

Briefings and Dialogue:

Statewide Renewable Resources & The Interisland Cable System

- Tuesday, November 17, 2009 at 1pm: Hawaii State Capitol, Room 329

Speakers:

Ted Peck (DBEDT), Joshua Strickler (DBEDT), Robbie Alm (HECO), & Leon Roose (HECO)

Many of the studies currently underway on the interisland cable were completed by November and the specification for the impending request for proposals was complete. However, some specific decisions about the cable project have not been made.

Introduction & Basis for an Interisland Cable - Robbie Alm & Ted Peck

- The interisland cable project is based on two assumptions: (1) that we work with what exists today and (2) we pursue both generation-scale and distributed resources
- We need both rooftop PV and interisland wind to achieve the State's clean energy goals
 - Wind: Hawaii has highest average of productivity of wind farms across country by region, especially in Maui County
 - Solar: It is not possible to acquire enough land for solar farms on Oahu because it requires 40-50 acre plots to produce 4-5 MW
 - Rooftop has potential; If all rooftops were fitted with solar panels, we could produce 1.36 KWh/y

Interisland Cable Implementation - Josh Strickler

- Two EIS bids will be awarded in January 2010, a programmatic EIS for the Interisland Wind project and a project EIS for the Interisland Cable.

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- Ideally, the EIS process will start in February 2010
- 69 permits are required just for the cable - Planning Departments in the City & County of Honolulu and Maui County (Planning Commissions on Lanai and Molokai)
 - The State is working with NOAA as cable will route through a whale sanctuary and with the US Army to work around dumping sites off of Pearl Harbor
- State will own cable - DBEDT will manage permitting, contracted UH-SOEST for an ocean floor survey, will contract cable EIS (with input from other state agencies)
- HECO will operate/maintain - coordinate RFP for cable development HECO & DBEDT will work together to develop a financial plan, develop cable design and procure RFP
 - Landing sites on all islands are preliminary, subject to further detailed study
 - Estimated cost: \$800 million to \$1 billion

Technical Development – Leon Roose

- How do we keep grids functional with large amounts of power on small grids?
- Examined undersea routes in a UH-SOEST survey - gathered data on sea floor topography, sonar analysis, video/pictures of existing cables, species and potential route
 - On shore, landing sites may include Makapuu peninsula, Waimanalo Bay, Pearl Harbor, Kewalo Basin, Honolulu Harbor
- Changes to Energy Management System (EMS)
 - Studies/models of independent parts of generation systems found that significant PV input also in scenarios because wind will not be independent

Question & Answer Session

Conceptual timeframe

Integration work to be completed in the first part of 2010, followed by 18 months of EIS work; looking to begin construction in 2013 if everything runs smoothly. The State and HECO are coordinating with windfarms and NOAA to do work outside of whale season

Cost

The quoted cost (\$800M to \$1B) only includes Molokai/Lanai cable and DC system; it does not include grid upgrade costs for HECO and wind farm costs.

Has the State looked into the total amount of solar power O'ahu could handle, including commercial? And if we have that much solar and wind, why not just rely on O'ahu?

The answer for Hawai'i is not to take anything off the table – there is potential for solar, waste to energy and wind (2 additional wind projects on the North Shore). Each has its risks and capacity factor is a big issue – none of these options is always at maximum capacity. State-owned infrastructure is the best way to go – bottom line, it's paid for by rate/tax payers and we'll work to reduce that amount as much as possible -

Have you considered integrating a large solar thermal into the system?

Solar thermal is part of the whole portfolio - it has a storage component, but again, we are not betting on any single resource. On Moloka'i, there is potential for solar thermal co-development with wind.

Have there been any advancements in DC cables that provides ancillary services that can help the grid?

Yes, including smoothing services and some attributes like voltage control.

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[Speakers suggestion] Add other sources to reduce risk factor because basing a cable on one source (geothermal) wasn't a good idea.

[Response] Think of this as a cable that transforms the grid and the rest comes later – this is the first two projects helping to finance the cable using the wind resource.

There is willingness for private ownership. How much federal money is allocated now?

In terms of technical and feasibility work, ARRA funds EIS and funding has come from NREL and DOD.

Have you involved cable companies yet?

There are only 2 cable companies – we are going to do a RFI to get feedback from the industry for technical project. We needed to do preliminary information gathering to give them the right cost estimate.

What does it mean that the state is going to own it? Is it on a normal payment schedule?

State owns the title for operations and maintenance contract and recover costs for it via ratepayer, with some costs paid by federal/state taxpayer. This is not intended to be a general funds project – may be possible for PUC to have authority to cover costs.

Who is the current general decision making group?

Executive Committee: Ted Peck, Ted Liu, Bill Parks, PUC, CA; decision-making will continue through PUC

Would this be the first step in separating generation from transmission?

We are past the first step - utilities are taking on new generation via PPAs.

Are we going to have to go to the Legislature to get the money?

Decision rights around the cable are diffuse. The Legislature is the decision rights regarding the cable. HEPF has decision rights - if HEPF is totally opposed to this,

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then it should be an issue. The Congressional delegation has rights, along with permit issuers and the community.

Up front, this project will be developer-funded – already met with financiers. Any financing with taxpayer money is the decision of the Legislature, while financing with rate payer money is up to the PUC.