year pilot supported by Elemental Excelerator, Hawaiian Electric and the U.S. Department of Energy's SunShot Initiative to deploy electric storage systems at about 30 local businesses on O'ahu, with additional customer rollouts to come on Maui and Hawai'i Island. Stem's storage system improves service reliability in areas with high levels of rooftop solar and other distributed energy resources.



- We agreed to work with Amber Kinetics and the Elemental Excelerator on a joint energy storage pilot project to test Amber's first commercially available four-hour duration flywheel, a rotating mechanical device that can store and release energy for multiple cycles per day. The flywheel can smooth out variable and intermittent distributed renewable generation from PV and wind, provide voltage regulation and frequency support to the utility grid and allow peak energy shifting by storing excess energy from PV for use during peak periods. The project, jointly funded by the Office of Naval Research through Elemental Excelerator and Hawaiian Electric, will test the system's capabilities at our Campbell Industrial Park Generating Station on O'ahu. It's one of nearly a dozen clean energy collaborations we're undertaking with the Elemental Excelerator.

"Hawaiian Electric Company is a leader among U.S. utilities for adopting and integrating renewable energy to create a sustainable energy future. Now it's continuing that leadership by exploring the potential of flywheel energy storage. We are excited to collaborate toward achieving the state's 100 percent renewable energy goals by 2045."

— ED CHIAO, Amber Kinetics' Co-founder and CEO

AWARDS AND RECOGNITION

- Our companies were honored to receive the Renewable Integration Project of the Year award at the 26th DistribuTECH Conference for our rollout of the Gridco Systems In-Line Power Regulator™. Selected from almost 100 applicants, the new technology puts us closer to our customers with the ability to monitor and control distribution lines so we can cost-effectively address power quality issues and integrate more private rooftop systems. Our engineers are working together to deploy and field test the technology on O'ahu, Moloka'i and Hawai'i Island circuits.

- For the eighth year, Maui Electric was named one of the nation's top utilities for connecting the most solar watts per customer to the grid, earning ninth place in the annual Top 10 list compiled by the Smart Electric Power Alliance. The ninth annual survey includes figures from more than 300 utilities across the country.

- In another national recognition of our companies' innovation leadership, we were awarded more than $3.4 million in Department of Energy (DOE) funding to improve electric grid technology, which will facilitate more renewable energy generation. We received a $1 million Grid Modernization Laboratory Consortium grant focused on Hawai'i, $2.4 million as part of the DOE's SunShot Initiative Sustainable and Holistic Integration of Energy Storage and Solar PV program, and we are a partner on a $3.8 million Grid Modernization Laboratory Consortium project. The funding will go toward implementation of pilots, development of visual and analysis tools to support integration, research and demonstration projects and studies that will improve our ability to coordinate more DER resources, like rooftop solar on homes and businesses, targeted use of battery technologies and other load management capabilities to cost-effectively operate a resilient grid.

1981 A new computer system streamlines operations.

1983 Hawaiian Electric Industries (HEI) is formed to diversify the company's business base. Hawaiian Electric becomes a subsidiary of HEI.

1984 HEI Charitable Foundation is founded.

1984 Hawai'i Electric Light purchased energy from a 198-unit wind farm at Kahua Ranch.

1985 Hawaiian Electric Renewable Systems (HERS), an HEI subsidiary, builds the Makani Moa'e windfarm in Kahuku.

1987 Hawaiian Electric makes a historic decision to purchase power from independent energy suppliers.

1988 Hawai'i Electric Light purchases the Puna Biomass Generating Plant.

1988 Maui Electric acquires Lāna'i City power plant.

Electrification of Transportation

EVs Made Easy

Achieving a clean energy future for Hawai‘i means transforming the way we power transportation, which makes up a vast portion of total energy consumption statewide. Our companies are working hard to make it easier to buy and drive electric vehicles (EVs) so that Hawai‘i can continue its transition to clean transportation.

PROMOTING ELECTRIC TRANSPORTATION THROUGH COLLABORATION

Our companies have agreed to collaborate with seven other organizations on the electrification of ground transportation in Hawai‘i as an essential part of achieving the state’s clean energy goals. The initiative, called Drive Electric Hawai‘i, seeks to accelerate adoption of EVs and make it easier to expand EV-charging infrastructure in a way that brings more renewable energy onto the electric grid.

