

Meeting Recap

West Kaua'i Energy Project Talk Story Tuesday September 14, 2021 – Via Zoom

Attendees: KIUC/AES – 20 attendees; General public – 41 attendees

1. Introductions of KIUC and AES personnel by David Bissell and Rob Cooper
2. Housekeeping announcements
3. Poll results:
 - How familiar are you with WKEP? 58% of attendees were very familiar with the project, 35% somewhat familiar, and 8% unfamiliar with the project
 - Where do you live? 28% west side Kauai residents, 62% Kaua'i other communities, 8% Oahu and 2% elsewhere
 - 80% of attendees are KIUC members
4. Project overview PowerPoint by David Bissell

Question and Answer:

- Will the project bring cost of energy down (i.e., bills)?
 - Yes, but it's a question of how much. Dependent on equivalent cost of oil. We anticipate up to \$157 – \$200M net present value savings over the life of the project based on the current cost of oil.
 - The project is forecasted to lower everyone's bill over time. It's difficult to get a firm number, because it's based on what we would have paid without the project. There are many variables, but our estimate of the average over the life of the project is \$20 per month for the "average" residential customer (500 kwh used per month), or \$240 saved per year.
- Will KIUC provide internships to students?
 - Yes, we could support interns associated with this project. KIUC in the past has hired summer interns.
- Is this project the most economical way to achieve 100% renewable energy?
 - PV is currently our cheapest source of energy. The PV proposed with this project is by far the cheapest PV + Storage available on Kauai at 7 cents per kilowatt hour (kWh).
 - Water-based storage (i.e., reservoirs) is less expensive than lithium ion battery energy storage systems (BESS).
 - Overall the project will cost roughly \$0.15/kWh. Given constraints on daytime solar this is relatively inexpensive.
 - Kaua'i's renewable options are limited to PV and hydro. We will not do another biomass project because it is more expensive than other alternatives. Wind is not viable due to scale and the potential impact on endangered species. There are no geothermal resources available on Kauai.
 - Water is the best long-duration storage option available.
- Will there be jobs for locals?
 - There will be a combination of short-term construction and long-term operations jobs to maintain the system, reservoirs, etc.

- We anticipate there will be 100-200 jobs during construction. It is AES' intent and preference to utilize a qualified local workforce for both short-term construction and long-term operation.
- On average we will see 20-60 jobs at any given time during the construction period.
- How and where will the water be stored? What's the path?
 - Water will be moved between the Mana and Puu Opae reservoirs. Puu Lua reservoir will store water that will go into the system when needed.
- Is there a consideration of sea level rise with the placement of the solar field on the Mana Plain?
 - Sea level rise was taken into consideration. Mounting of the panels can be above projected sea level rise and we don't expect any negative impacts.
- Is there an interim use for water on the farmlands?
 - Flow of water was demonstrated via a flowchart (Attachment A) for the rolling average of 11 million gallons per day (MGD) that will be diverted. It'll be discharged for agriculture use by ADC and DHHL at various points on the system between Kokee and Mana.
 - Agriculture needs will vary by year and at times during the year.
- What impacts will there be to the shoreline at point of water discharge?
 - Water diversion is a key part of the project and the mediated agreement to provide for agriculture. Whatever water is not used for agriculture will be discharged into the storm drain system on the Mana Plain which is an active discharge system. It'll be discharged into the ocean on PMRF land at the Kawaiele pumps. Our project discharge will be approximately 1.75 miles inland into that storm discharge system from the tailrace out of Mana Reservoir.
- What are the "cutting edge technologies" associated with this project that the KCSC interns are learning about?
 - It's a renewable energy project that includes irrigation and many community benefits.
 - From student perspective this is a unique opportunity to learn about the latest in renewable technology, lowering electric bills, and also providing community benefits (e.g., improving water ecosystems, providing irrigation, expanding farming and agriculture)
- What permits are required for this project?
 - There's a table in the Draft EA with the complete list. It's lengthy. Some of the main permits required on the State and Federal level are a Conservation District Use Permit (Office of Conservation and Coastal Lands), a Stream Channel Alteration Permit (Commission on Water Resource Management), a Stream Diversion Works Permit (CWRM), US Army Corps of Engineers permit, 401 Permit (Department of Health), NPDES permit (DOH), State Historic Preservation Division Review and Section 106. Many permits will be required on the County level as well.
- The solar field is expected to be 350 acres. How does that compare with KIUC's other solar projects? How much of the solar energy will go to the grid and how much will go to pumping water uphill?
 - The other largest project is AES Lawai, a 20-megawatt (MW) solar project that was originally 200 acres, and the final design used a little less than that. This project is 35 MW so a larger footprint is required.
 - The final layout is not completed.
 - We have detailed 15-minute models on how the solar input would be applied over a one-year period. We estimate roughly 20% of the energy will go directly to the grid, usually in

