

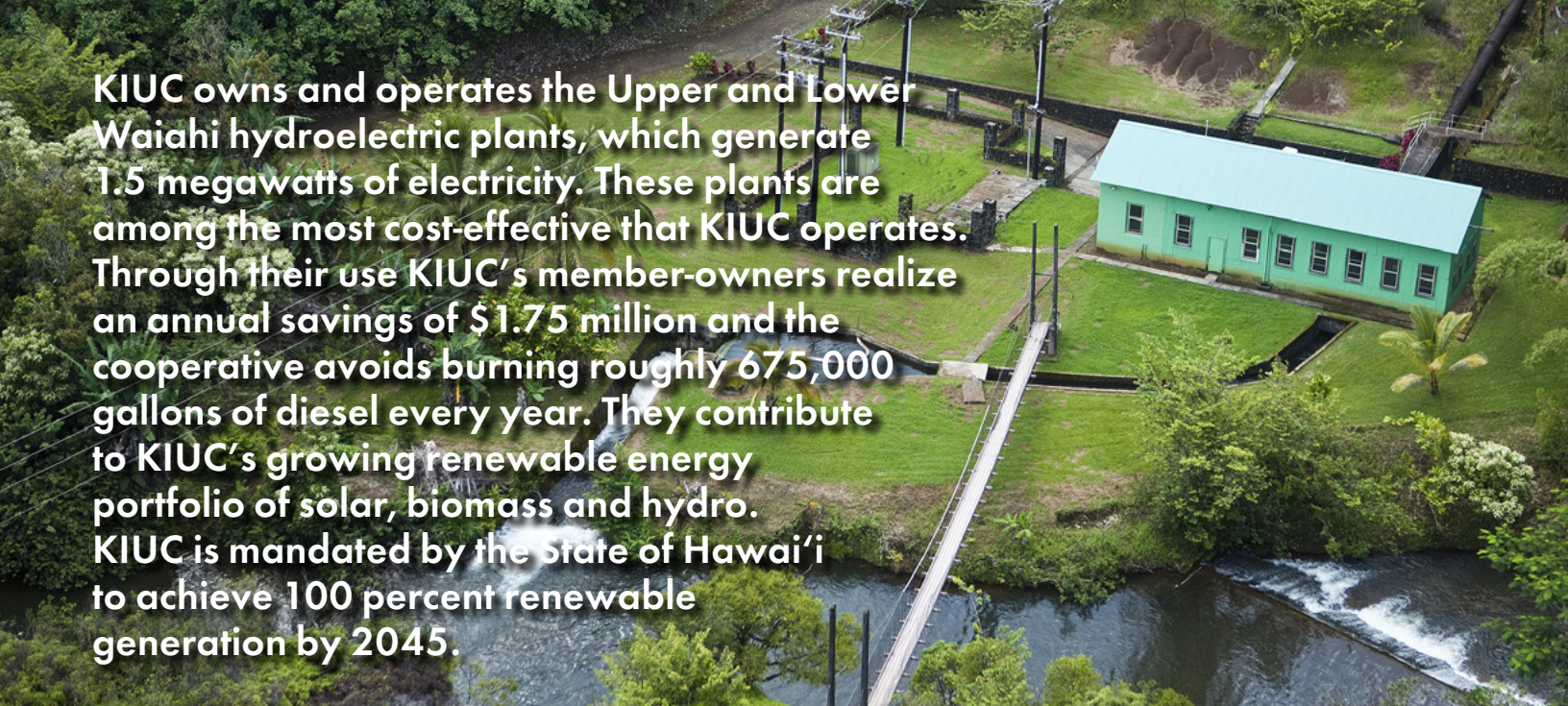
# WAIIAHI HYDROPOWER FACILITIES



**Kaua'i Island  
Utility Cooperative**

Your Touchstone Energy® Cooperative





**KIUC owns and operates the Upper and Lower Waiahi hydroelectric plants, which generate 1.5 megawatts of electricity. These plants are among the most cost-effective that KIUC operates. Through their use KIUC's member-owners realize an annual savings of \$1.75 million and the cooperative avoids burning roughly 675,000 gallons of diesel every year. They contribute to KIUC's growing renewable energy portfolio of solar, biomass and hydro. KIUC is mandated by the State of Hawai'i to achieve 100 percent renewable generation by 2045.**

## **HISTORY**

The use of water resources to create renewable energy has a long history on Kaua'i. The Waiahi hydros have been in operation for nearly a century, originally built by L'Thu'e Plantation Company for their sugar operations. To enhance water flow through the hydro plants, diversions were built at the North Fork of the Wailua River and at Waikoko Stream. Diverted water was delivered to the plants via a ditch system developed and maintained by the plantation. Water that flowed through the plants was also used for plantation irrigation purposes.