EVS FOR A BETTER HAWAI‘I

The Hawaiian Electric Industries Charitable Foundation donated “Smart for Two” EVs and electric charging equipment to deserving local non-profit organizations dedicated to making Hawai‘i a better place.

- Hawaiian Electric partnered with Aloha United Way to donate 10 smart EVs. Recipients were Adult Friends for Youth, Aloha United Way – Hawai‘i Cares, American Lung Association in Hawai‘i, BikeShare Hawaii, Hawai‘i Meals on Wheels, Kupu, Legacy of Life Hawai‘i, Pacific Gateway Center and Partners in Development.
- During its Go EV event, Maui Electric presented smart EVs to the University of Hawai‘i Maui College, Boys & Girls Clubs of Maui and Maui Hui Malama. Attendees got to learn more about the benefits of EVs and new financial incentives such as Maui Electric’s new Time-of-Use rates, as well as test drive different EV models.
- Hawai‘i Electric Light presented EVs to Boys & Girls Club of the Big Island, HOPE Services Hawaii and the University of Hawai‘i at Hilo.

The nonprofit organizations will use the EVs in a variety of ways, including promoting clean air for a healthier state, delivering meals to needy families, meeting the basic needs of refugees in the islands, transporting life-saving organs and tissues for transplant and connecting at-risk youth to caring mentors.

EV COST/BENEFIT CALCULATOR

To help consumers decide if a plug-in EV purchase makes financial sense for them, we’ve launched WattPlan for Electric Vehicles, a new, interactive, online calculator that compares any make and model of plug-in EV with any conventional, internal combustion vehicle. Developed in conjunction with Clean Power Research®, an award-winning innovation company, the tool considers consumers’ monthly electric bills and current gasoline prices to calculate EV cost savings. It’s accessible at: www.hawaiianelectric.com/wattplanforEV.

MORE EV FAST-CHARGERS

As of December 2016, we've installed 11 EV fast-charging stations on O'ahu, Maui and Hawai'i Island to serve current EV drivers and encourage wider EV adoption. A fast-charger can recharge a typical EV battery to 80 percent in less than half an hour, reducing range anxiety and helping more people take advantage of the benefits of EVs. We're currently seeking additional fast-charging sites within our service territories.

SPREADING FAST

EV fast-charging stations installed as of December 2016

HOST SITE	ISLAND	PARTNERS
Dole Plantation	Wahiawā, O'ahu	Castle & Cooke Properties, Inc., and OpConnect
Hawaiian Electric Ward Office (2 stations available)	Honolulu, O'ahu	Greenlots
Koʻolau Center	Kāneʻohe, O'ahu	Bishop Street Commercial, LLC, and OpConnect
Kapolei Commons	Kapolei, O'ahu	MK Kapolei Commons, LLC, and VLI-EV Partners
Hawai'i Kai 7-Eleven	Hawai'i Kai, O'ahu	7-Eleven Hawaii, Inc., and OpConnect
Wai'anae Mall	Wai'anae, O'ahu	A&B Waianae LLC, and OpConnect
Maui Electric Kahului Office	Kahului, Maui	Greenlots
Hawai'i Electric Light Hilo Office	Hilo, Hawai'i	Greenlots
Hawai'i Electric Light Kona Office	Kailua-Kona, Hawai'i	Greenlots
Waimea KTA	Kamuela, Hawai'i	Greenlots

2016 RECOGNITIONS

2016 Hawaii Energy Policy Forum Clean Energy Transformational Achievement Award

2016 Electric Power Research Institute Technology Transfer Award

HILO EV FAST CHARGER BLESSING CEREMONY

▲ L-R: Jay Ignacio, Hawai'i Electric Light President; State Rep. Richard Onishi; Jennifer Zelko-Schlueter, Hawai'i Electric Light; Maile David, Hawai'i County Council; State Senator Lorraine Inouye; Greggor Ilagan, Hawai'i County Council; State Rep. Clift Tsuji; Alan Oshima, Hawaiian Electric President & CEO; Deacon Larry Ignacio, Annunciation Church

KONA EV FAST-CHARGER BLESSING CEREMONY

▲ L-R: Jane Clement, Dru Kanuha's office; Dru Kanuha, Hawai'i County Council; Karen Eoff, Hawai'i County Council; State Rep. Nicole Lowen; Jay Ignacio, Hawai'i Electric Light President; Kirstin Kahaloa, Kona-Kohala Chamber of Commerce

EV-GRID INTEGRATION

We are currently working with the Electric Power Research Institute and Greenlots on a joint research, development and demonstration project that combines Greenlots' pioneering SKY platform - a scalable, vehicle-grid integration technology - with several of our EV fast chargers. Combining an EV fast charger with energy storage optimizes electricity consumption – storing energy when generation is abundant (i.e., daytime rooftop PV) for use during peak electricity demand.

