Community Meeting
Koloa
Date: May 5, 2009

Attendees

Community:
Andy DeGeus, Full Circle Energy
Arius Hopman
Artha DeFries
Bill Cowern
Chris White
George Costa, Office of Economic Development, County of Kauai
Heather DeGeus
Ken Taylor
Lisa Makanecke, Oz Architects, Inc.
Lynne Torres
Mark Travis
Mary Stone
Scott Sato, Kukuiula Development Co.
Sean Perkins, Kukuiula Development Co.
Stephan Stanzak
Thad Bond, Kukuiula Development Co.
Wallace Roghair, Poipu Kai Water Reclamation Commission

SENTECH Hawai`i Team Members:
Diane Rosenkranz, *Kauai Planning & Action Alliance*
Diane Zachary, *Kauai Planning & Action Alliance*
Jill Sims, *SENTECH Hawai`i, LLC*
Rayne Ragush, *Kauai Planning & Action Alliance*

Notes

Energy Choices

- Solar Troughs take lots of maintenance vs. photovoltaic, which requires less maintenance.

Process

- What is the primary motivation for why the County is doing this Energy plan?

Goals/Vision

- Nothing about algae in the potential renewable energy graph. It could be an important energy source and could contribute to final mix of sources.
- In regards to Waste to Energy (WTE) technology, please include plasma torch technology as a source of meeting Kauai's energy needs. Full Circle Energy would be able to source all of Kauai's energy needs, not including restrictions.
- It says the plan's goal is to supply 100% sustainable local energy- what is 100% local sustainability compared to HCEI 70%?
- What does the HCEI 30% energy efficiency mean? How do you accurately measure the goal?

- Are you saying that one of the goals is to have no more personal cars? By 2030 there will be much more availability of cars that aren't dependent on petrol.

Supply

- Does the plan address visual impacts of these various technologies? For instance, transmission lines? Is it stated on website who the stakeholders are? (Jill – yes, in the meeting notes of each session.)
- If we implemented vertical access windmills on Kauai, this type of technology could kill three birds with one stone: Visual impacts, energy efficiency, and avoidance of harming birds.
- I would like the plan to consider researching some of the projects on the Big Island such as OTEC (Ocean Technology Energy Conversion). It is a biomass technology hidden secret. They are doing algae production – 90 acres of spirulina, pumping seawater up from surface of water to land. Kauai should look at OTEC; we have deep oceans here in Kauai. Water from 2000 ft down is less saline and very cold. The by-product is good. We can grow strawberries and other food because the water is very nutrient dense, good for fish, etc. Spirulina is a by-product of OTEC. We buy this spirulina from the big island. We don't have to import if we can grow this here on island. It is a wonderful soil supplement. Cyanotech is the company on the big island; they have been in business for over 20 years.
- We currently have problems with providing renewable energy to the island. What do you do when the baseload doesn't shut off and we can't use it?
- The reality is that to develop the increased baseload activity requires community to buy electric cars to build any kind of load. This needs to be looked at. I don't see that the government is going to subsidize us buying $40,000 cars.
- For mass transit, we could have hybrid buses, increase the quantity of buses and trips, routes, etc. and add more feeder systems.
- Please add to peak load graph – a lot of it is focused on cooling. We import European houses into the tropics which is very inefficient. Could look into Night Sky cooling systems. Author of Passive Solar energy book is Ed Masuria. Aspen Institute is another resource.
- By-products of plasma arc tech are hydrogen and syngas.
- Reduce energy required to cool buildings by landscaping technologies, such as shade plants, etc. If you don't make codes, people won't do it.
- Propane and LNG - are they considered in the plan? There is already propane being used for energy uses, are we looking at replacing those. Can we look at what is used currently and the uses for it?
- We need to maintain logic for placement of distributed vs. concentrated sites for energy sources. Makes sense to build solar in Kekaha because that's where sun is. Instead of spreading out resources throughout the island, concentrate and confine them in places where it makes sense. It doesn't make sense to put a mass solar project in Lawai or Kilauea, for example.
- Propane has lower BTU value than other fuels, such as diesel. It is expensive here. Diesel is half the cost of propane, so it always shocked me that we don't use diesel instead.

- Haven't heard anything about methane generation. University of Washington has a dairy farm methane generation system; overcame odors with sulfur scrubber; methane ran directly to the factory. We have odors coming off of sewer plant near Lydgate.
- Cal Poly did same thing with a dairy farm and it was very successful.
- China and India are good resources for methane research.
- For better cooling technology, paint roof white and thermal mass inside house - any kind of mass that absorbs heat or cold. Fly wheel effect for temperature. Water walls are an excellent example.
- Comment on overall plan: hundreds of groups happening like this nationwide. The more we can delay putting something together concrete in the plan, the better chance for success to see what comes out of other similar groups.
- A good resource for volunteers and technical assistance is Arlington, Virginia.
- Vertical technology for algae. Maui Electric has some technology for algae vertical sheets to maximize effectiveness.

