



STRATEGIC PLAN UPDATE 2016-2030

(Adopted January 31, 2017)

THE STRATEGIC CONTEXT



Much has changed for the island of Kaua'i since 2002, when Kaua'i Island Utility Cooperative (KIUC) purchased Kaua'i Electric (KE) from Citizens Utilities. Moving from an investor-owned model to a member-owned cooperative governed by an elected Board of Directors has delivered significant benefits to the Kaua'i community as a whole.

Prior to the sale, KE had relied for decades on imported diesel fuel for its generators. This reliance increased as sugar plantations on the island shut down and KE no longer had access to renewable power supplied by the plantations via the burning of bagasse.

After the sale to KIUC, and as the cooperative established itself, oil prices rose significantly. The KIUC board realized that member bills could increase to unacceptable levels because of continued dependency on fossil fuel. At the same time, the growing concern about carbon emissions and the resulting impact on climate change caused KIUC to begin a serious examination of feasible renewable energy technologies.

KIUC embarked on perhaps the most ambitious shift to renewable energy sources anywhere in the American electric utility industry. As this strategic plan update is written in 2016, renewables have increased from six percent of sales in 2007 to 37 percent in 2016. KIUC is rapidly closing in on reaching the 70 percent renewable level by 2030—a full decade ahead of the Hawai'i statewide goal.

Some of that momentum is attributable to our member-owners. At the end of 2012, more than 1,200 Kaua'i households had rooftop solar generating systems (often called "PV," for "photovoltaic"). By 2016, there were more than 3,500 such systems, with a capacity of 21 megawatts.

In addition to the rooftop systems, KIUC has either built or collaborated with third parties on three industrial scale solar projects, including Anahola (12 megawatts), Kōloa (12 megawatts), and Port Allen (6 megawatts). Three smaller privately owned solar arrays in Waimea, 'Ōma'ō and Kapa'a contribute 1.6 megawatts total. Currently under construction is a 13-megawatt solar array with battery storage capability adjacent to the Kapaia Power Station. This project – a partnership with Solar City and Tesla - is the first of its size in the nation.

KIUC's renewable portfolio also includes hydroelectric systems at Wainiha, Waiahi, Kalāheo, 'Olokele and Waimea/Kekaha, generating a combined total of 10 megawatts to the grid. A 6-megawatt system is under construction on Gay and Robinson land, and under consideration is an additional project that would combine solar and hydro in a pumped storage system, which could produce 25 megawatts at full capacity.

In 2016, Green Energy began operating its 7-megawatt biomass plant just outside Līhu'e. The plant provides 12 percent of Kaua'i's power, and is one of the first plants of its kind in this country: burning wood chips from invasive species and from locally grown trees. KIUC purchases electricity from the plant under the terms of a 20-year contract.

In 2016, on some individual days, KIUC derives 97 percent of its energy from renewable sources, including 77 percent from solar. On the average clear day, with solar at or close to full potential, all but one of KIUC's diesel generators can shut down. By replacing oil with renewables, the amount of carbon dioxide (CO₂) released by KIUC's power plants in 2016 is expected to fall to 225,000 tons. This is well below the 247,000 tons released in 1990, which is the baseline year for targeted greenhouse gas emission reductions according to the Kyoto Protocol.

These accomplishments are even more impressive when you consider that Hawai'i is unique within our country's energy landscape. We have no cheap natural gas, nuclear, large hydro, and little coal-fired generation (O'ahu only). Additionally, Kaua'i is unique within Hawai'i: no geothermal, limitations on wind due to the Endangered Species Act, and no economy of scale for many other potentially cheap renewables like biomass. So, with today's commercially available technology, KIUC is left largely with solar and small hydro to achieve its renewable goals.

Even with these challenges, fourteen years after our formation as a co-op, KIUC is regarded as one of the nation's most progressive, forward-thinking electric utilities.

As this astonishingly rapid strategic transformation has occurred, KIUC has proven that a progressive and aggressive approach to meeting member needs by keeping pace with new technologies can work to our members' advantage. For example, KIUC:

- ❖ Made history in 2016 by breaking ground on the electric industry's first utility-scale solar plant, with the capability to store power with batteries during the day for release to the grid during the evening peak-usage hours.
- ❖ Worked to welcome and integrate member-generated rooftop solar power into our grid, despite the technical challenges of balancing island-wide loads. Out of necessity, this has required us to discourage installation of oversize rooftop systems that produce more power than the individual member can use.
- ❖ Reduced average bills by 26 percent over the last three years, mostly as a result of low oil prices and a comprehensive focus on cost control. More importantly, our aggressive renewable progress has positioned us to protect ourselves more effectively against high oil prices that would negatively impact our members.
- ❖ Maintained high reliability with more than 99.96 percent average service availability during the last three years.
- ❖ Continued to explore new and creative uses of hydroelectric generation; expanding what we have and contemplating a new breakthrough in pumped storage technology. The new technology could enable us to use solar-generated power to pump water uphill from a holding pond to a reservoir behind a new hydro station during the day and release the water to run downhill through hydro generators at night.
- ❖ Began to explore ways to shift some legacy oil-fired generation to propane or renewable-based fuels, in order to take advantage of potential cost savings in the always volatile oil market.
- ❖ Returned \$25 million in patronage capital (i.e. excess earnings) to member-owners. This is significant in that this money stays on Kaua'i in the pockets of our members, versus being returned to off-island investors, as was the case under previous ownership.
- ❖ Rebuilt our customer service infrastructure so paying bills and interacting with us is easier.
- ❖ Continued to enhance approaches to avoid death or injury to endangered birds that collide with power lines. At the same time, we are seeking a new long-range permit intended to mitigate the impacts of our facilities.



