



STRATEGIC PLAN UPDATE
2023-2033

Introduction

The years 2021 and 2022 will be remembered as a “watershed” period for Kaua‘i Island Utility Cooperative. As it enters its 20th year of existence as of November 2022, KIUC leads the state in three key metrics: renewables, reliability and lowest rates. Consider:

- ☀ In 2021, for the third straight year, KIUC had the highest percentage of renewable generation in the state in its annual Renewable Portfolio Standards (RPS) filing for the Hawai‘i Public Utilities Commission (PUC). At nearly 70% renewable generation, KIUC achieved more than double the state-required RPS for 2021 (30%), and nearly met its own Board of Directors’ strategic goal of 70% renewable by 2030 a full nine years early.
- ☀ KIUC achieved this high penetration of renewables – more than two-thirds of which was solar - without negatively impacting reliability. In fact, for the second straight year, KIUC in 2021 had the best reliability statistics in the State of Hawai‘i, reporting 99.9852% system availability to the PUC, far exceeding the Board of Directors’ current strategic target of 99.96%.
- ☀ For the first time since its formation in 2002, KIUC reported the lowest residential rates in the state in May 2022, and remained the lowest through the remainder of the year. By employing sound fiscal management and replacing price volatile fossil fuel with fixed-price renewables, KIUC closed a 70% gap in pricing with O‘ahu. This achievement is particularly noteworthy since O‘ahu is much larger than Kaua‘i and their utility benefits from economies of scale not available to KIUC.

KIUC’s Board of Directors has always set aggressive goals for the cooperative. The most recent Strategic Plan, adopted in 2016, included the following goals:

- Generate at least 70% of electricity by using cost effective renewable resources by 2030
- Manage technology and price risk by adding new renewable generation sources at no more than 10% of Kaua‘i’s electric usage in any single year
- Hold controllable cost increases at or below the actual level of inflation, and maintain system reliability at 99.96% or better availability
- Continue to address the strategic implications of climate change, including reducing the utility's contribution to greenhouse gas emissions (GHG), adapting to the direct and indirect impacts locally and developing mitigation measures to protect the cooperative's assets
- 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% renewable future and lower operating costs

Some goals in the 2016 Strategic Plan – such as those listed above – have been met, some are still in progress, and others have either been revised or reconsidered given evolving circumstances. However,

enough has been accomplished – and enough has changed in our operating environment – for the Board of Directors to embark on the adoption of a new, bold and well-targeted Strategic Plan for KIUC.

Today's External Environment

Economic Trends

As of 2021, Kaua'i's resident population was recorded at 73,298. Compared to a population of 67,091 in 2010, this indicates a relatively small growth rate of roughly 1% per year. During that same period visitor arrivals experienced significant growth, with the average daily visitor census growing from 19,716 in 2010 to 27,695 in 2019: resulting in a de facto daily population of more than 100,000 and a growth rate of almost 2% per year.

Visitor arrivals during the COVID-19 impacted period of 2020-2021 took a steep decline; however, numbers quickly rebounded to near "normal" levels when Kaua'i re-entered the so-called "Safe Travels" program in April 2021. With the ensuing steady increase in travel to Kaua'i and no current travel restrictions or other limiting mandates, Hawai'i appears to be continuing its recovery from the long-lasting effects of the pandemic. The number of travelers to Kaua'i in 2022 was consistently equal to or exceeded 2019 pre-pandemic levels, and hotel performance data reflects an increase in occupancy and room rates, respectively.

While current economic indicators continue to point to an overall favorable trend as compared to 2020 and 2021, it remains unclear when a full economic recovery will take place on Kaua'i. The severity and duration of the economic impacts of the COVID-19 pandemic on the island of Kaua'i and on KIUC remain unknown, as both will continue to be impacted by many variables, including but not limited to, the rate at which employment will return to more normalized levels, the ability of tourism to continue rebounding and maintaining or exceeding pre-pandemic levels, the number of bankruptcies and closures of various small and large businesses, the continued distribution and availability of the COVID-19 vaccines and boosters to the public, vaccination rates and their impact on the number of active COVID-19 infections, the continuation and severity of COVID-19 variants, and, ultimately, how all of these impacts resulting from a world-changing pandemic will permanently change customer usage patterns even after all variables are known and the health risks from the COVID-19 pandemic are deemed under control.