GREENER FLEET

HEAVY DUTY TRUCKING TOP 50 GREEN FLEETS 2016

For the fourth year in a row, Hawai'i Electric Light was named one of Heavy Duty Trucking's Top 50 Green Fleets.

Hawai'i Electric Light also deployed two new Plug-in Parallel Hybrid Drive bucket trucks on Hawai'i Island, featuring:

- Engine-Off Heating, Ventilation and Air Conditioning (meaning those functions can operate without consuming biodiesel fuel)
- Electric Drive & PTO-Boom Functions
- Exportable Power

Our companies continue to power our fleets with B20 biodiesel, which cut more than 457 tons of CO2 emissions in 2016. That's the emissions equivalent of:

87.6
PASSENGER VEHICLES DRIVEN FOR ONE YEAR

960
BARRELS OF OIL CONSUMED

46,651
GALLONS OF GASOLINE CONSUMED

Improving Our Customers' Experience

Keeping Communities Well Informed

To provide customers with greater convenience, our companies have made it easier to connect with us and the information they need to make the right decisions for their energy consumption.

Improved mobile websites optimized for smart phones and tablets

Our Online Customer Service Center has been updated with responsive design for optimal navigation and viewing on any device. Now it's easier than ever for customers to access account information, with a new streamlined log-in and account setup, a new rooftop solar cost-effectiveness calculator and sign-up or stop requests for services like automatic bill payments and paperless statements.

Hawaiian Electric Launches Online Outage Map

In response to customer requests, we've launched a new online outage map for O'ahu customers to report and monitor power outages, restoration status and estimates of the number of customers affected by an outage, time until restoration and the cause of the problem, if known.

"We've listened to our customers, who've made it clear they want more information about power outages. They've told us they want to know someone is working on restoring their power, so we're providing them with another option they can use to stay updated."

— Jim Alberts, Senior Vice President of Customer Service, Hawaiian Electric

No Fee for Western Union In-Person Bill Payments

Our companies have partnered with Western Union to improve payment options with no-fee electric bill payment at any Western Union payment agent. Customers simply present their electric bill stubs when making payments at Western Union.

NEW OPTIONS TO MANAGE ELECTRICITY USE

You Have the Power

Hawaiian Electric partnered with Elemental Excelerator, Blue Planet Foundation and software firm Bidgely to launch You Have the Power, a pilot program in 750 homes across O'ahu to help residents regulate and save money on their home energy use. Participants received a device that lets them view their energy consumption by appliance online or via Bidgely's HomeBeat app.

Time-of-Use (TOU) Rates

We gave our customers more options to manage their electricity costs with our recently launched TOU program. This optional two-year program for residential customers charges less for power used during the day – when solar energy production is highest – and more at night.

Participating customers will receive information on their bills that compares their costs under this program and the normal residential rate for electricity. Participation is voluntary and limited to the first 5,000 customers who enroll, with the option to opt out at any time.

SAFETY FIRST

Joining the Anti-Scam Coalition

Our companies joined with fellow electric companies across the country, as well as utilities in the natural gas and water sectors, to observe the inaugural Utilities United Against Scams (UUAS) Day to help prevent utility service fraud through education, awareness and customer advocacy initiatives. We provided awareness and education activities to help customers detect and avoid scammers impersonating utility employees.

Drones Elevate Operations, Service & Response

Our companies have begun to use unmanned aircraft systems, also known as drones, for inspections, including storm response, and to access remote and difficult areas – a cost-effective solution that increases employee safety and reduce our carbon footprint. Deployed quickly to provide a snapshot of system conditions vital to restoring power after storms, wild fires or other disasters, these systems can also serve as a routine part of asset inspection, repair and replacement ahead of likely failure, resulting in better service for our customers.