- ❖ Began to consider moving out from under the authority of the PUC to a deregulated or minimally regulated status, which would allow us greater flexibility in responding to member concerns and unexpected changes in fuel prices and market conditions.
- ❖ Assisted efforts on other islands to create member-owned electric cooperatives. Starting with Hawai'i Island, KIUC has offered its experience and expertise to other communities.

What does the future hold? Our initiatives moving forward include:

- ❖ We will expand our search for alternatives to oil for legacy generating systems that must remain available to ensure adequate stability and capacity in order to meet the needs of all members.
- ❖ After concluding that liquefied natural gas is not a fuel alternative that will be embraced in Hawai'i in the near term, we have shifted to considering expanded use of propane or renewable based fuels. Prices of these products could be locked in with more future certainty than oil.
- ❖ We will continue to focus on cost control while balancing customer service and reliability. Since 2007, our staffing level has declined from 174 to 149 employees. This is evidence of how KIUC has kept pace with technology without sacrificing customer service. It also underscores the competence and flexibility of our work force.
- ❖ Because we strive to balance service levels and member costs, we are considering filing for a rate revision with the PUC. A revised rate plan would allow us to more fairly balance costs among different member types, and incentivize use during non-peak hours.
- ❖ An adequate supply of energy would have no usefulness without the ability to reliably deliver that energy through KIUC's transmission and distribution infrastructure. This network must be maintained and upgraded to ensure that KIUC's high standards for safety and reliability continue to be met.

STRATEGIC GOALS AND ACTIONS

- A. Generate at least 70 percent of electricity by using cost effective renewable resources by 2030. This achievement level will place KIUC ten years ahead of state mandates as we progress toward 100 percent renewable electric production by 2045.
- B. Manage technology and price risk by adding new renewable generation sources at no more than 20 percent of Kaua‘i’s electric usage in any single year.
- C. Hold controllable cost increases at or below the actual level of inflation, and maintain system reliability at 99.96 percent or better availability.
- D. Establish a rate structure that is fair between classes of members, encourages usage during lowest cost periods, and increases financial stability through greater recovery of cost through fixed charges rather than reliance on volume of electricity consumed.



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- E. Maintain a safe, diverse, well trained, competitively compensated and motivated work force, aligned with organizational strategies and able to respond quickly to business opportunities and threats.
 - F. Maintain a prudent financial structure and access to capital.
 - G. Consider and potentially seek increased exemption from regulation by the PUC through changes in state law or PUC order. Current state law, enacted in 2013, states “the public utilities commission and the consumer advocate shall at all times consider the ownership structure and interests of an electric cooperative in determining the scope and need for any regulatory oversight or requirements over such electric cooperative.”
 - H. Continue to address the strategic implications of climate change, including reducing the utility's contribution to greenhouse gas emissions, adapting to the direct and indirect impacts locally and developing mitigation measures to protect the cooperative's assets.
 - I. Obtain long-term incidental federal and state permits that set requirements for conservation of endangered bird species. The permitting process places limits on the number of birds that can be injured or killed in collisions with power lines or other electricity-related incidents. These incidents are called “takes.” We will seek government grants, where available, to help mitigate some of the expenses associated with the application process.
 - J. Obtain fixed pricing, three years in advance, for at least 25 percent of our fossil fuel requirements. Recent renewable projects have also used fixed pricing to help stabilize electric rates.
 - K. Continue investing in technology to cost-effectively maintain or improve our member service offerings and utility operations, including our smart-grid, in order to continue our transformation towards a 100 percent renewable future and lower operating costs.

The Strategic Plan sets the overall direction of KIUC and intends to benefit members, directors and employees.

This Strategic Plan updates and expands the Strategic Plan 2008-2023. The goal remains the same: to faithfully serve KIUC's members with reliable, reasonably priced electricity and to improve the quality of their lives.

VISION, MISSION AND CULTURE

Vision — Improve the quality of life for KIUC's members and on Kaua'i

Mission — Be an energy solutions leader by:

- ❖ Safely providing reliable power that is fairly and competitively priced
- ❖ Encourage conservation and efficient use of energy resources
- ❖ Increasing sustainable power supply and environmental stewardship

Culture — The culture is shaped by several elements, all critical to KIUC's success. KIUC embraces the seven cooperative principles and a Hawaiian-based values system, derived from an employee-adopted set of shared values called Ho'oka'ana Waiwai.

7 COOPERATIVE PRINCIPLES

Voluntary and Open Membership

Democratic Member Control

Members' Economic Participation

Concern for Community

Autonomy and Independence

Education, Training and Information

Cooperation Among Cooperatives

VALUES

- ❖ **Respect (Kupono)**: treating everyone with fairness, integrity and honesty
- ❖ **Teamwork (Laulima)**: looking out for each other and working together as one team toward common goals
- ❖ **Excellence (Ho'okela)**: striving to provide the best professional service to our members by producing high quality work and excelling in everything one does
- ❖ **Responsibility (Kuleana)**: practicing stewardship and the privilege of doing the right thing for our members in a responsive manner

KIUC BOARD OF DIRECTORS

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The KIUC Board of Directors would like to acknowledge former Director Dennis Esaki, who made valuable contributions as Chair of the Strategic Planning Committee throughout most of the update process.



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