

# **KIUC Community Update**

**West Kauai Business & Professional Association**

**April 2018**



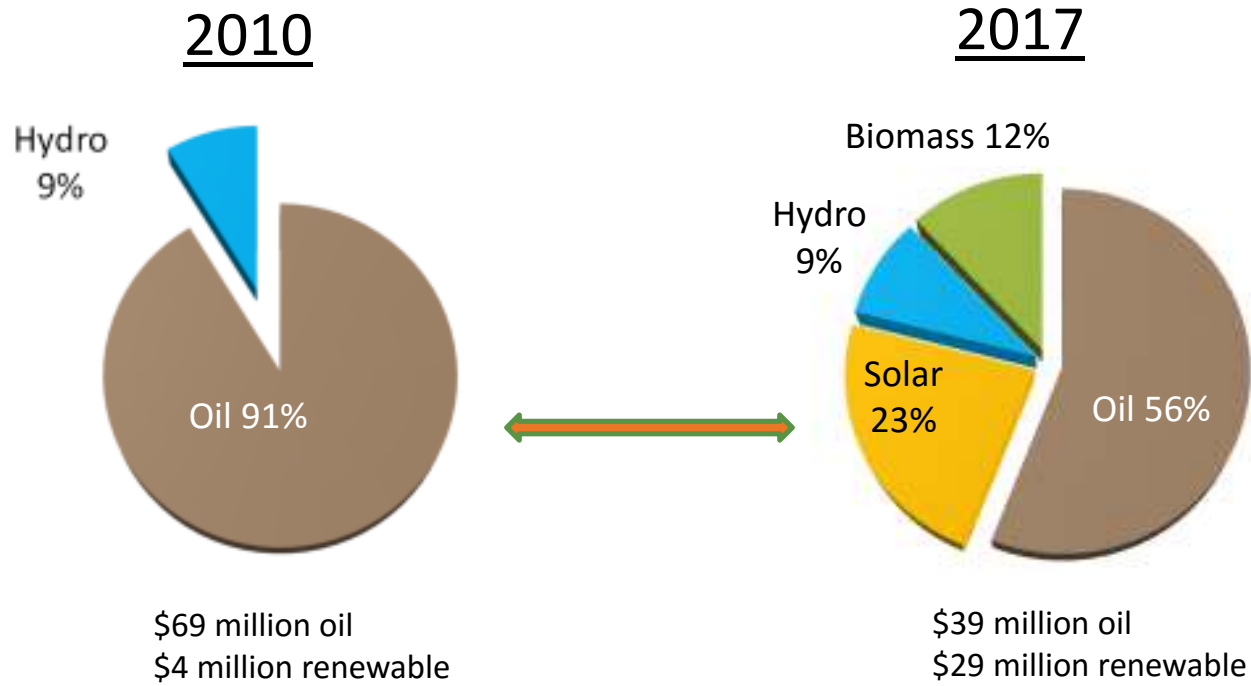
## Renewable Highlights 2016-2017

- Green Energy Biomass, January 2016
- Renewable penetration reaches 97% in 2016
- TESLA Dispatchable PV Project, March 2017
- AES Lawai Dispatchable PV Project
- Renewable Generation at 45%
- KIUC Board sets new renewable target of 70% by 2030

