

## Environmental and Sustainability Stakeholder Meeting

Date: April 27, 2009

### Attendees

#### Stakeholders:

Adam Griesemer, *DLNR, Department of Fish and Wildlife*  
Andrea Brower, *Malama Kauai*  
Ben Sullivan, *Kauai Island Utility (KIUC) Cooperative Board of Directors*  
Brad Parsons, *Apollo Kauai*  
Carey Koide, *Kauai Island Utility Cooperative (KIUC)*  
Carl Berg, *watershed biologist*  
David Ward, *Apollo Kauai*  
Elli Ward, *Apollo Kauai*  
George Costa, *County of Kauai Office of Economic Development*  
Howard Greene, *Gay and Robinson*  
Jack Benzie, *Pacific Missile Range Facility*  
JoAnn Yukimura, *EPAC*  
Jon Robinson, *Intentergy*  
Judy Lundborg, *Apollo Kauai*  
Ken Taylor  
Keone Kealoha, *Malama Kauai*  
Kipukai Kualii, *Kuali`i Ohana*  
Laurel Brier, *Apollo Kauai*  
Neil Clendeninn, *Apollo Kauai*  
Pam Burrell, *Apollo Kauai*  
Rich Hoepfner, *Apollo Kauai*  
Rob Abrew  
Tek Nickerson, *SHARE and Apollo Kauai*  
Walt Barnes, *EPAC*

#### SENTECH Hawai`i Team Members:

Diane Zachary, *Kauai Planning & Action Alliance*  
Douglas Hinrichs, *SENTECH Hawai`i, LLC*  
Marguerite Harden, *SENTECH Hawai`i, LLC*  
Rayne Regush, *Kauai Planning & Action Alliance*

### Notes

#### Baseline Data

- All KIUC generating plants are ready and permitted for biodiesel; KIUC is also about to release a Request for Proposals for Advanced Metering Infrastructure (AMI) to move toward a Smart Grid.
- Smart Grids have to be customized to fit the utility/infrastructure.
- Smart Grids have the ability to improve the potable water system with load shifting, while also offering a venue for vehicle-to-grid technologies.

#### The Definition of Sustainability

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- We put a man on the moon in 10 years. Why can't we organize ourselves to eliminate carbon in 10 years?
- Use words such as interconnected, holistic, and symbiotic rather than the term "balance." Balance suggests that the environment and economy are at odds.
- The Bruntland Commission's definition of sustainability was more accepted, while the Natural Step definition was more anti-business and anti-industry.
- The Hawaii 2020 Plan had "nice sounding things" but was not on point toward sustainability.
- The definitions of sustainability are too broad. The definition should be more narrowly focused on energy sustainability. A more relative term to define would be "renewable."
- Sustainability should be discussed in terms of carrying capacity, quality of life, and resilience. Sustainability is about continuing to use our resources.

### Vision

- The phrase about integrating the waste stream into renewable energy production should be deleted; MSW is controversial. Plastic is not a renewable energy.
- Regarding the first statement in the vision, "A garden island whose population, size..." How do you shape population unless you put restrictions on how many people come to Kauai? You have to consider for growth and de-growth. If you try to shape the population, the person with the most money is going to win.
- The vision is sprinkled with things that we cannot control, and distracts from our real issues. You miss the largest non-sustainable thing in Kauai right now-- solid waste management, the carbon cycle of products, and how that effect green house gas emissions.
- The vision needs to better reflect transportation goals.
- The vision should focus more on topic of reducing our energy use and powering down.
- The vision needs to better portray the need for energy production and distribution to be locally owned; we are not replacing foreign oil with foreign alternative energy.
- The vision should include the terms/phrases: multi-node, resilient, and more distributed rather than centralized.
- Does all renewable energy/energy efficiency on the island have to be locally financed?
  - No, but promotion of smaller, dispersed ownership rather than one large energy plant is necessary.
  - There are ways to create local investment systems.
  - Local resources should be valued.
  - There is a premium to be paid for the capital. We all can acknowledge that local resources are better. It's not realistic to say that all \$5 million has to come from Kauai, but to assign a value for local ownership is important.
  - In Denmark there is a great example of local run renewable energy. Regarding financing, if you can keep the dollars local, there is a multiplier

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effect. For the Hawaii Clean Energy Initiative (HCEI), we are looking at local and international strategies for financing.

- Economic stimulus money should go directly to residents for solar energy generation. Have the local community invest in renewables while building the local economy.
- Vision was an ideal on a broad based scale. Goals will be specific.