KIUC Data/Smart Grid

- What is grid efficiency?
- My business is putting in hydroelectric plant using low high voltage line. Lowest in Kauai. The higher the voltage the smaller the line. There are losses in #2 wire in 8,000 ft. less than .3%. Not getting significant losses on main lines that run 10-15 miles.
- Department of Energy has lots of money to give to projects. KIUC should look into funds from them to do some projects.
- Will the plan encourage home sized systems, and offer buy back programs for individuals?

End Use

- Don't tourist rental vehicles have a big impact the numbers of vehicles on the road?
- Number of drivers is the issue, not the number of vehicles. How do these stats make sense? I use a big diesel truck for some types of trips and then save and use less gas by driving other smaller diesel vehicle.
- They are selling commercial bio-diesel here on Kauai.
- Is ethanol production a consideration for an energy source here on island?
- On Maui they have restaurants that recycle cooking oil and use that as another energy source. Will the plan address this?
- Where does the government show where they are in the graph in terms of energy usage?
- Are they included in industrial/commercial? Government is largest user of electricity.
- It's absurd that government offices are so cold in temperature.
- The County did conduct an energy study and we are tasked to look at our use. This is one of the reasons why we are doing this plan.
- Benefits coming forth to the community for conserving energy over previous years were reflected in the increase in rates; we get to pay more because we conserve. Doesn't make sense but that is what is happening. We hear a lot of talk

about solar on roof tops at County buildings, but biggest consumer of energy is Water Department, then Sanitary (Wastewater) Department. We haven't seen discussion of converting these districts over to alternative energy. Doesn't make sense to put solar on County roof tops when this only addresses a small percentage of total County use, like 10-15%.

- 17 sewer plants in Poipu area. There is opportunity here.
- Suggestion: Pump water during off peak hours and have larger storage tanks.
- Water and sewer facilities do use most of County's energy. The County is seeking stimulus funds for PV systems to implement in some of our new projects. $267,000 for new Kealia fire station and the Waimea wastewater treatment.
- Biggest inhibitor of the grid is storage and instability of grid- is that a component that will be analyzed in the plan?
- Is plan going to address KIUC rate structure? How can they change rate to reward people rather than penalize them by not letting them sell back into the system? KIUC can't maintain existing infrastructure; are they talking about decoupling?
- There is a minimum charge for being on KIUC system. They plan to re-open net metering and/or tariff feed in. Depends on what the PUC decides.

Stakeholder Meetings

- Does plan include how much energy we use and pay to import goods to island? The fastest way to achieve energy savings is to produce goods here to become more self-sufficient so we don't have to continue to import. We ship food here rather grow here. All these things can be done here. They require embedded energy to do it but also extra energy for shipping.
- Are we looking at aspect of consuming and growing locally rather than importing and the impact that has on energy sustainability? (Jill – that would be great to look at but beyond the energy plan scope of work.)
- Is there any way to expand the plan to research the average cost of energy for every item we buy? The money we spend on shipping goods to island is related to energy because we are paying for the cost of shipping, which is oil. Energy really does relate to island dollars we spend because we pay for shipping stuff over here. We are so dependent on tourist dollars. If we grow gardens we don't have to pay for energy to ship food here.
- We can do without energy but not without food, water, clean air and housing. Basics are what we really need, energy is a luxury.
- By product of syngas can be used for aviation fuel.
- Missing the boat by ignoring the oil crisis, gas prices are low now, but the prices will go up. Can't afford to ship food here, need to grow here. Part of plan would have to look at the fact that an increase in oil prices is bound to happen. Those young people on the island- what legacy are we going to leave them? We're not addressing the problem adequately to give them a future.
- We ignore what happened in the 70's with the oil crisis and we cannot afford to ignore the crisis now- we have to address the fact that oil is running out and prices will increase.

- These Ag/food issues are related to energy. Solve two problems at the same time. Fact about food delivered to Kauai: it takes 10 calories to deliver for every calorie we eat. Sustainability is about local conservation and production.
- Water department should re- allow such simple technologies as water catchment and graywater recycling. These technologies reduce water consumption by 50% which will reduce energy consumption. Are you working directly with Water Department?
- Water department uses pressure reducing valves rather than use hydro electric – they lose energy with valves and then use more energy to pump water somewhere else. It's a lose-lose situation.
- Resource: Magazine- OnEarth, Spring 2009. onearth.org, pg. 26, "Selling the Sun" article by Michael Behar