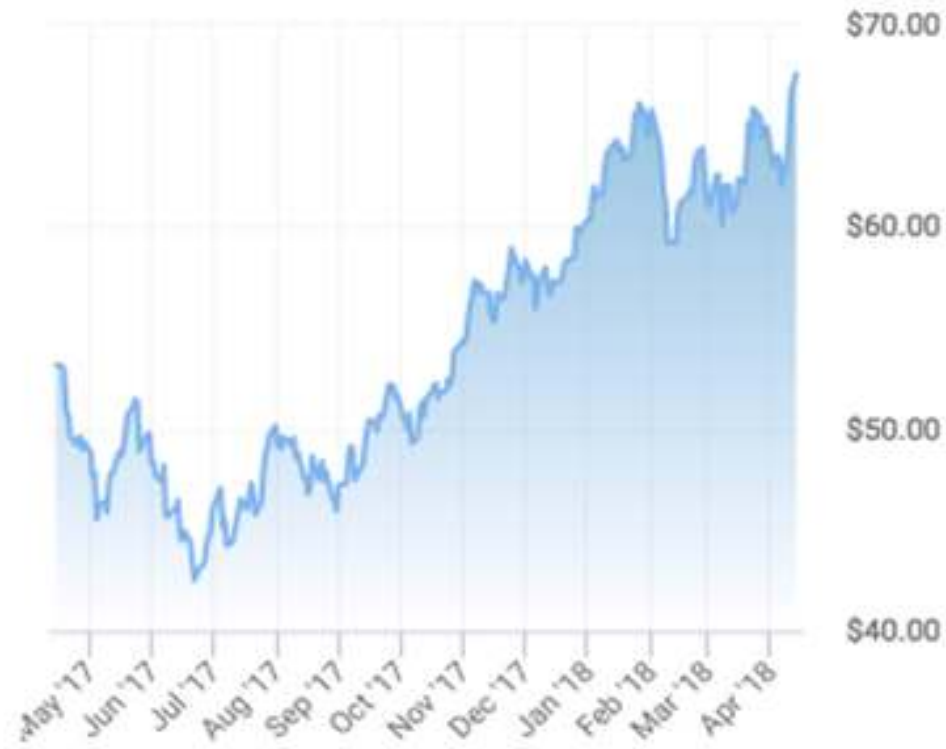
# Lawai 20 MW PV 100 MWh Storage

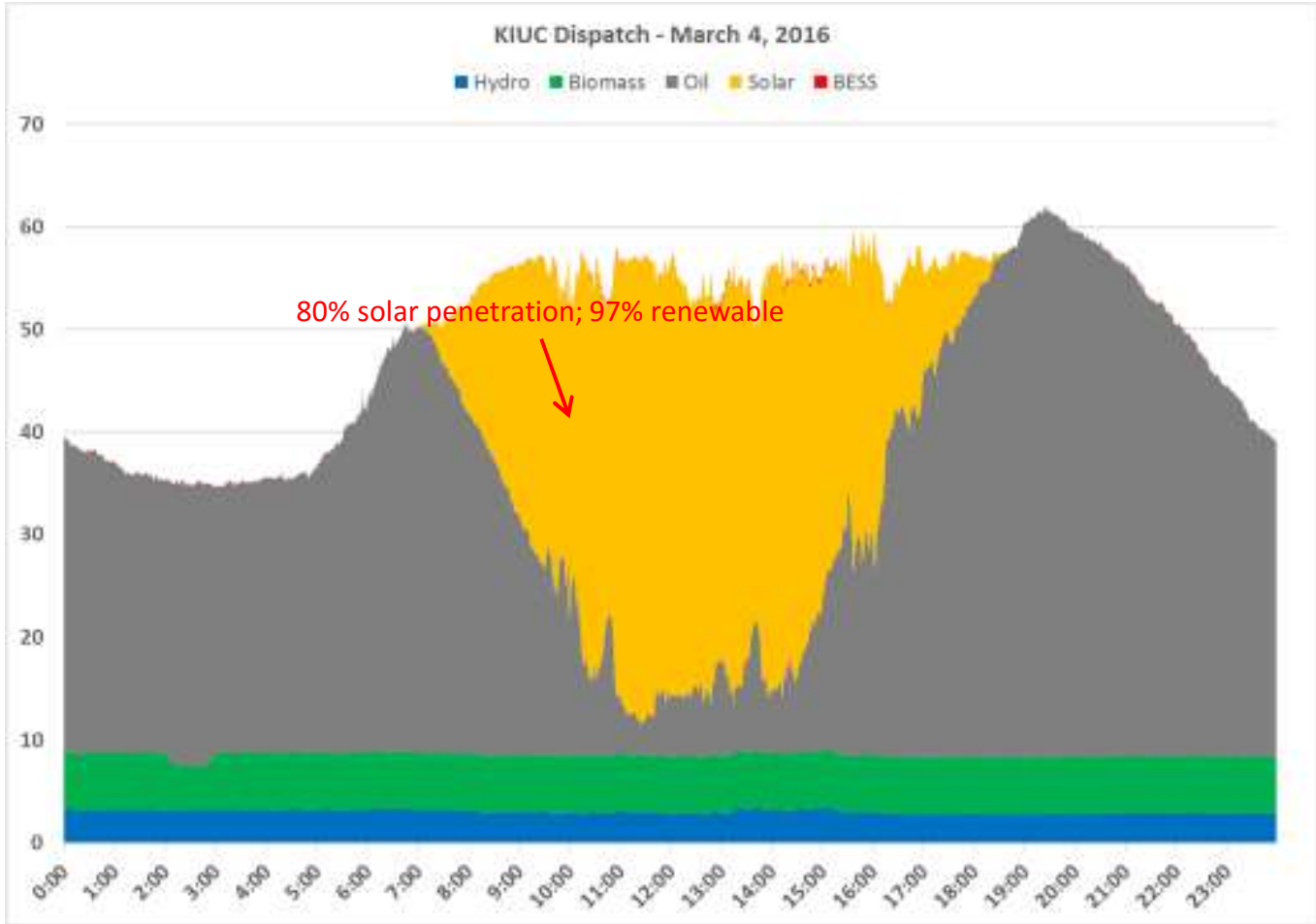


# Kauai's Power Supply

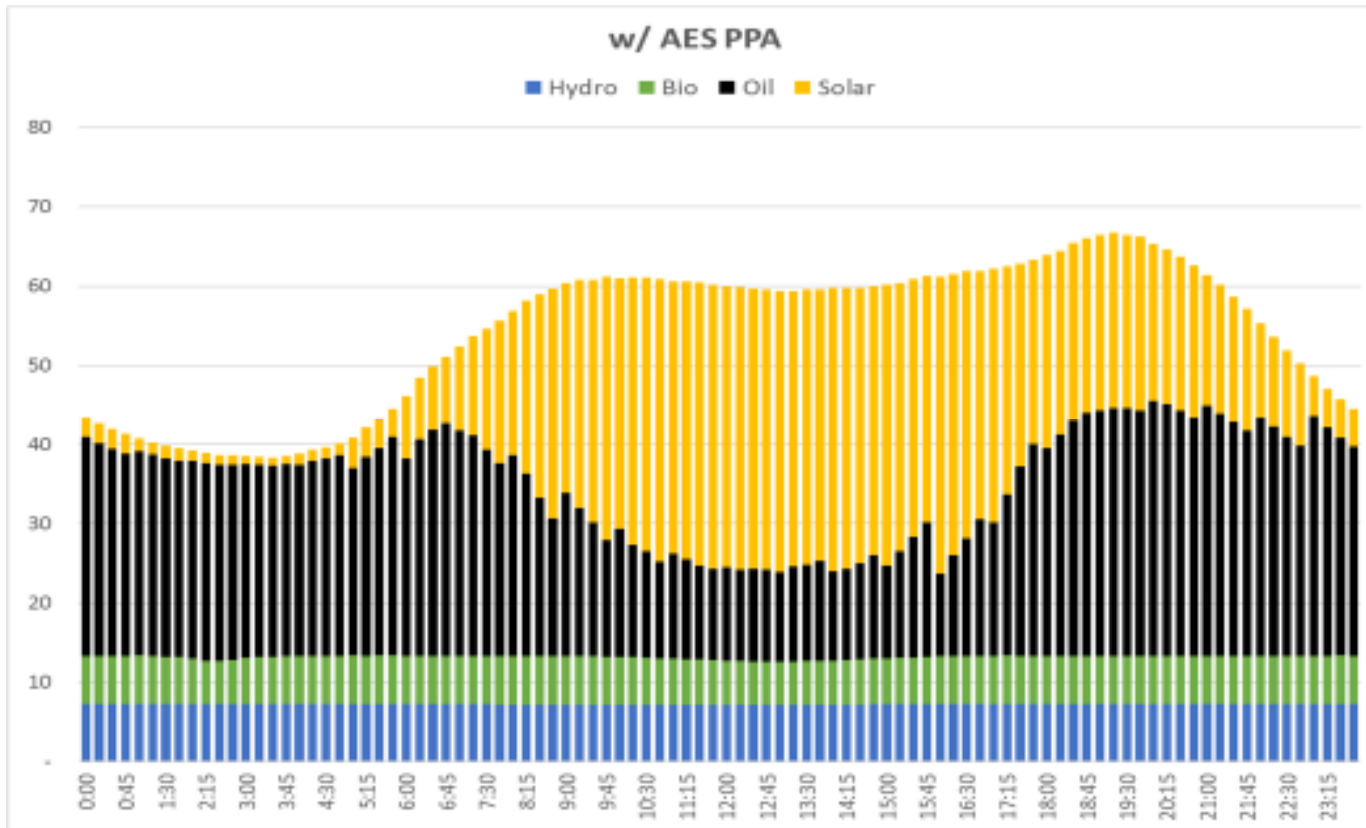


# The Volatility of Oil





# 2019 Dispatch with TESLA and AES



## Future Projects

- AES PMRF Solar plus Storage project
  - 14 MW and 70 MWh Storage
- Gay & Robinson's Olekele Hydro Expansion
- Puu Opae Energy Project
  - 25 MW and up to 800 MWh Storage
- Together these projects will push Kauai towards 85% renewable



