

Demand Side Management Stakeholder Meeting

Date: April 6, 2009

Attendees

Stakeholders:

Al Hoffman, *Marriott's Waiohai Beach Club*

Carol Shon, *Department of Business, Economic Development, & Tourism (DBEDT)*

Ed Nakaya, *Kauai Island Utility Cooperative (KIUC)*

Glen Takenouchi, *The Gas Co.*

Glenn Sato, *County of Kauai Office of Economic Development*

Gregg Fujikawa, *County of Kauai Department of Water*

Helen Cox, *Kauai Community College*

Paul Daniels, *Kauai Island Utility Cooperative (KIUC)*

Ray Mierta, *Kauai Island Utility Cooperative (KIUC)*

Robert Keller, *Sears*

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

Vision

- Mention social equity; not putting the burden on any one community
- Education: include to promote energy efficiency, green jobs and workforce development, etc. to maintain the system rather than taking in outsiders
- Being open, supportive, and willing to adopt new technologies (add onto "selecting technical options")
- Energy Efficiency should be before renewable energy. "As a first step, maximize energy efficiency"
- Self reliance may be too optimistic of a goal, but may be worth noting
- Should the vision address the cost of energy? Defining affordable and cost-effective. (This may be more on the strategies level)
- As an island we need to make do with local, non-grid connected supplies, despite expected growth in demands. There have been many renewable projects that KIUC has tried to develop (hydro is an example) that have been stopped for one reason or another.

Baseline Analysis

- From KEMA report, they took residential out of the equation and focused on commercial DSM. 1/3 of single family homes have solar hot water heating. The KEMA report considers the economic, but you also need to look at the market. There is a solar hot water heating report (he will give us) which shows some of the barriers. The rebate program is more popular than the loan program. Also, a federal tax credit last year that was going to be discontinued. Participation in these

Demand Side Management Stakeholder Meeting

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programs is "lumpy." The flat \$800 rebate is more popular than the previous rebate by percentage.

- There is a requirement that new homes have a solar hot water heater; include that information
- There are now LED replacement bulbs that can significantly cut energy use (6Ws are replacing 50W). Marriott is also leveraging their market power to encourage their vendors to offer EE options.
- People are asking before they make reservations in Waikiki if they are ENERGY STAR qualified.
- KIUC rebate and incentives are important.
- Sears would like to reduce energy use by 10% this year. Motion sensors are being installed. They help residential sector to choose EE appliances (ex. LED flat screens)

Goals

- Looking at doing a study on benefits of smart grids.
- Kauai's residential sector is more energy efficient than other islands (per household).
- KIUC's DSM goal does not grow over time, however, HCEI hopes to increase energy efficiency by 30%.
- One participant thinks that if there is not a growth in energy efficiency then the difference is in feasibility.
- Anything that is customer-sided is going to be on the renewable side (toward the 40% goal). Other technologies will be displacement (such as solar hot water heating), and will go toward the 30% HCEI goal.
- CHP (Combined Heating and Power), or absorption chillers, capture the waste hit from an engine or turbine; you put in hot water and cool water comes out of it. Another option might be pumped sea water hydro (such as the example in Japan). Off-peak energy is used to pump the water for storage.
- SWAC might be an opportunity
- The infrastructure issues may pose a problem (currently a project in development in Oahu).
- There is a range of energy efficiency; KIUC suggests a 5.6% decrease in energy use, HCEI suggests a 30% decrease. What is appropriate for Kauai? What metrics should we use (% , GW, or GWh)
- No number available now.
- HCEI goal of 4300 GWh is very aggressive. They set a goal in GWh and went back and came up with a percentage. Set a high bar and reach for that goal. What do you have to lose?
- It would be interesting to see how much the KEMA report projections correlated to real life energy efficiency. We should compare what happened from 2005 - 2008 to start.

