

Hawaii Energy Forum Meeting

HEPF General Membership Meeting

May 9, 2007

HEI Training Room #2

ASB Tower, 1001 Bishop Street, 8th Floor

10:30 am to 1:00 pm

In Attendance:

Forum Members:

Robbie Alm, HECO; Catherine Awakuni, Div. of Consumer Advocacy; Warren Bollmeier, HREA; Mitch Ewan, HNEI; Carl Freedman, Haiku Design and Analysis; Mark Glick, Office of Hawaiian Affairs; Steve Golden, The Gas Company; Mike Hamnett, RCUH; Paula Helfrich, Econ. Develop. Alliance of Hawaii; Shad Kane, Ahaui Sivila Hawaii of Kapolei; Bill Kaneko, HIPA; Maurice Kaya, DBEDT; Darren Kimura, Energy Industries; Kal Kobayashi, Maui County Energy Office; Sen. Ron Menor, Senate Committee on Energy & Environment; Sharon Miyashiro, PPC; Rep. Hermina Morita, House Committee on Energy & Environmental Protection; Melissa Pavlicek, Western States Petroleum Association; Rick Reed, Hawaii Solar Energy Association; Peter Rosegg, HECO; Glenn Sato, Kauai Office of Economic Development; Bill Short, Building Industry Association of Hawaii; Lance Tanaka, Tesoro Hawaii Corp; Susan Char, Consultant; Kim Suman, Grad Assistant to HEPF

Guests/Visitors:

Amy Asselbayer, Cong. Abercrombie; Paul Berustein, CRAI; Kat Brady, Life of the Land; Yuko Chiba, OHA; Henry Curtis, Life of the Land; Shasha Fesharaki, FACTS Inc.; Carey Koidc, KIUC; David Leonard, Imperium Hawaii; Landis Maez, Blue Earth; Ed Reinhardt, MECO; Steve Rymsha, KIUC; Bob Shleser, Clear Fuels; John Tanthinger, DBEDT; Priscilla Thompson, DBEDT; Kang Wu, FACTS Inc.

2007 Legislature Results: Senator Ron Menor and Representative Hermina Morita

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Some far reaching legislation was passed including:

- HB 226, re: GHG emissions - This bill establishes a statewide policy regarding GHG emissions and sets up a task force.
- HB 869, proposed by the HEPF, provides an appropriation for developing a strategy for energy efficiency in the transportation sector.
- HB 1003, re: Bioenergy Master Plan - This bill now codifies HNEI (which was previously in session law) to provide the structure to review demonstration projects. The second part of this bill, which mandates a bioenergy master plan, was not fully funded so there is more work to be done. Another component of the bioenergy master plan involves \$450K for an integrated food energy strategy.
- HB 1004/ HB 1005, strongly supported and proposed by the HEPF, supports the reorganization and proper staffing of the PUC and DCA offices.
- SB 1026 - Provides improvements to the bottle law.
- SB 1066 - This bill imposes fees for an invasive species program.

Rep Morita, stated that “Surfacing the issues and carrying on the momentum for legislative interest, political will, and constituency support is important,” and thanked the Forum for keeping these issues at the forefront and offering needed support.

Blue Earth Biodiesel Presentation: Ed Reinhardt, MECO, and Landis Maez, BlueEarth Biofuels

About two years ago, MECO had problems with opacity when starting up generators. They looked at improvements to their mechanical equipment but ultimately turned to fuel evaluation. They tried using biodiesel during start up and experienced no opacity problems. They then tried using biodiesel during shutdowns and, again, experienced no opacity problems.

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Two and a half years ago, MECO started to develop a plan to blend ethanol with their diesel fuel. They looked at issues related to gaskets and consumables such as o-rings and seals. They ran into problems with ignition so instead started to look at biodiesel. DOH has now approved a test plan for a combustion turbine (CTU) to use biodiesel at start-up as well as run 100% on biodiesel. NOX is a problem at mid-cycle and MECO is still working through this issue. However, MECO has been moving forward to identify a reliable source for biodiesel. Ultimately, MECO decided to partner with Blue Earth and has signed an MOU.

Landis Maez, Blue Earth Biofuels, indicated that the MOU development process with MECO started about a year ago. The Maui Biodiesel plant will be located at HECO's Waena site. It will include 15 acres of land and have a productivity of 96 GWh/acre/year when used for biodiesel. It is in close proximity to power generation. The land was leased at fair market value. The plant will produce 40 million gallons/year (mgy) and will be expandable to 120 mgy. MECO needs 75 mgy. It will be state-of-the-art and use a proven continuous process. The first plant will be capable of meeting quality control specs BQ-9000 and ASTM D6751 06b. The phase I operation will require at least 40 employees. The feed stock will be multi-vegetable oil feed stock which will be locally grown in the long term. Initially, sustainable, non-deforested soybean, canola, etc. oils will be used as the feed stock.

HECO proposed setting up a "Biofuels Public Trust" in order to share the project's profits with the public. The trust will receive half of the project profits. The trust will fund local agriculture infrastructure development.

Plant start-up is scheduled for 2009. The project has secured preliminary capital commitments and Hawaii Special Revenue Bond authorization. A biofuels construction company and timing are now locked in. The permitting timeline could be shortened with this site. The plant will provide long-term low-cost biodiesel to HECO. Because it is a leveraged project, there will be the ability to provide low

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product pricing. The Blue Earth team has more than 50 years of energy project development experience.

The project benefits include:

- Agriculture stimulus – biofuels trust and market creation
- Provides a game-change in fuels pricing approach
- First in the Pacific to meet ASTM 6791 o6b QC spec
- Provides workforce growth with high-paying career positions
- Unique window for a 2009 start-up with a world-class team of engineers, contractors and others
- In alignment with the State's goals with broad-based support (DBEDT, DLIR & DoA)
 - Renewable energy
 - Energy independence and security
 - Environmental quality improvement
 - Sustainable biofuels
- Broadening biofuels supply capabilities within Hawaii

What feed stock makes the most sense, how to price, etc. still need to be resolved.