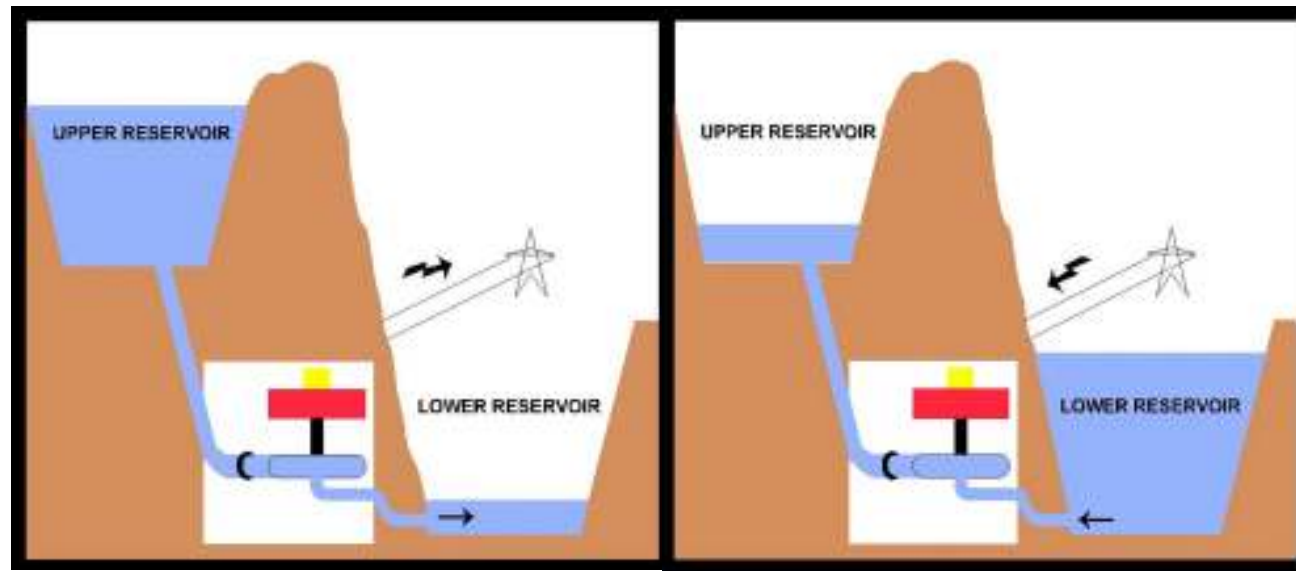
## KIUC's Puu Opae Energy Project



# Puu Opae Project Proposal

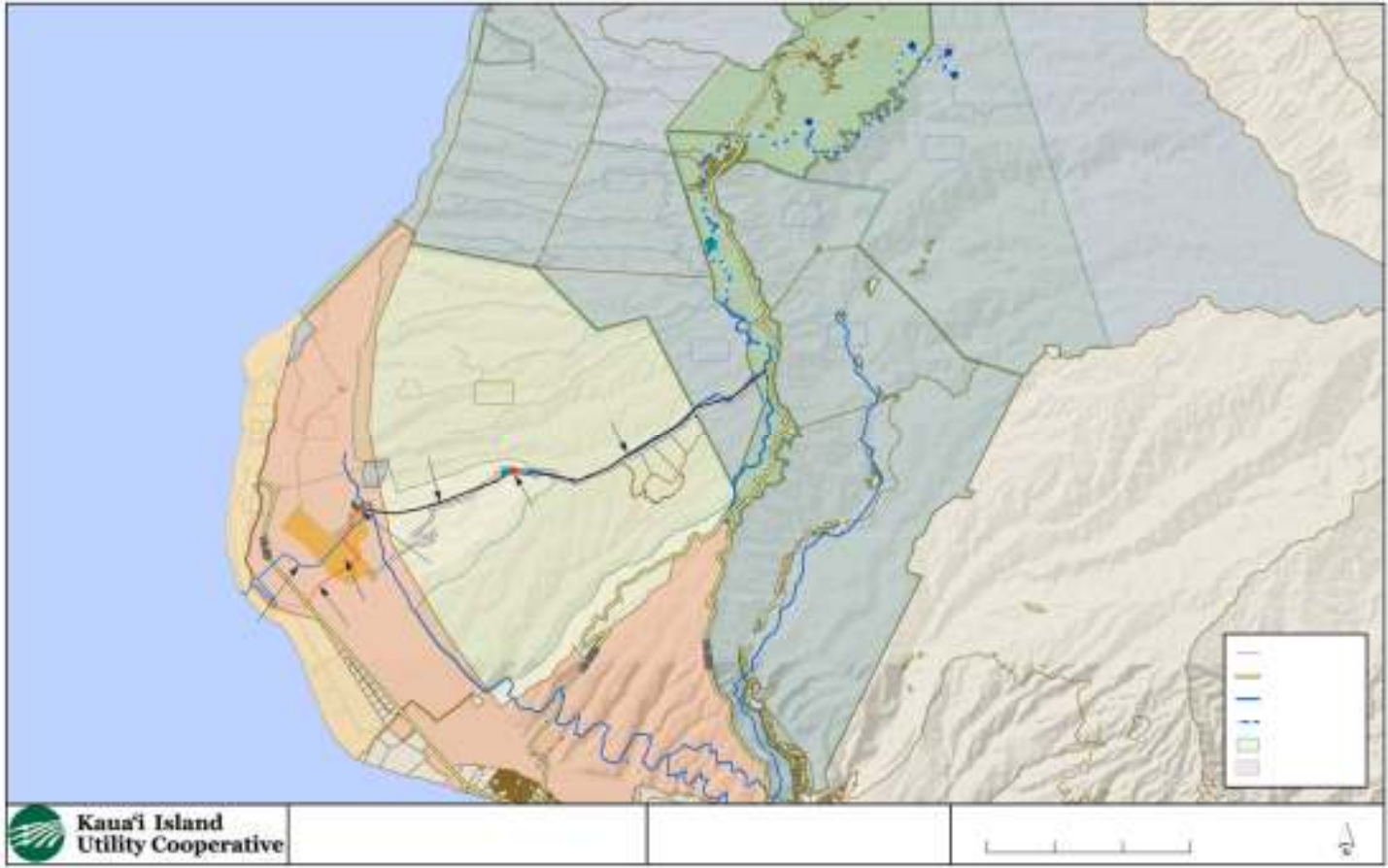
- Renewable energy resource for island of Kauai
  - 25 MW of pumped storage hydro with dedicated solar generation
  - An average daily storage of over 150 MWh
  - Store and release hydro – up to 30,000 MWh annually
- Primary project components
  - Kokee ditch repairs and upgrades
  - Rehabilitation of Puu Lua, Puu Opae, and Mana reservoirs
  - Two new sections of buried pipeline
  - Two new powerhouses
  - New solar capacity
- KIUC operates and maintains the Kokee Ditch system and Puu Lua, Puu Opae, and Mana Reservoirs
- Irrigation water will be delivered through the ditch and project pipeline to DHHL lands and ADC/KAA

