WEST KAUA‘I ENERGY PROJECT

Hawaiian Homestead Commission Briefing
August 2021
Kauaʻi’s 100% Renewable Challenge

• 100% of Kauaʻi’s daytime demand for electricity routinely met by renewables

• Solar and battery limitations
  • Sun dependent
  • Short duration storage

• Long-duration storage needed to achieve 100% renewable at night and during prolonged periods without solar
KIUC Fuel Mix

- **2009**
  - Fossil Fuel: 91%
  - Other: 9%

- **2020**
  - Fossil Fuel: 33%
  - Solar: 42%
  - Biomass: 14%

- **2025**
  - Fossil Fuel: 10%
  - Solar: 42%
  - Biomass: 11%
  - Other: 37%

Legend:
- Fossil Fuel
- Solar
- Biomass
- Hydro
WKEP Supports Existing HHC/DHHL Plans

  - Facilitate the use of diverse renewable energy resources
  - Pursue the leasing of those lands that are identified as suitable for renewable energy projects

- West Kauaʻi Regional Plan (2011): Priority Projects
  - Development of renewable energy projects compatible with agriculture
  - Maintain and rehabilitate Puʻu ʻŌpae reservoir and irrigation system

- Modified Petition for Reservation of Surface Water (2017)
  - 6.9.9 MGD from Kōkeʻe Diversions for use in Waimea, Kauaʻi Hawaiian Home Lands

- Puʻu ʻŌpae Kuleana Homestead Settlement Plan
  - 1,421 acres on mauka Waimea lands
  - HHC accepts final EA in July 2020
Waimea River Mediation Settlement

- Petition filed in July 2013 by Earth Justice on behalf of Pō‘ai Wai Ola and West Kauaʻi Watershed Alliance
  - Complaint filed against ADC and KAA for alleged waste of water on ditch systems
  - Amend interim instream flows

- Parties: Pō‘ai Wai Ola and West Kauaʻi Watershed Alliance/Earth Justice, ADC, KAA, DHHL, and KIUC

- Mediation Settlement approved by Commission on Water Resource Management on April 18, 2017

- Unprecedented resolution of a water dispute in Hawaiʻi
Mediation Settlement Points

- More water for streams and Waimea River
  - Required instream flow releases and modifications to diversions
    - Phase One IIFS
    - Phase Two IIFS

- Installation of monitoring equipment and stream flow data collection

- Water for DHHL lands

- Water for KIUC project

- Timeline with required action items
Integrated Energy Project Proposal

- Renewable energy resource for island of Kaua‘i
  - 24 MW of pumped storage hydro
    - Solar used as power source for pumping
  - Store and release hydro

- Irrigation water delivered through ditch and project pipeline to DHHL lands and ADC/KAA

- Primary project components
  - Kokeʻe ditch repairs and upgrades
  - Rehabilitation of Puʻu Lua, Puʻu ʻŌpae, and Mānā reservoirs
  - Two new sections of buried pipeline
  - Two new powerhouses
Flow of water from Kōkeʻe diversions with volume use at various points on the system

Kōkeʻe Diversions
11 MGD (average)

Puʻu Lua Reservoir

Hawaiʻi DLNR Parks viewpoint/restrooms
.02 MGD

DHHL Mauka Village
.8 MGD
ADC Mauka Ag Tenants
.5 MGD

DHHL Mauka Pastoral Tenants
Up to .5 MGD

Puʻu ʻŌpae Reservoir
Up to 5.63 MGD to DHHL tenants

Mānā Reservoir
Remainder up to 10 MGD to ADC/KAA Tenants
DHHL Benefits

✓ Delivery of DHHL water reservation of 6.9 MGD to DHHL lands

✓ Enables the development of DHHL's Puʻu ‘Ōpae Kuleana Homestead Settlement Plan
  ✓ Water delivery
  ✓ Road improvements and maintenance
  ✓ Electrical power available at Puʻu ‘Ōpae

✓ Water delivery and new storage tank for DHHL pastoral lots

✓ Water delivery to KHHA licensed area
  ✓ KIUC provides pump, power for pump and repairs/replacement to pump

✓ Annual lease payments to DHHL
DHHL Benefits

- Rehabilitation and maintenance of Puʻu Lua Reservoir
  - Provides irrigation storage buffer that will increase water availability to DHHL lands during the dry seasons.

- Repairs/upgrades and maintenance and operation of Kokeʻe ditch
  - The only mechanism providing water to DHHL lands, improved and more reliable water delivery throughout the project life.

- Collaboration with KHHA on seed banking program and reserving wood for designated purpose
  - Koa tree located on dam embankment and must be removed for dam safety requirements
  - Will continue to collaborate with KHHA on wood use/purpose and seed banking

- Increased wildfire protection
Benefits to KIUC Members

• Partnership with DHHL and other agencies to reduce the impact of climate change by eliminating usage of more than 8 million gallons of fossil fuel per year with an estimated annual reduction of 80,000 tons of CO2e.

• Member-owned legacy project that provides long-duration storage, improved reliability and rate stability

• Capable of meeting up to 25% of island power needs

• Generates when solar isn’t available

• Increased number of jobs available during the construction phase
WKEP Project Status

- 2013 – present: ongoing outreach with beneficiaries, beneficiary organizations and the community at large
- August 2017: Beneficiary consultation report accepted by HHC
- May 2018: Right of entry executed between KIUC and DHHL
- June 2020: 60% engineering complete, including repairs and new infrastructure on DHHL land; report shared with DHHL
- July 2020: HHC accepts final EA for Puʻu ‘Ōpae Homestead Settlement
- December 2020
  - KIUC signed development/construction/operation agreement with AES
  - Power Purchase Agreement filed with Hawaiʻi Public Utilities Commission
WKEP Project Status

- March –April 2021: Virtual Community Meeting and Open House held
- June 2021: DHHL offered pre-review of Draft EA and opportunity to comment
- July 2021: KIUC met with beneficiaries in Kekaha at invitation of DHHL
- August 2021: Draft WKEP EA to be published by OEQC
- September 2021: Monthly community outreach meetings to commence in Kekaha and Waimea
Role of AES

- Development/Construction/Operation

- AES is proven partner of KIUC
  - Presence in Hawaii for more than 25 years

- AES is a world leader in renewables; experience with similar projects
  - 6,379 MW of hydro capacity in Central and South America

- Financial risk shifted from cooperative to development partner

- AES can take advantage of federal and state tax credits; maintaining the cost of the project which translates into rate savings for KIUC members
Puʻu Lua Reservoir - Current
Puʻu Lua Reservoir after Rehabilitation
Puʻu ʻŌpae Reservoir - Current
Puʻu ‘Ōpae Reservoir – During Sugar Operation
Mahalo and Questions

KIUC meeting with DHHL/Beneficiaries July 2021