### Goals

- The 2030 goal is too far off for the County to be held accountable. The Statement of Work for KESP should be changed to 2010 or 2015. It's easy to paint a picture far down the road and not be accountable. If we change those numbers we will shorten the list and be more realistic and accountable to ourselves. NEED BENCHMARKS.
  - Where did the 2030 number come from? HCEI graphs out what hurdles need to be met. The vision should be that detailed - map out milestones.
  - We will have a phased approach; milestones. We will look in 5 year chunks (for example). We will point fingers at who needs to do what in the plan. Will be specific.
  - Sympathetic to the concern that the 2030 goal is too far away. Very clear in RFP to show that we want year by year (or smaller or bigger windows) roadmaps of what we have to do.
- Correction to the power point: the KIUC goal is 50% renewable energy by 2023.
- Does not think that 50% is aggressive enough. Let's reach for 100%.
- Incorporate a scenario analysis. This will be based on the price of oil, so you need to show the different alternatives of what could happen.
- At a KIUC meeting they dropped the goal from 2020 down to 2015. (Ben: those are target dates that depended on hydro and biomass). Also, if the price of diesel goes up, how are we going to afford the other 50% of energy?
- Biodiesel is tied to diesel. If oil goes up, the cost of biodiesel will go up with it. Biodiesel is a stopgap measure.
- There is more than the price of oil that factors in. Global warming compels us to get off oil. We can't base all decisions on the dollar.
- Where do the benefits accrue? To the society or the project developers?
- KIUC goals are independent on the price of diesel. As a co-op, we are community owned. May choose to have external ownership for a few years, but the utility's goal is to own their own production facilities.
- The KIUC 2023 goal has assumptions. We are trying to do 50% RE with a 14% growth rate on the island. If we don't assume that growth rate it could be 75%. KIUC's goal is incomplete because it doesn't talk about costs, e.g. cost of land. KIUC's goal is independent of the price, but if oil prices go up, more RE projects will come on line. Thomas Friedman's *Hot Flat and Crowded* suggests that we need a price floor for oil.
  - Who has the right to set a price floor?
  - The county can set a price floor though a gas tax.

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- The money side is important. On Kauai, the land is so expensive, which only allows rich people from California to live here. Everything we're talking about makes energy more expensive. We need to look at the broader issues and beyond KIUC. If we're not careful we will make energy much more expensive so that fewer of "us" can live here. That is central to the problem. We need to figure out who will be paying for it.
- Renewable energy will cost more upfront, but there will be payback over the long-term.
- We do need two different goals for electricity and transportation.
- We need to prioritize electricity services to the community. Make a distinction between using energy for pumping water and using energy for "playing Nintendo."
- We all like 100% RE within 10-15 years. (About half raised their hands)
- Do we have to put a cap at 100%? Can we export energy such as through a wind farm?
  - (Doug: with current technologies we cannot cable the energy. Could export bioenergy).

### Costs/Benefits

- Ocean/Wave is left out of the picture. Is it viable? Two islands are doing it.
  - (Doug: Ocean Thermal Energy Conversion—OTEC-- is more emerging, and not currently being considered by KIUC).
  - Why can't we have a subsidized project if it's not cost effective?
  - PMRF applied for a grant through DOE for an OTEC project
- KIUC has taken the role of not going down the experimental path and invest stakeholder money on projects that are not proven. KIUC is going to wait for renewable energy to be more proven, though these projects will be monitored.
- Where does output potential come from in the power point? (Doug added up the numbers of proposed KIUC projects)
- There was an extensive Apollo Kauai paper written on waste to energy; there may not be enough trash to justify a system.
  - (Doug: Gasifier from many other sources besides waste-- can be firmed up with biomass).
  - We need to recycle the waste.
- Likes slide #49. Need to look at these energy projects holistically. Need to insist on a discussion of the environmental costs from every technology, rather than getting stuck on one environmental cost that halts a renewable energy project.
- Conservation has to be looked at first; it's missing from slide #49.
- Clarify landfill gas; is there a negative effect?
  - (Doug: there is some pollution from the combustion. We need to investigate further)
- How much land are we talking about for Solar CSP on slide #49?
  - (Doug: There are two CSP projects that would be 40 MW, or about 200 acres. Current peak is 77 MW)
  - There is plenty of land, CSP would be something great to look at.

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- Each project is going to be looked at differently based on land, developers, utility, etc.
- Waste-to-energy reports that show waste-to-energy as a recommendation. They suggest spending \$365,000 to do more analysis.
- Not sure what the purpose of slide 49 is. The environmental costs are too simplistic and will not prioritize the energy options. Costs are an issue. No one in this room is going to resolve this issue. Need a conflict-resolution format regarding permitting, siting, selected options, etc.
- At this phase of the project, Doug intends to be an objective listener only.