Stewardship for the Future

Protecting Hawai'i's Natural Environment

Protecting the environment and ensuring public safety are crucial priorities for us. To be certain that we achieve environmental excellence, our team of environmental professionals oversees training and implementation of new technologies, equipment and processes.

In 2016, we supported several environmental stewardship efforts across our service territories:

- Hawai'i is known as the Endangered Species Capital of the World, with over 400 threatened and endangered species in a mere one quarter of one percent of the land mass of the continental U.S. Hawaiian Electric has developed and implemented specific protocols and work practices to evaluate and manage the emerging species concerns as more species are added to the list.

- At Maui Electric, we continued our partnership with Save Our Seabirds to sponsor the Maui Nui Seabird Recovery Project, a public education campaign focused on proper handling of downed seabirds during the fledging season. Our contributions in 2016 helped support a movie theatre advertisement and the purchase of outreach supplies and seabird carriers to aid in the location, protection and enhancement of seabird populations and habitats in Maui Nui.

- In an effort to meet the U.S. Environmental Protection Agency's (EPA's) new emission standards for power plants while avoiding increased costs to our customers, Hawaiian Electric rigorously tested and implemented a series of operational modifications that eliminated the need for expensive equipment or higher-cost fuels at two of our O'ahu generating stations affected by the Mercury & Air Toxics Standard (MATS) rule. Regulatory compliance was achieved by the 2016 deadline with minimal cost impact to our customers, and the EPA suggested that another island grid utility seek Hawaiian Electric's advice to solve MATS requirement problems.

- In 2016, we installed two new air quality monitoring stations near the Kahe and Waiau power plants, to comply with the EPA's new National Ambient Air Quality Standards (NAAQS) for sulfur dioxide (SO2), a common air pollutant. The stations will be collecting air quality and meteorological data that will be integrated into the Department of Health's statewide monitoring network to help the state develop its State Implementation Plan strategy to maintain the NAAQS and comply with the EPA's 1-Hour SO2 Rule. As Hawai'i's air quality is already among the best in the nation, these measures will ensure it remains that way.

SAFEGUARDING INDIGENOUS SPECIES

Hawaiian Tree Snail populations have severely declined over the past century due to the loss of habitat, predation from invasive species, and human collection. To minimize our company's impact to snail populations, Hawaiian Electric created and implemented a Hawaiian Tree Snail Awareness Program so employees can recognize snail habitats and modify work practices accordingly. We also collaborate with agencies to update our Hawaiian Tree Snail Awareness Program and conduct field surveys to identify potential snail habitats.

1988 Signed contract with Kalaeloa Partners to build and operate a 180 MW combined cycle plant at Campbell Industrial Park.

1989 Hawaiian Electric contracts for the first time with three independent power producers: The Honolulu Program of Waste Energy Recovery (H-Power), Kalaeloa Partners L.P., and Applied Energy Services, Barbers Point, Inc. (AES).

1989 Maui Electric acquires Moloka'i Electric Company.

1991 Hawaiian Electric celebrates 100 years of service to Hawaii.

1991 The first 69 kV transmission lines to carry geothermal power to the Hawai'i Electric Light grid are completed.

1993 Puna Geothermal Venture begins providing power to Hawai'i Electric Light.

1995 Hawaiian Electric wins the Edison Award - the electric utility industry's highest honor - for promotion of energy-efficient heat pump electrotechnology in Hawai'i.

1996 U.S. Department of Defense - Hawaiian Electric Clean Energy Partnership is signed to meet DOD's energy needs.

1996 Hawaiian Electric begins offering energy efficiency "Energy$olutions" rebate programs, including the nation's largest residential solar water heating program.

◆ The Hawai'i Volcanoes National Park (HVNP) protects a wide diversity of ecosystems and habitats for numerous native Hawaiian plants, animals and insects. In September, to protect and restore ecosystems and cultural resources, Hawai'i Electric Light volunteers helped the park remove invasive Himalayan ginger along trails.

◆ Hawai'i Electric Light held its annual Arbor Day Tree Giveaway. In partnership with Kua O Ka Lā Public Charter School, Ho'oulu Lahui and Kaulunani Urban and Community Forest Program, the company gave away 'ōhi'a, koa, pūhala, lama, niu, kou and kukui. Kua O Ka Lā students cared for the trees and educated the community about tree care and the cultural significance of the native plants.