LNG Presentation: Mark Glick, OHA, Director of Economic Development, and Shasha Fesharaki, FACTS, Inc.):

OHA teamed with HEPF and HNEI to commission a study investigating the long term potential for Hawaii and the Native Hawaiian Community of replacing petroleum with natural gas, preferably from Alaska. OHA's interest in Alaska natural gas was stimulated by a briefing of the Alaska Gasline Association in July of 2006 on the proposed trans-Alaska natural gas pipeline project.

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The OHA/HEPF/HNEI study was a follow-up to an initial liquefied natural gas (LNG) study in 2004 that looked at access to supply, etc. as well as transportation issues (Jones Act, etc.). This follow-up study went further to look at policy implications, labor implications, etc. OHA is looking at natural gas (delivered to Hawaii as LNG or compressed natural gas (CNG)) as a bridge strategy, not in lieu of renewable energy options.

FACTS, Inc., the international energy consulting firm behind both LNG studies, find natural gas as a good option for Hawaii because it provides energy security through diversification and uses a domestic supply source. Based on an assumption that 20% of the state's consumption of fuel oil used for power generation would be replaced by natural gas by 2013, a 20% reduction in oil dependence would occur.

From an environmental perspective, natural gas is an improvement over oil as the cleanest fossil fuel. Based on the 20% fuel oil replacement discussed above, natural gas would also help reduce Hawaii's global warming potential by providing a 25% reduction in GHG emissions. Therefore, the use of natural gas ties in well with HB 226.

Lastly, natural gas can compete price-wise with LSFO and other fuels. By 2013, natural gas could become a main fuel in the power sector in Hawaii and also has potential for use in the transportation sector.

Based on the previously discussed power sector replacement demand alone, FACTS, Inc. estimates a natural gas supply requirement of 1.8 tcf for 20 years. This volume of natural gas is easily available within proven worldwide reserves. Various import options exist and include either an onshore terminal or an offshore terminal. The first offshore terminal was completed by Enersea in the US Gulf Coast in 2005 and handles compressed natural gas (CNG). For transportation, natural gas is usually liquefied and then regasified upon delivery and then sent to market.

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LNG ships generally have a draft of 42 to 44'. Barber's Point Harbor has a draft of only 36 to 38'. Offshore unloading is more costly than onshore unloading. CNG operations are basically similar to LNG operations, however the natural gas is not liquefied, only compressed under a high pressure.

Can LNG compete cost-wise? Using an offshore terminal for unloading, LNG costs \$1 to 2/mmBtu. This results in an overall cost of \$8.94 to 13.70/mmBtu. Enersea quoted an all-inclusive tariff of \$4/mmBtu. They would use 4 ships to supply the islands, one of which would be permanently moored offshore. The price of the natural gas would have to be \$5-6/mmBtu maximum for this alternative to be viable.

What would the economic impact be? Hawaii's retail gas prices were 33% above the national average in 2006. \$1 to 2/mmBtu savings potentially would have a great impact. The operation of an LNG terminal requires about 45 people therefore, there is potential for jobs. However, there is potential for job losses due to a refinery shutdown, etc. There are federal incentives for natural gas vehicles, etc. which would be beneficial. The financial analysis for natural gas assumes either American flagged ships or an exemption from the Jones Act for natural gas from Alaska.

Further analysis is necessary to quantify the retrofit and pipeline construction costs for existing facilities to convert to natural gas. OHA is also planning to further investigate what role it can play in staking an equity position in some part of the natural gas supply and delivery chain as a long term revenue stream for the Native Hawaiian Trust Fund.

In conclusion, natural gas (LNG or CNG) provides an opportunity for diversification from Hawaii's dependence on foreign oil.

Working Group Updates:

- Renewable Energy – Warren Bollmeier – see the handout which was distributed.

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- Regulatory Reform – Carl Freedman – HB 1004/1005 require follow up via letter to the Governor for support; and subsequent monitoring. Currently in process is a study to review the statutes and county laws to determine the opportunities and obstacles for renewables development.
- Hydrocarbon Future – Steve Golden – A report was submitted to the Legislature on the Chicago Climate Exchange (CCX). The report recommended the State of Hawaii postpone becoming a member of the CCX. Regarding the FACTS & OHA LNG study, the impacts to the local refineries need to be researched in relation to the increased use of renewable fuels. HB 791, which was recently passed, addresses the reporting requirements.
- Energy Efficiency – Kim Suman gave a short update.
- Social & Cultural Impact – Paula Helfrich – WG is working with the Waianae community on impacts due to large installations (military, utility, etc.) in their communities. They are looking for funding for burdened communities. They recently received a small grant from Hawaii Community Foundation. Paula will provide more information at the July meeting.
- Communications/Outreach – Peter Rosegg gave a short update.

University of Puerto Rico (UPR) invitation.

UPR invited the Forum to its meeting on “sustainable energy” in May to learn about the Forum’s process as Puerto Rico attempts to move toward developing a strategy for sustainable energy. UPR is paying for the panel presentation which includes Rep Morita, Carl Freedman, and Sharon Miyashiro who will present the Forum’s process and achievements and lessons learned in public policy development.

Next meeting.

Next meeting date is July 24 from 10 – 1:30 pm. We will ask Maurice Kaya and Carlito Caliboso to present the plans and priorities of their respective programs. We will discuss the results of the Steering Committee’s report from its retreat, which

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examined the results of member evaluations relating to governance as well as action plans and benchmarks for action.