### **Wind Energy**

- Use the Big Island lighting system that does not attract the local endangered birds.
- There should be more data on the light issue. Other counties have had the opportunity to place zoning ordinances. Kauai hasn't moved to do that.
- Would have to mitigate number of bird strikes/takes.
- There are suitable places right offshore to site large turbines. Birds do not fly at sea level, so they would avoid the turbines because they fly higher. Turbines could be placed on the south shore. Can also put the turbines higher than 2000 feet where the birds do not fly.
- There are other maps on the DBEDT site that give better detail than that on the wind power vs. seabird movement rates. The shelf of Pt. Allen goes approximately 1 mile.

### **Biomass**

- Water for fuel is not going to be available. We need the water for human consumption. Planners should look closer at the projections of climate change and how it is going to affect water. Kauai is no longer the second rainiest spot in the world. Last year was 297 inches of rain/year. From 68 to 2008 we have cut the rain by 20%. The second rainiest spot on earth is a hyperbole.
- The numbers explained by one participant is correct. If we go toward desalination it is going to require lots of energy. Also, one participant seconds the idea that the wettest spot on earth is a very small part.
- Growing the biomass on the island is prohibitive due to the price of land. If we want sustainability we cannot be importing any fuel (oil or biofuels).
- Most biomass is trees. Trees develop watersheds.
- We have had severe drought warnings in Kauai and Maui.

### **Other Comments:**

- Will corrections be made? The presentations should be scrubbed so that for the community does not have misinformation.
  - (Doug: we will post the presentations “as is” in an effort to be completely transparent)
- For the public meetings, try to fill in the blanks and present the best possible information.

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- Why aren't we putting nuclear energy on the list? Show the plus and minuses of this source for comparison.
- Nuclear is illegal.
- The idea is that the energy we are looking at is renewable and sustainable and nuclear is not sustainable.
- Re: Slide 46. Consider presenting this information in the clearest way for community meetings. Call them all greenhouse gases. Compare these generation types with renewable energy. The presentation of the data is hard to read. The information is intimidating. Have a slide that compares solar, PV, etc. and looks at fiscal costs for each RE. (Doug: this is preliminary analysis to begin an exchange). Need to "dumb down" (or make more accessible) the presentation for public meetings.
- What point did you make tonight that we should take away? (Doug: Not one point... there are many points).
- Would like to see how rates will change by technology. (Doug: this has been done on a national level.) This is the number one question that people will have. Explain that our rates will go up from renewable energy.
- How will EE/DSM be addressed?
- Would be easy to take the KIUC presentation that was given at the rate meeting to sum it up.
- We can talk about big energy issues on the island, but this is a county government study, and will this plan be more weighted toward things that the county can do?
- We are at the end of cheap oil. How will this be addressed? (Doug: DOE can't predict the amount of oil and the cost). If we have reached peak oil, what are we going to do to revive the economic activities? If this project doesn't address those things, then it's a waste of time to go through the motions.

### **Hydro Power**

- Hydro power on slide 57. Any hydropower system will result in ecosystem destruction, not just "fish migration." (delete "fish migration" and talk more about all life within ecosystem)
- Hydropower benefits should be considered against the rates of precipitation going down.
- Important concept: the low-hanging fruit is only a small amount of the energy that we need. Need to convey that in the community meetings.
- Slide 57 (hydropower): Water is dropping off, but we are blessed on this island with being a wet spot (not the wettest, but still significant). There is opportunity on the west side of Kauai. Biomass, land, and workers are all available. Come October Gay and Robinson is saying goodbye to its biomass plant. Policy and political will needs to change the set the price of oil. Island has real problems if we can't make a simple thing work like biomass.
- Water needs to go back to the streams. Hanalei River is running at 100 year low levels now. Water availability varies by region.
- There are a tunnel boring machines for hydro and pumped hydro. Boring hasn't been done on Kauai.

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- Should have a list of assumptions on the flip chart. (Declining water issues, water prices, oil prices, not going to look too deeply at things that don't work). Also, two things that weren't discussed are variable and intermittent energy sources and how we firm them up. Haven't talked about efficiency stuff, which needs to be more front and center. Need to do land use impact analysis for the Plan. Don't know what the CO<sub>2</sub> impact is of fallowing land and putting land back in use. Need to make bright guesses on what the impacts will be of changing land to biomass (could be a net loss of CO<sub>2</sub>).
- Each individual technology could have its own stakeholder meeting.
- We did consider how to break down the stakeholder meetings and how to define "stakeholder"