The first lease for these facilities was issued by the State of Hawai'i to the East Kaua'i Water Company in 1965. The agreement included operation and maintenance of diversions at North Fork and Waikoko (collectively referred to as "Blue Hole Diversion"), along with the associated ditch system. The original lease had a 30 year term, which expired in 1995, and was then continued via a month-to-month revocable permit.

Following the closure of L'Thu'e Plantation in 1999, Kaua'i Electric (now KIUC) assumed operation of the hydroelectric plants, and requested approval from the State Board of Land and Natural Resources (BLNR) for continued water use from the North Fork Wailua and Waikoko diversions. BLNR granted the revocable permit, to be renewed annually, in 2002.

Recognizing the importance of maintaining this renewable energy resource, in 2004 KIUC asked the BLNR for a long-term lease for operation and maintenance of the diversions and associated ditch system. Since that time, KIUC has worked with the staff of the Department of Land and Natural Resources (DLNR) and the Office of Hawaiian Affairs (OHA) to address concerns relating to environmental and wildlife impacts, as well as cultural issues. A contested case filed by OHA in 2004 was withdrawn in 2012 when KIUC and OHA came to agreement on a number of studies to be conducted prior to the lease being issued.

Starting in 2016 KIUC conducted additional studies outside of the MOA requirements in support of meeting HRS requirements for a water lease. The additional studies include an update of the 2013 stream biota study and an expanded stream study, an expanded scope of the Cultural Impact Assessment, installation of additional monitoring equipment and flow data collection on ungauged sections of ditch, a flora fauna study, and a socioeconomic study. All of these studies are now complete and KIUC has submitted an environmental assessment to the Department of Land and Natural Resources (DLNR) Land Division for the department's review and approval.

KIUC continues to work with the staff of DLNR Land Division, the Commission on Water Resources Management (CWRM), Department of Hawaiian Homelands, DLNR Division of Forestry and Wildlife, DLNR Office of Conservation and Coastal Lands, U.S. Fish and Wildlife Service, and OHA to address concerns relating to environmental and cultural issues.

To comply with a condition of its revocable permit renewal, in early 2018 KIUC completed modifications to the ditch at both North Fork Wailua and Waikoko to effectuate the release additional water back to the stream whenever there is water flowing in the ditch.

Up until 2019, KIUC's revocable permit allowed a diversion amount of up to 14.2 million gallons per day (MGD) on a combined annual basis for North Fork and Waikoko diversions. However, the actual average diversion rate is recorded at 13.4 MGD, per monthly records transmitted to CWRM.

In December 2018, BLNR approved a one year extension to KIUC's RP restricting the available amounts that could be diverted at median stream flow to 8.0 MGD from North Fork Wailua and 1.6 MGD from the Waikoko Stream. In early 2019, KIUC made modifications to the ditch system to release 4 MGD at North Fork and .8 MGD at Waikoko during all flow conditions, which is consistent with the CWRM staff report recommendation for interim instream flow standard amounts on both streams.

## GENERAL INFORMATION

KIUC is a not-for-profit, member-owned cooperative. Therefore, it does not make "profits." Any revenues KIUC collects in excess of expenditures is returned to members in the form of patronage capital. Furthermore, the benefits of operating the Waiahi hydro system are not profit-related. Use of the hydro system allows KIUC to avoid burning roughly 675,000 gallons of oil every year. It is also one of KIUC's most cost-effective energy generation facilities, which actually saves money for our member-owners.

**Public Trust Doctrine and Hydro:** DLNR staff has acknowledged in its recommendation for renewal of the revocable permit in 2017 and 2018 that hydropower is not an identified public trust use. However, the recommendations also state that public trust concerns will be addressed in the processing of KIUC's lease application and this has not to date precluded KIUC from obtaining renewals of its revocable permit.

**Impacts to species:** KIUC has engaged consultants to complete a number of studies relating to potential impacts to aquatic species. Stream studies were completed in 2008 and 2013, and updated in 2018. Initial results of all stream studies show minimal to no

negative impacts to aquatic species and some positive impacts for native species. The ditch system has provided habitat and corridor for the native 'Ōpae to travel from the South Fork to the North Fork. In addition the North Fork Diversion is a barrier to invasive bass traveling upstream into more pristine areas of the stream. Specific to concerns about the endangered species Newcomb's snail, there were no sightings of Newcomb's snail in USFWS surveys or KIUC stream study surveys at or near the diversion. The designated habitat identified by USFWS starts at the diversion and goes upstream.

**Environmental/Permitting requirements:** Neither an EIS nor an environmental assessment is required as a condition for renewal of the revocable permit, pursuant to exemption Class 1 of Hawai'i Revised Statutes Chapter 343. KIUC has completed an environmental assessment in support of compliance with HRS 343 and its application for a long-term lease.

**Water monitoring:** KIUC's diversions are metered and reports are submitted regularly to the Commission of Water Resource Management.