Federal Legislation:

In November 2021, President Biden signed a \$1 trillion bipartisan infrastructure package into law. There is approximately \$110 billion in the Bipartisan Infrastructure Law (BIL) that the National Rural Electric Cooperative Association and its members identified as relevant funding opportunities for co-ops and the communities they serve. Funding opportunity topics include grid modernization and resiliency, clean

energy, electric vehicle charging infrastructure, cybersecurity and broadband ¹. KIUC will monitor and, where appropriate, participate in applications for funding opportunities available under BIL. The law also provides increased incentives for electric vehicles and charging infrastructure.

In August 2022, the Inflation Reduction Act was signed into law by President Biden. This law represents the largest commitment in U.S. history towards fighting climate change and includes almost \$400 billion in tax incentives towards renewable energy and other efforts towards reducing carbon emissions. Of particular interest to KIUC are provisions to extend the Investment Tax Credit (ITC) for solar projects by ten years, allowing standalone battery storage to be eligible for ITC, and provisions that make electric cooperatives eligible for direct payment of ITC.

Global Impacts:

Political unrest leading to the war in Ukraine created uncertainty in global oil markets, effectuating a spike in oil prices not seen in more than a decade. These events happen far from our shores but have proven catastrophic to KIUC members in the past, with wildly escalating electric bills wreaking havoc on household and commercial budgets. Between the summer of 2021 and the summer of 2022, the rest of the State experienced electric rate increases as high as 50% due to the global oil crisis, while KIUC's rates increased only a fraction of that amount: roughly 10%. The key to KIUC's success in this regard was the accelerated adoption of new renewable generation sources since 2010, placing the majority of the utility's generation on the shoulders of facilities with fixed-priced power purchase agreements. It's estimated that since 2010, KIUC's members have saved \$56 million as a direct result of increased renewable generation.

Supply chain disruptions due to the pandemic coupled with geopolitical unrest have impacted the financial health of businesses across all sectors of the economy. These challenges are exacerbated for Hawai'i due to our geographic isolation and the relatively small size of our economy compared to other countries/regions that are competing for the same, limited resources.

Climate change continues to be one of the foremost challenges facing our planet, with no solution in sight. A 2017 report published by the Environmental Protection Agency on Climate impacts on islands within the United States noted: "Many islands are especially vulnerable to the risks of climate change because of their small size, low elevation, remote geographical location, and concentration of infrastructure along coastlines." Temperatures in Hawai'i are expected to rise by 1.5°F to 3.5°F by mid-century, and precipitation is expected to decrease in the Pacific Islands, according to the report. Climate change will impact the availability of water resources and threaten coastal infrastructure: all things KIUC must monitor closely.

¹ From NRECA, Infrastructure Bill Funding Opportunities. A Guidebook for Preparing Electric Cooperatives, July 2022.

Preparing for and preventing cyber-attacks has become a core function of utilities around the globe. According to an April 2022 report by WSJ Pro, energy is one of the top three sectors targeted for attack in the United States. KIUC has invested heavily in its technology infrastructure in recent years, and significant investments are expected to continue.

Alignment with Other Plans:

The State of Hawai‘i’s Office of Planning and Sustainable Development’s Statewide Sustainability Program recently updated the Hawai‘i 2050 Sustainability Plan to serve as the state’s sustainability and climate strategic action plan; align the State’s goals, policies, and actions with the United Nations Sustainable Development Goals; and recommend sustainability and climate change actions for 2020–2030. Among the goals identified in the Plan are:

- Ensure access to affordable reliable, sustainable, and modern energy for all. The Plan notes that the energy sector is largest source of emissions in Hawai‘i, accounting for 87% of total GHG emissions, with transportation accounting for the largest share of energy sector emissions.
- Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation. The Plan asserts Hawai‘i has an opportunity to incorporate green infrastructure as an adaptation strategy by adopting design concepts such as installation of more vegetation and permeable surfaces, which can decrease urban temperatures, reduce carbon emissions, improve air quality, increase urban tree canopy, and capture water to replenish the water table.
- Take urgent action to combat climate change and its impacts. Hawai‘i anticipates an estimated 3.2 feet of sea level rise by 2100. Climate change impacts, such as sea level rise and more frequent and intense extreme weather events (hurricanes, flood, droughts), pose an increasing threat to infrastructure and communities.
- End hunger, achieve food security and improved nutrition and promote sustainable agriculture. While promoting food security is not a core mission of electric utilities, there are ways to support agricultural goals through strategic development of renewable projects. For example, the West Kaua‘i Energy Project will allow for expansion of agriculture in addition to significantly increasing renewable energy production.

Closer to home, the County of Kaua‘i Planning Department is developing a Climate Adaptation Plan (CAP) (www.Kauaiadaptation.com).

The CAP will build upon the County of Kaua‘i 2020 Multi-Hazard Mitigation and Resilience Plan, which assessed natural hazards that may affect the island. The Climate Adaptation Plan will further analyze this information, focusing on factors such as:

- ✓ Sea Level Rise, Coastal Flood and Erosion
- ✓ Tropical Cyclone and Other High Winds
- ✓ Extreme Rainfall and Inland Flooding
- ✓ Extreme Heat and Drought
- ✓ Wildfire

Current Challenges and Opportunities for KIUC

In addition to considering the external factors that impact our cooperative, it's important to carefully examine what's happening within our cooperative before setting strategic goals. Over the past 20 years, KIUC has made great progress realizing the benefits of the cooperative ownership and governance structure. Moving from zero percent equity in 2002 to nearly 35% equity in 2021, retiring more than \$40 million in patronage capital to members, increasing renewables from 10% to nearly 70% in a decade, and achieving the lowest rates in the state while maintaining the best system reliability are but a few of our most significant accomplishments.

And yet many challenges remain. Consider the following:

- **Financial stability** is critical to maintaining a rate structure that is as affordable as possible for members. Financial stability can be impacted by many things, and recent years have presented numerous challenges to stability, such as:
 - Supply chain disruptions, especially those created by circumstances beyond our control, impacted the financial health of KIUC as well as businesses across all sectors of the economy.
 - Costs associated with compliance with the Endangered Species Act have escalated significantly over the past ten years, and will continue to be a significant part of KIUC's annual budget for the foreseeable future. KIUC does not currently have a mechanism for absorbing this additional expense through its rate structure, which has caused erosion of net margins over the past decade.
 - Inflation has driven up the cost of doing business significantly over the past 13 years, however, growth in electric sales has not kept pace and KIUC's base rates have not increased since 2010. KIUC's request for a base rate increase, the first in 12 years, was filed with the Hawai'i Public Utilities Commission (HPUC) in December 2022.
 - Distributed generation and storage can be beneficial to KIUC's members from both a reliability and a cost of energy standpoint. However, these technologies also provide a challenge to KIUC as they can result in lower energy sales which could result in higher energy costs for members unable to self-generate.
 - KIUC has traditionally experienced employee retention rates well above the national average, reducing the cost of turnover and stabilizing operations. Similar to other employers, COVID-19 and the associated economic downturn changed the landscape for KIUC on employee retention, particularly with "early" retirements being taken by long-term employees. Competing for employees is time consuming and costly, creating new financial strain for KIUC.
- **Reaching 100% renewable generation** is a priority for KIUC and we are on track to reach that mark well ahead of the State of Hawai'i mandated deadline of 2045. KIUC has been careful to pace the adoption of new renewable sources to benefit from evolving technology, while capturing available tax credits by creating partnerships with industry leaders, in order to contain

the cost of investment. While a feasible path for KIUC to 100% renewable is becoming clearer, challenges remain:

- KIUC is actively developing the West Kaua‘i Energy Project (WKEP) which would provide longer duration storage for solar and hydro-based generation, addressing the gap in renewables currently experienced during non-solar hours. It is anticipated that WKEP could move KIUC towards 90% renewable sourced generation.
 - KIUC’s peak load in 2022 hovers around 75 megawatts, and the all-time peak demand occurred in 2019 at 80 MW. In order to serve the peak, in addition to renewable resources such as batteries, KIUC maintains 105 megawatts of conventional generators that currently operate on petroleum (naphtha and ultra-low sulfur diesel), but could also run on a renewable fuel like biodiesel.
 - Ultimately, even with WKEP, as we approach 100% renewable generation for the island, it is likely that conventional generators will continue to be part of our energy mix, although perhaps fueled by biofuels rather than petroleum. Liquid-fueled generators are not weather dependent and can store weeks of fuel in a very small footprint. KIUC’s conventional generators’ average age is 46 years and some units are losing manufacturer support for parts and services. KIUC will evaluate replacement of some of these older generators with new units that could provide high-efficiency, reliability, and the continued ability to serve the peak demand without relying too heavily on weather-dependent sources like solar and hydro.
 - Emerging technologies, such as hydrogen for electric generation will also be closely monitored and considered as a potential fuel source.
 - An increasing number of companies are considering goals toward carbon neutrality: i.e., neutralizing their carbon footprint via a combination of reducing emissions and taking other measures such as investing in offsets for emissions. KIUC focus remains on renewable energy generation as the most impactful way to reduce our carbon footprint. However, KIUC should monitor trends and actions being taken by utilities in relation to carbon neutrality, with the possibility to establish future strategic goals in this area.
- **Reliability** of our electrical service remains of key importance, and new technology such as electric vehicles and battery storage will present many challenges and opportunities for our grid. The ability to reliably provide electricity to Kaua‘i depends upon having sufficient generation, transmission, and distribution resources available at all times. With respect to generation, KIUC must ensure that it not only has adequate generating resources, but that it also maintains sufficient storage to power those resources continuously when the unexpected happens. With respect to transmission, KIUC should ideally have at least two transmission lines serving all portions on the island, and must maintain those lines to avoid unnecessary outages. Kaua‘i’s North Shore reliability remains a challenge for the cooperative with limited transmission service, remote and environmentally sensitive access. KIUC anticipates significant infrastructure investments to improve North Shore reliability in the coming years. With respect to distribution, KIUC will continue to review all outages that occur with the goal of reducing and eliminating unnecessary outages.

- **Mitigating climate change impacts** to KIUC's infrastructure will be critical to ensure the reliable delivery of electricity to members in future decades. KIUC has identified vulnerabilities and is already being proactive by relocating the Kapa'a Service Center to a new site in Anahola. The Kapa'a switchyard remains at this location, and options for relocation are being developed. We continue to monitor evolving predictions relating to sea level rise to identify any additional infrastructure that may become vulnerable in the future.
- **State and federal regulation** impacts our operations in many ways. KIUC continues to be regulated by the PUC and our financial stability and our progress towards 100% renewable energy generation is ultimately tied to receiving positive outcomes from our various regulatory proceedings. Our relationship with the PUC has historically been constructive. However, cost and time commitments associated with PUC regulation continues to be of concern. KIUC is also subject to federal oversight from the Rural Utilities Service (RUS) which is one of our major sources of capital for funding our operations. KIUC's relationship with RUS has also been constructive. In 2019, KIUC entered into an Indenture of Mortgage with RUS which shifts certain RUS compliance requirements to a trustee and substantially reduced the regulatory burden associated with RUS borrowing.
- **Cybersecurity**, as mentioned previously, remains one of the biggest threats to utilities across the globe. KIUC continues to invest in its technology infrastructure to address cybersecurity.