- the early morning or late afternoon. Basically, anytime oil or fossil fuel can be displaced we will consider sending solar energy direct to the grid.
- If we are already operating at 100% renewable, which we are most of the time during the day, the solar energy will be used to pump water uphill.
 - Why isn't this project using a closed-loop system?
 - Water delivery for agriculture has always been a key component to the project, which doesn't happen in a closed loop system. The parts we are not recirculating for hydro, will be used to deliver water to agricultural users.
 - WKEP fulfills stream needs, ag needs and hydro needs. The Commission on Water Resources Management determined the interim instream flow standard (IIFS) with all factors considered, and 11MGD was determined to be the appropriate amount.
 - We are delivering the water for agriculture and building the project envisioned by the watershed agreement. This project was never intended to be a closed loop system.
 - How is the water pumped?
 - It'll be pumped from Mana Reservoir (below) to Puu Opaе reservoir (above). Water is not pumped back up to Puu Lua.
 - Will the power station be before or past the base?
 - The project is mauka of PMRF.
 - How does this project compare to the Anahola project and how it benefited the homesteaders?
 - This project is larger than Anahola. For the Anahola project there is an agreement with the Anahola Homestead Association. However, this project is different. Anahola was solar only and did not bring infrastructure improvements. WKEP brings significant benefits in delivering irrigation water, delivery of electricity, etc. to DHHL.
 - Tens of millions of dollars of benefits will be delivered to state agencies which otherwise wouldn't be possible. The benefits include bringing reservoirs/ditches to productive use and road upkeep (4WD accessible), among other things.
 - Isn't it cheaper to do more solar with battery than a hydro project?
 - We would have to significantly increase the size of the solar battery to create the amount of storage we need to cover the overnight period. Doing that with lithium ion BESS systems would be much more expensive than this project. There are other considerations, such as the availability of synchronous generators that come with hydro (as opposed to inverter-based generation), which improves grid stability and reliability.
 - The lifetime of lithium ion batteries versus water-based storage is much less. Lithium ion batteries would have to be replaced in 20-25 years, and this project has a 50-year lifecycle.
 - What will be the height of Puu Lua Reservoir?
 - There will be roughly 200 million gallons of storage, versus 60 million gallons today. We don't have the exact height at this moment. The slopes need to be less steep to meet current dam safety standards. So it'll be much closer to the historical design.
 - How is the water use paid for?
 - KIUC will have a water lease from DLNR and will pay lease rates to that agency for diversion and delivery of that water to end users (ag producers on DHHL and ADC land). Tenants will not be paying for the use of water. The project will pay for the infrastructure to deliver the water for irrigation and hydro production.

- Is rebuilding existing reservoirs cheaper than putting in new reservoirs? How much water will be pumped between Mana and Puu Opae?
 - It's not necessarily cheaper to rehabilitate. However, siting and locating a new reservoir would involve significant costs. We can reuse existing materials on these three reservoirs.
 - To increase the capacity of the reservoirs, they will need to be dug out and rehabilitated. A liner will be installed so the capacity can be maintained.
 - In the Draft EA, the amount of water to be pumped is indicated. Note that we are only pumping for half the day (during solar hours). We estimate we'll be pumping 50 to 60 million gallons on a typical day.
- Will DHHL derive income from the project? It wasn't listed in the Draft Environmental Assessment.
 - DHHL will be receiving rental income. You can find reference to that in the Draft EA on the project website by using the search tool for "lease": www.westkauaienergyproject.com. All landowners will be receiving lease income.
- Why are there delays in implementation of Phase 1 of the mediation agreement (diversion modifications)?
 - There have been delays.
 - Delays are problematic in that they jeopardize available tax credits which AES can take advantage of. It's important that the project can be complete by the end of 2025. Taking advantage of tax credits is critical to benefit KIUC members by reducing rates and creating savings
- Are there direct benefits to communities who bear the projects?
 - This project is no different from other energy projects around the island. There are big solar farms in other communities and there are no direct benefits for "bearing" the projects. We are all in this together and are benefiting the entire island by weaning ourselves off fossil fuel. The nearest residents to the project are three or four miles away. For example, the Lawai project is much closer to residences than WKEP. WKEP project infrastructure is mainly located on the Mana Plain and DHHL lands.
 - Other than the powerhouses, which are small, we will be improving these areas: improving access and improving recreational experiences. Nothing is being "taken away." The solar parcel will be taken out of ADC's inventory, but it was chosen by ADC because it's less desirable ag land. ADC will be compensated. Also, there must be an ag component on that land in addition to the solar.
- Why can't we have solar on our homes to make money back from KIUC?
 - We're already operating at 100% renewable during the day, so we can't purchase any more power. However, you can install a system to take care of your own energy needs during the day. You can add a battery to store and offset your use of energy at night.
- Harold Vidinha, President of Kekaha Hawaiian Homestead Association (KHHA) stated the following:
 - This project directly impacts what they are doing at Puu Opae. We have 200 acres leased from DHHL. Project runs around Puu Opae reservoir.
 - DHHL lease holders at Puu Opae are not looking for monetary compensation: they're looking for help, and KIUC is providing help.
 - I'm there at least once a week and talk frequently with KIUC. Looking at maps are fine, but it's important to see how the project is running. We need water for agriculture and this project will deliver water for us.

- He is happy to show people what is involved – contact Harold if you would like a tour of the Puu Opae area.
- Why is KIUC doing an EA versus and EIS?
 - KIUC is following the environmental statute: Chapter 343. It starts off with doing an environmental assessment. We did extensive studies at an EIS level but did not find any significant impacts. As a result, we've filed an EA and it's out for public comment until September 22. If an impact is missed that wasn't covered by the draft EA, the document could be expanded, modified, or moved to an EIS. We're following the process and will do what is required to satisfy the requirements.
- How can a 65-year lease not have a significant impact on the environment?
 - Hawaii has a very detailed water law and review process. CWRM considers and balances the stream needs with other beneficial uses. Water from the stream in this case will be used for agriculture and energy production. CWRM is the decision-maker. The amount of water to be used can change over time as environmental conditions change.



west kaua'i energy project

Rolling average of water diversion with volume use at various points on the system