◆ Albizia, an invasive species in Hawai'i capable of reaching 200 feet in height, is known as one of the fastest-growing trees in the world. With broad, shallow root systems, the trees and their brittle limbs easily fall during strong winds. In a new partnership to reduce the threat of falling albizia trees on roads and utility lines, Hawai'i Electric Light and the Hawai'i Department of Transportation (HDOT) cut, treated and trimmed 8,012 of the invasive trees along state roadways and 9,832 albizia along Transmission and Distribution corridors. As part of the agreement, Hawai'i Electric Light will oversee $1.5 million in work by contractors over the next year to clear albizia, focusing on areas where trees threaten both state highways and utility equipment. Hawai'i Electric Light also participated in the Hawai'i Invasive Species Committee and implemented company procedures to control the spread of invasive species.

CUT, TRIMMED AND TREATED

17,844

ALBIZIA TREES

◆ Maui Electric launched an energy-saving street light demonstration project in June with the installation of 24 light-emitting diode (LED), computer-operated street light fixtures along both sides of Maui Lani Parkway. Several varieties of LED lights are being tested, and the data collected will evaluate light characteristics, such as color and brightness, and dimming capabilities that could result in improved energy efficiency across Maui County's 8,000 street lights that use high pressure sodium bulbs on Maui, Lāna'i and Moloka'i. The pilot project was developed collaboratively between Maui Electric and the county's Department of Public Works.

"During the project we are evaluating the equipment and the technology that these various LED light fixtures offer. LEDs typically have a longer life span and these particular fixtures offer computer technology that involves enhanced lighting direction, remote monitoring capabilities, and dimming controls that would improve the long-term maintenance and operation of the lights."

— KURT TSUKIYAMA, Maui Electric's Technical Superintendent and Project Lead

1891 ◆ ◆ 2016

1998 Hawaiian Electric helps install the state's first electric vehicle "rapid charging station."

1999 Hawaiian Electric received the U.S. Department of Labor's EVE Award for diversity and for outstanding volunteerism and support.

1999 Hawaiian Electric unveils its new e-bill service allowing customers to view and pay their electric bills via the internet.

2000 Hawaiian Electric is presented with the Good Neighbor Award from the American Red Cross.

2001 Hawai'i's Renewable Portfolio Standard is enacted into law (Act 272) in 2001 setting renewable energy targets of 7 percent by 2003, 8 percent by 2005 and 9 percent by the end of 2010. Net Energy Metering program for rooftop solar customers is established.

2003 American Lung Association awards Hawaiian Electric with the Mauli Ola (Breath of Life) award for environmentally responsible operation of our power plants.

2004 Hawaiian Electric completes a 13-mile underground fuel pipeline from Campbell Industrial Park to Waiau Power Plant.

2005 Hawai'i Electric Light restores and restarts the Pu'u'eo hydroelectric facility on the Wailuku River originally built in 1910.

2006 Hawaiian Electric completes installation of Hawai'i's longest 46-kV underground and undersea sub-transmission cables beneath the ocean floor from Ford Island to the shores of Pearl Harbor.

2006 Hawaiian Electric positioned coral monitoring station offshore from Kahe Beach to ensure that coral reefs are not being harmed by Kahe Power Plant operations.

2008 The Hawaiian Electric Companies and the State of Hawai'i sign a comprehensive agreement as part of the Hawaii Clean Energy Initiative that creates a goal for the state to meet 70 percent of its electricity and ground transportation needs from clean energy sources by 2030.

◆ As part of continued efforts to improve electrical service to East Maui, where falling trees and branches on power lines are a leading cause of outages, Maui Electric invested over $500,000 in the summer months to clear pockets of thick vegetation encroaching on spans of electrical lines that provide service to about 1,000 customers in the remote areas of Nāhiku, Ke'anae and Hāna town.

▲ As part of this project, crews have been working to clear areas in East Maui where overgrown and dense vegetation were encroaching on electrical lines. The project required crews to climb trees ranging up to 100-feet in height.

"What was abundantly evident were the number of outages that were far below what we had expected throughout our districts given the high density of foliage and trees, specifically those remaining albizia tree stands in lower Puna. There is no doubt, in my view, that Hawai'i Electric Light's proactive approach and monetary investment to mitigate the effects of tree and tree limb hazards along its transmission corridors directly contributed to the relatively low number of outages reported during the pre-landfall and landfall phases of Tropical Storm Darby."