With challenges in mind, it's important that we focus equal attention on the numerous opportunities KIUC could embrace:

- **Exploring possible new revenue streams** beyond our current business model, such as finding a niche in the growing alternative fuel vehicle economy, securing more state and federal grants, and offering new services utilizing existing infrastructure (e.g., middle-mile broadband).
- **Putting the needs of members first** is a basic tenet of the cooperative structure. Our affiliation with the National Rural Electrical Cooperative Association (NRECA) and other cooperative-focused organizations and vendors affords KIUC access to sophisticated software and member-facing applications at prices well below what would be available to us as a small, stand-alone utility. Energy efficiency and rebate programs for both residents and businesses will not only continue, but evolve and expand with the needs of our members. KIUC will also continue to collaborate with government and non-profit entities to ensure financial assistance is available to members in need.
- **Stabilizing rates** by replacing fossil fuel with renewable sources either owned by KIUC or purchased via long-term, fixed-rate agreements will continue to be a key component of our strategy.
- **Reducing GHG emissions** on an accelerated pace has been a basic tenet of KIUC's previous Strategic Planning efforts. KIUC is already decades ahead of established state mandates for renewable production and has exceeded aggressive goals set by its Board of Directors in 2008

and 2016. Achieving 100% renewable as soon as possible, in a way that doesn't compromise reliability and financial stability, is a goal worthy of pursuit.

Based on the foregoing, the KIUC Board of Directors have identified three primary strategic goals for the cooperative:

Goal 1 – Cost of Electricity

KIUC will deliver reliable electricity at the lowest possible cost.

- *Objective 1.1: Have the lowest electricity rates in Kaua'i while maintaining reliability and financial stability*
- *Objective 1.2: Save members money by:*
 - *Relying more on our elected board of directors and less on state regulators for oversight and decision making*
 - *Expanding the use of technology*
 - *Offering free energy efficiency consultation*
- *Objective 1.3: Lower costs by diversifying and expanding the cooperative's financial resources*
 - *Seek and secure federal and state grants benefiting KIUC and our members*
 - *Seek new business opportunities that align with our assets, operations, goals and - member needs*

Goal 2 – Carbon Footprint

KIUC will contribute to a sustainable Kaua'i.

- *Objective 2.1: By December 2023, develop a plan with timeline to reach and maintain 100% renewable generation by 2033: 12 years ahead of the State of Hawai'i mandate*
 - *Pursue renewable projects that reduce greenhouse gas emissions AND help stabilize electricity rates*
 - *Plan for replacement of current renewable energy sources*
 - *Execute contracts for renewable fuels that are economically and environmentally justifiable*
 - *Own and operate conventional generating units that are reliable, efficient, and able to utilize renewable fuel sources*
- *Objective 2.2: Be a trusted source for members as they transition to renewables for self-generation, transportation and other daily needs. Provide technical and prudent financial support to facilitate the transition to electric vehicles on Kauai with emphasis on developing programs and making investments to minimize impacts of charging on KIUCs electric grid.*

- *Objective 2.3: Promote and fund incentives for energy efficiency for residents and businesses. Provide technical support and education for cost effective energy efficiency investments by members*
- *Objective 2.4: Continue and potentially expand educational efforts for Kauai residents related to climate change and sustainability.*

Goal 3 – Resiliency and Reliability

KIUC will become more resilient, improve reliability, and be better able to handle operational challenges and threats from cybersecurity, local climate change impacts, and natural disasters such as hurricanes and floods.

- *Objective 3.1: Lead the State of Hawai‘i in reliability*
 - *Develop a second transmission line to mitigate North Shore outages associated with the existing single transmission line*
- *Objective 3.2: Develop a plan to move or upgrade electrical equipment threatened by climate change*
 - *Move Kapa‘a substation to higher ground or otherwise mitigate potential inundation risk*
- *Objective 3.3: Improve systems and practices to prevent or mitigate the impacts of cyber-attacks to help ensure continuation of electrical service and business functionality*
 - *Develop and adopt a companywide cyber framework to protect the grid from cyber-attacks, ensure protection of company and member data and provide redundancy for access to data in the event of a cyber attack*
- *Objective 3.4: Evaluate micro-grid options and opportunities for high-risk areas on Kaua‘i. Implement micro-grids where both economically and technically practical*