Demand Side Management Stakeholder Meeting

Date: April 6, 2009

Policy

- Mandatory policies, building codes for new buildings and retrofitting existing buildings can greatly impact energy efficiency.
- Incentives are usually defined by cost-effectiveness of energy efficiency opportunities.
- Cap and trade opportunities could alter the benefits, and hence, alter the incentives.
- KIUC doesn't have any plan in place because HCEI's work has made their IRP "null and void"
- The county offered the building division performance contracting in the past, but that could be revisited. Back in 1995 the County tried to look at the water facilities and wastewater departments, but since then their equipment has aged and operations have changed, so that might be worth revisiting.
- IECC (International Energy Conservation Code) from 2006 has been adopted state wide for state buildings. Carol urges the adoption of IECC code for county buildings. IECC will incorporate some of the ASHRAE standards. DBEDT has worked with the local Department of Education and County General Services to develop the High Performance School Guidelines. According to state law, counties have 2 years to adapt and adopt state codes (which are now IECC 2006).
- Stronger building codes are necessary.
- Kauai Community College (KCC) recently built two new buildings that she wished had been LEED certified. Retrofitting is as important as requiring new buildings to be LEED certified.
- Are there policies that accompany these codes? For example, the Judiciary at Christmas time was trying to reduce their plug load.
- There are building codes, but there also have to be policies on energy usage practices.
- KIUC's incentives for AC enabled one retailer to replace its system last year, however the money the same type of incentive was not available to install PV.
- Bundling PV's and EE (energy efficiency) could overcome the issue described by Robert.
- ESCOs will do an analysis on your property and they will give you a loan for EE installments.
- Municipal leases are set up by ESCO.
- Power Purchase Agreements (PPAs) are important for purchasing expensive renewables (Consensus)
- There is now legislation to have refundable tax credits. ARRA funds are also up in the air right now.
- Investment tax credits are 35% (with dollar cap for the state) for solar thermal.
- LEED ratings have recently been criticized for not being aggressive enough. Is this true?
- ENERGY STAR qualified buildings are voluntary, but are 25% more efficient than many buildings. The local code is so antiquated and not aggressive in energy efficiency, so LEED buildings would be a big step in energy efficiency standards.

Demand Side Management Stakeholder Meeting

Date: April 6, 2009

LEED standards are probably not aggressive as compared to California's building codes.

Other Opportunities

- How do we save energy and water?
- The baseline is inefficient. Their water systems utilize gravity and pumping. They also develop water nearest to end use facility. Efficient equipment is already used in order to lower operation costs; O&M can be reduced through a higher capital cost in EE equipment. Balance the amount of storage with amount of pumped water that you'll need. Sources have back ups (2 sources in every system). Overall, not a lot of potential for increased DSM in this sector. They could pump off peak and get a lower rate ;)
- Are they using variable speed drives?
- Not currently, but that would be an opportunity. The water department has been using start of capacitors and they are looking at variable speed drives.
- Advance Metering Infrastructure (AMI) will provide more information for load shifting. The differences historically of on and off peak rates has not justified time of use rating, but that could change as the generation mix changes and AMI is introduced. Load profiling is not currently offered, but could be considered.
- Time of use should reduce demand, and also cut down how much more energy has to be installed.
- Using native Hawaiian plants is reducing the amount of water use on their properties. They are also trying to educate visitors with in room recycling. Currently there is no water catchment. There's window tinting that could reduce AC loads. Clean Works soaps are available for green cleaning products.
- There is an opportunity for residential water heating efficiency. Propane-heated water is more efficient than electric. Legislation and building codes could compensate for the costs. They are looking at biofuels and methane gas as different supplies.
- Tiki torches are popular for the resorts, but there should be a shift away from them since they are symbols of fossil fuel use.
- Water catchment and greywater could be utilized more. There isn't much of a dialogue in the county.
- The University needs industry to talk to the community college in order to provide green job training. Currently they are ramping up some courses including PV installation, Ag, residential energy audits, etc. Helen is slightly frustrated because it is unclear what they should be doing. There is a green task force that will hopefully tell the university what companies exist and what educational opportunities are needed.
- There is going to be a survey (not island-specific) showing what green jobs exist.