## BENEFITS OF THE WAIIAHI HYDROELECTRIC SYSTEM:

❖ **The system helps us provide low-cost, reliable power to our 33,000 members.** The Waiahi hydro facilities contribute 1.5 megawatts of power, and are an extremely cost-effective and reliable source of energy for our members. Any reduction in the productivity of the hydros results in an immediate cost increase for KIUC members and increased greenhouse gas emissions.

❖ **The system is a foundational element of KIUC's renewable portfolio.** The KIUC Board of Directors has set an aggressive goal of reaching 70 percent renewable generation by 2030. Additionally, the State of Hawai'i has mandated that all generation shall be 100 percent renewable by 2045. Currently KIUC is approaching 55 percent renewable, which includes the Waiahi hydro facilities. By strategic deployment of additional solar + battery and pumped storage hydro generation, along with our current solar, hydro and biomass generation, KIUC is confident these goals are achievable.

❖ **The system provides for significant greenhouse gas reduction.** The two hydroelectric plants now operated by KIUC, under a revocable permit with the Department of Land and Natural Resources, have the capability of producing roughly 1.5 megawatts of power to the island's grid, and prevent over 675,000 gallons of oil being imported to the island every year.

❖ **The system allows agriculture to flourish.** The diversions and their associated ditch systems were built nearly 100 years ago in order to support Kaua'i's sugar industry and renewable energy production. Today, the Waiahi hydro plants and ditches continue to support diversified agriculture in central Kaua'i by increasing water flow available to the Upper LThu'e Ditch and the Hanamā'ulu Ditch via Waiahi Stream. Today, roughly 75 tenants grow a variety of crops on 10,000 acres of state and private agricultural land in the Kōlepa region.



## FREQUENTLY ASKED QUESTIONS (FAQ)

**Q: Is KIUC diverting 100 percent of the water at Blue Hole?**

**A:** No, KIUC does not take 100 percent of the water at Blue Hole. Under the terms of its revocable permit as approved by BLNR in December 2018, KIUC is allowed to divert during median flow up to 8 million gallons per day (MGD) from North Fork Wailua and up to 1.6 MGD from Waikoko Stream.

**Q: Has KIUC altered the Blue Hole diversion to take all of the water?**

**A:** KIUC has made no alterations to this 100-year old diversion. However, in 2018 and 2019 we made modifications to the ditch just below the diversion to release water back into the stream whenever there is flow in the ditch, therefore taking LESS water into the ditch system than in previous years.

**Q: Does KIUC have the proper permits to operate the diversion?**

**A:** KIUC operates the Waiahi hydro system under a revocable permit issued by BLNR, and has applied for a long-term lease with the agency.

**Q: Does KIUC profit from use of the water from Blue Hole and Waikoko?**

**A:** KIUC is a not-for-profit, member-owned cooperative. Therefore, it does not make "profits." Any revenues KIUC collects in excess of expenditures is returned to members in the form of patronage capital. Furthermore, the benefits of operating the Waiahi hydro system are not profit-related. Use of the hydro system allows KIUC to avoid burning roughly 675,000 gallons of oil every year. It is also one of KIUC's most cost-effective energy generation facilities, which actually saves money for our member-owners.

**Q: Is KIUC violating the state's 'public trust' doctrine in its operation of the Waiahi hydro system.**

**A:** DLNR staff has acknowledged in its recommendation for renewal of the revocable permit in 2017 and 2018 that hydropower is not an identified public trust use. However, the recommendations also state that public trust concerns will be addressed in the processing of KIUC's lease application. This has not to date precluded KIUC from obtaining renewals of its revocable permit.

**Q: Are the diversions harming wildlife and endangered species in the streams?**

**A:** KIUC has engaged consultants to complete a number of studies relating to potential impacts to aquatic species. Completed in 2008 and 2013, and updated in 2018, these studies have concluded that impacts to aquatic species in the stream are minimal to none. Specific to concerns about the endangered species Newcomb's snail, the studies have concluded that snail habitat does not exist at either of the diversions.

**Q: Is KIUC operating the diversions without having completed a required environmental impact statement?**

**A:** An EIS is not required as a condition for renewal of the revocable permit, pursuant to exemption Class 1 of Hawai'i Revised Statutes Chapter 343. In support of its long-term lease application, KIUC has submitted an environmental assessment with the Department of Land and Natural Resources Land Division in order to satisfy Chapter 343 compliance.

**Q: How is KIUC's use of the water monitored?**

**A:** KIUC's diversions are metered, and reports are submitted regularly to the Department of Land and Natural Resources. The Commission on Water Resources Management has installed a gauge in North Fork Wailua below the diversion and a data logger below the Waikoko Diversion to monitor stream flow. CWRM gauge readings from North Fork Wailua are available to the public on the internet.



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