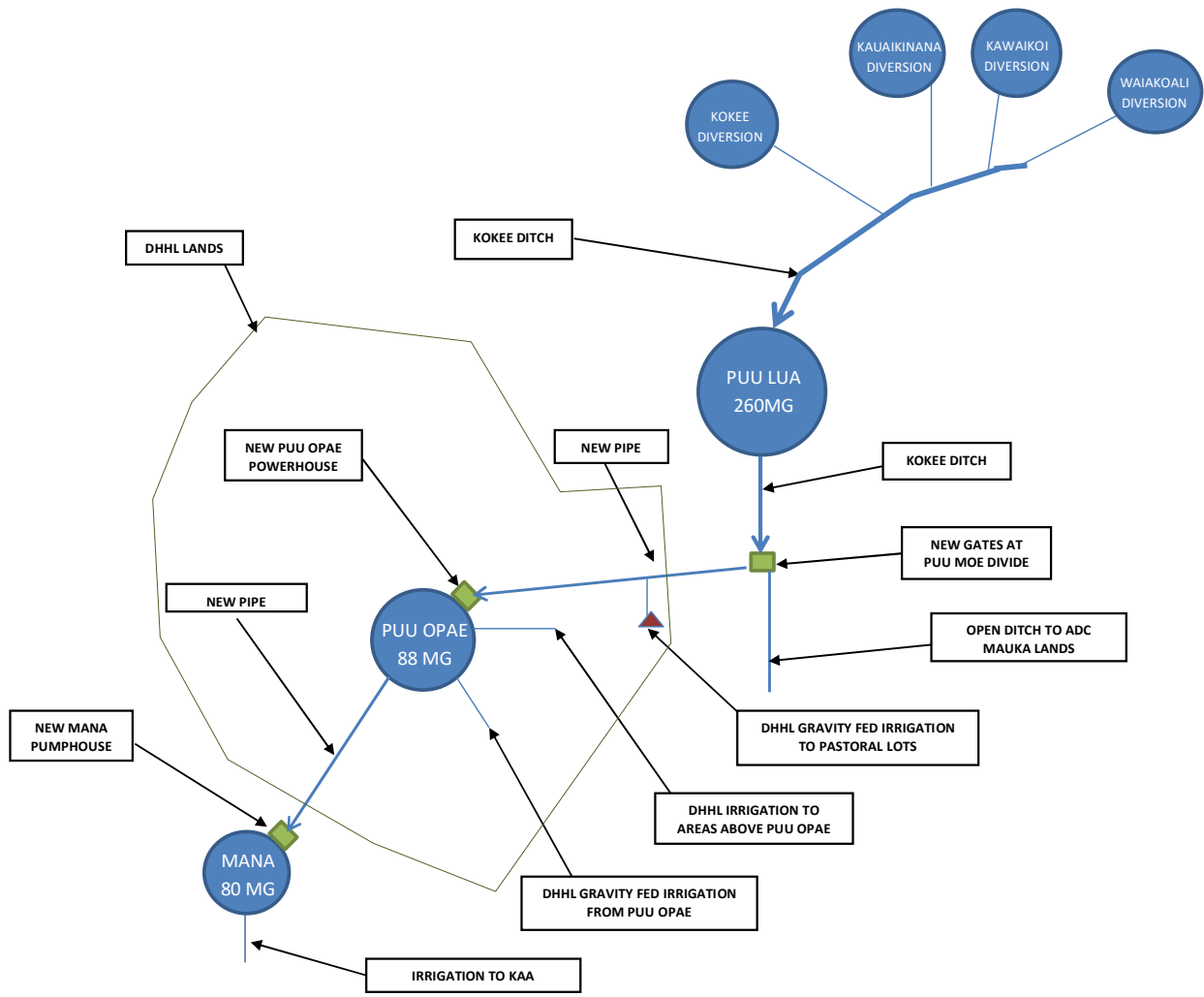
## What is Pumped Storage Hydro?



Generating

Pumping





## Kokee Ditch



# Irrigation Delivery Through Project

- DHHL
  - Reliable and efficient water delivery to DHHL Puu Opae mauka lands
  - Pastoral lots
  - Fields adjacent to Puu Opae Reservoir
- ADC
  - Reliable and efficient water delivery through Mana Reservoir to Mana Plains
  - Mauka lands served through Kokee Ditch
- Back up source for Menehune Ditch

# Puu Opaē Reservoir





# Mana Reservoir



## Community & Agricultural Benefits

- Water is returned to streams
- Rehabilitation and long term maintenance of reservoirs and Kokee ditch system
- Support for agriculture and food sustainability on west side
- Jobs through construction of Project
- Enables DHHL to utilize Puu Opae mauka lands - water, roads and power
- Improved access for fishing at Puu Lua
- Fire suppression support

## KIUC Benefits

- Member-owned legacy project that will store and generate power cost effectively and reliably
- Makes a significant contribution towards 100% renewable energy goal
- Supports more solar generation
- Provides diversity in portfolio
- Increased electrical grid system stability and reliability

## Kawaikoi Stream



## Waimea River Mediation Settlement

- Mediation Settlement approved by Water Commission on April 18, 2017
- More water for streams and Waimea River
  - Required instream flow releases
  - Modifications to diversions
  - Timeline for meeting mediation requirements
- Modification plans for Kokee streams submitted for review
- If approved, modifications may be completed by end of year

# Puu Opae Project Timeline

	2 <sup>nd</sup> Half 2017	2018	2019	2020	2021	2022	2023
Land Agreements	■						
Engineering & Studies	■	■	■				
Studies & Permitting			■	■	■		
Construction & Commissioning						■	■

## Current Steps

- Land agreements reached with ADC and DHHL
- Electing to follow state EIS process
- Initiated early studies
- Issued RFP for 60% engineering
- Consultation with state and federal regulatory agencies

# Mahalo and Questions