— ED TEIXEIRA, Hawai'i County Director of Emergency Management

MĀLAMA 'ĀINA

Mākua Beach Cleanup

In support of environmental stewardship, about 60 Hawaiian Electric volunteers participated in the Sustainable Coastlines Hawaii and Nā Kama Kai beach cleanup community workday on September 24, 2016, helping to collect marine debris and other trash along Mākua Beach in Wai'anae.

A Day on the Land at Kahuku Point

About 25 employees from Hawaiian Electric's Education & Consumer Affairs and Environmental departments joined with Trust for Public Land and other partners on a community work day at Kahuku Point to help eradicate invasive species, plant native foliage and remove debris from the beach, which remains one of the last undeveloped wild shorelines on O'ahu.

▲ Photo Credit: John Bilderback

2009 Hawaiian Electric's 110 MW Campbell Industrial Park Generating Station, fueled by renewable biodiesel, goes online.

2011 Hawaiian Electric begins buying power from First Wind's 30 MW wind farm, Kahuku Wind.

2012 Hawaiian Electric begins buying power from First Wind's 69 MW Kawailoa wind farm on the North Shore of Oahu.

2012 Hawaiian Electric and Maui Electric Company are honored for Solar Energy Adoption by the Solar Electric Power Association.

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

2013 Hawaiian Electric introduces a new logo, reflecting its deep roots in Hawai'i and signaling a renewed commitment to customers.

2014 A clean energy milestone is reached as Hawaiian Electric deactivates Honolulu Power Plant on January 31.

2014 Hawaiian Electric installs smart meters at 5,000 Oahu homes as an initial phase for its planned smart grid project.

2015 Hawaiian Electric pledges support of the state's new goal of 100 percent renewable energy by 2045, the most aggressive clean energy goal in the country.

Partnerships & Outreach

Investing in the Future of Our Communities

The communities we serve are also the communities we live in, where our children play, our neighbors live, and our families thrive.

2016 Community Support Highlights

4,867
VOLUNTEERS/FRIENDS/FAMILY

16,319
HOURS OF SERVICE

$1,055,000
DONATED

1,318
PINTS OF BLOOD

ENERGY FAIRS LOOK BACK & AHEAD

- Hawai'i Electric Light's Tomorrow's Generation Energy Fair taught attendees of all ages about electricity. The free energy fair took customers on a journey from the company's humble beginnings in 1894 to our 100 percent clean energy future through exciting, interactive displays, presentations, games and hands-on activities including environmentally-friendly biodiesel trucks, electric vehicles and fast-charger stations. Keiki who visited every display were invited to enjoy water slides and inflatable bouncers.
- The Maui Electric Energy Fair commemorated 95 years of serving the families and businesses of Maui, Moloka'i and Lāna'i by inviting folks to take a walk down memory lane. Attendees celebrated the innovative energy history of our islands and learned about electrical safety, renewable energy and energy conservation with fun games, interactive displays, keiki make-n-take activities, hands-on demonstrations and entertainment for the entire family.
- To commemorate the company's 125th anniversary, over the next year Hawaiian Electric will give back to the community with 125 Acts of Aloha. These charitable donations and service projects will benefit agencies and programs committed to building a more sustainable future for Hawai'i. Hawaiian Electric kicked off the campaign at the Clean Energy Fair at Kahala Mall by presenting donations of $10,000 to Trust for Public Lands, $10,000 to the Institute for Human Services, and $5,000 to Sustainable Coastlines Hawaii.

REACHING TOMORROW'S ENERGY CONSUMERS

Honolulu Theatre for Youth

A $13,000 grant to Honolulu Theatre for Youth helped Hawaiian Electric develop an energy conservation education program featuring our owl mascot, Maka, The Super Energy Saver. The program, aimed at young audiences, employs sign dance, a music video and catchy song lyrics about energy conservation and efficiency, educating and entertaining audiences while promoting Maka's mission to end household energy waste.

▲ Maka the Super Energy Saver surrounded by 6th grade students from Pearl City Highlands Elementary School, and Ed Chevy, actor; Darcy Endo-Omoto, Hawaiian Electric vice president, government & community affairs; Kurt Tsue, director, community relations and Michele Morris, actor and sign language interpreter before a performance.

Early Learning Support for Military Families

Armed Services YMCA (ASYMCA) received a $12,000 grant from the Hawaiian Electric Companies in support of the Early Learning Readiness (ELR) program that keeps military-dependent toddlers and preschoolers from falling behind in elementary school and beyond by helping them acquire the cognitive, physical, social and emotional skills necessary for future learning.

Supporting Infant Care at Maui Memorial Medical Center

Maui Electric Company and American Savings Bank presented Maui Memorial Medical Center Foundation (MMMCF) with a donation of $44,000 to purchase crucial safety equipment for the care of newborn infants. The Panda Infant Warmers will provide vital, state-of-the-art support for the safety and health of every single baby born at the hospital.

"We are so grateful for this generous grant. With 1,800 babies being born at Maui Memorial Medical Center every year, these two infant warmers will help keep our newborns safe and warm on a daily basis. During this time of transition for the hospital, the support of our community is needed now more than ever."

— LISA VARDE, MMMCF Executive Director and Project Lead

Mālama Maunalua

As part of our commitment to environmental sustainability, Hawaiian Electric provided a $15,000 grant to the nonprofit Mālama Maunalua to expand its habitat restoration program at Maunalua Bay in East O'ahu, the program includes community events where volunteers remove invasive algae, an initiative to restore native sea grass and expanded community engagement through research, internships and careers.

"This award from the Hawaiian Electric Companies is an important investment in the restoration of Maunalua Bay, which is such a significant, yet fragile marine resource. We are very grateful to the Hawaiian Electric Companies for joining other organizations in making our projects with the community and scientists possible."

— JENNIFER TAYLOR, Board President

2015 Hawaiian Electric opens the first utility-owned and operated DC Fast-Charger for electric vehicles on O'ahu at Dole Plantation.

2016 Hawaiian Electric and the Navy propose plans for a new 20 MW solar facility at the Joint Base Pearl Harbor-Hickam, West Loch Annex.

2016 Hawaiian Electric breaks ground on a new biofuel-capable generating station at Schofield Barracks, strategically located away from the shoreline.

2016 Hawaiian Electric celebrates 125 years of service to Hawai'i on October 13.

SUSTAINABILITY GROWS FROM STEM

Honolulu Museum of Art Plastic Fantastic? Exhibit

For the past three years, Hawaiian Electric has partnered with Honolulu Museum of Art to sponsor the museum's STEM-related exhibitions and school tours at Spalding House. This year, Hawaiian Electric co-sponsored Plastic Fantastic? – an exhibit that examines the history, benefits and drawbacks of plastic through art and art making. Sponsorship included subsidizing admission fees, transportation costs and art supplies so that students from across O'ahu could enjoy the exhibit and participate in hands-on activities to help them make the ecological connection between plastic and pollution. The grant also funded the development of an art installation made of marine debris at the Hawai'i Convention Center during the IUCN World Congress held in September, demonstrating how socially engaged art practices can convey powerful messages.

Recognizing Future Sustainability Leaders

Hawaiian Electric and HEI Charitable Foundation was a sponsor of the Sustainability in Higher Education Summit for 21st century campus sustainability at the University of Hawai'i. The summit culminated in the presentation of the first UH President's Green Initiative Awards, recognizing student initiative, innovation, creativity and civic engagement in campus and community sustainability.

Maui Sustainability Scholarship Endowment Fund

Maui Electric established the Maui Electric Company Sustainability Scholarship Endowment fund with a $30,000 grant from the HEI Charitable Foundation for students enrolled in the Sustainable Science Management program at University of Hawai'i Maui College. The endowment fund will provide for an annual scholarship of $1,000 in perpetuity. The scholarship, awarded to a student in need, may be used for tuition, books, fees and school-related supplies.

Our Maui Electric 'ohana also continued to support the advancement of Science, Technology, Engineering and Math (STEM) throughout Maui County with events like Introduce a Girl to Engineering Day, STEM Excite Camp and the Hawaii STEM Conference in 2016. Maui Electric engineers showed students basic circuitry with hands-on activities, like building an mp3 player and a basic motor.

Environmental Benefits

This report is printed with vegetable-based inks on paper made from 100 percent post-consumer waste, free of chlorine and manufactured from sustainable raw materials. The paper was certified by Rainforest Alliance to the Forest Stewardship Council® and meets the credibility of American National Standards Institute for longevity.

By using this paper, we conserved:
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