Rebuild Hawaii Consortium Meeting
May 23, 2006
HEI Training Room, 8th floor
American Savings Bank Building, Alakea and S. King Sts.
Honolulu, Hawaii

Notes
You can find copies of these notes and presentations on the Internet at http://www.rebuildhawaii.us

Attendees are listed on the final page.

WELCOME AND INTRODUCTIONS

Jim Maskrey, President, welcomed the group.

Bob Arrigoni, new Energy Coordinator for the County of Hawaii was introduced.

Mike Markrich, representative of our new business affiliate, **MicroPlanet,** described a new technology that will solve the problem of too high or low voltage from the electric utility grid. Micro Planet was founded in 2000; its head office is in Seattle. The company's goal is to serve markets to solve low voltage, high voltage and interconnection problems. MicroPlanet's point of service voltage regulators are installed at the delivery interface between the utility grid and each utility customer. Regulating voltage at the point of service provides a low cost method for saving energy, increasing cash flow, and lowering operating costs. MicroPlanet research shows achievable energy savings from its technology of up to 18%.

PRESENTATIONS

Manfred Zapka, MMS Engineering*, Peak Oil and the End of Cheap and Easy Oil:* *Challenges to the Global Community as It Faces the Most Difficult Transformation in the History of Industrial Society*. Zapka says energy is one of the major challenges facing us today, but the most urgent to solve. Energy demand continues to increase, with oil driving the global economy. He described the current dialogue between the optimists who see a growing oil supply and the realists/pessimists who see the oil supply decreasing. Changes in thinking from a traditional to a more futuristic way of thinking about energy is necessary to survive. Energy change requires a sense of urgency about the coming shortages, based on an understanding of Peak Oil, or maximum oil production possible. Peak Oil is an easily understood concept, but predicting when the peaks in supply will occur requires complex modeling with many parameters. For example, the US Geological Survey predicts reaching the oil production peak in the US in 2026, 2037, and 2047. A US Department of Energy model predicts the oil peak in either 2016 or 2037. A French model predicts the peak in 2017. Exxon estimates production from existing fields is already decreasing 4 to 6% a year and says that by 2015 there is a need to find enough new oil fields to replace at least 80% of current production.

Zapka says that one of the gaps between supply and demand can be filled by alternative fuels, unconventional oil sources (like tar sands), reserves, advanced technologies, and new conventional oil discoveries. The real question is the amount of energy invested to recover and

manufacture energy resources. According to Zapka, "The biggest problem we face today is insufficient data to make 100% accurate predictions". Meanwhile, we are speeding up consumption, when we should be slowing down.

Frank Kingery, Rebuild Coordinator, reminded the Consortium that the Coordinator program's purpose is to enhance the efficient use of energy by Rebuild partners, primarily though facilitating access to technical assistance and financial resources. Current focus is on state facilities and projects include:

- Hawaii Air National Guard compressor system upgrade
- Hawaii Public Housing Authority energy savings performance contract
- Department of Accounting and General Services (DAGS) technical support
- Department of Transportation-Airports technical support

Allyn Lee, City and County of Honolulu, brought the Consortium up to date on his $7 million energy savings performance contract for the Honolulu Municipal Building (HMB) and Honolulu Police Department Headquarters (HPD). Contractor is Johnson Controls, Inc. HECO rebates were $175,000. Payback is 11.2 years.

Energy conservation measures and savings include:

- HMB—lighting, central air-conditioning plant retrofit (including new high efficiency chiller with VFDs and new induced draft cooling tower
- HMB savings from 11/04 to 10/05 were 29% kwh, 41% kw and 33% costs
- HPD—lighting retrofit, HVAC system modernization
- HPD savings from 11/04 to 10/05 were 22% kwh, 18% kw, and 22% costs.

Other measures being considered include a power management program and HECO's direct load control program. A photovoltaic system was considered for the HMB rooftop but did not prove cost-effective.

Bill Brooks, Ferraro Choi, gave a summary on the cost/benefit analysis of green vs. conventional construction under a contract with DBEDT for an ***Analysis of economic, environmental, and occupant benefits of sustainable design and LEED certification for State of Hawaii and K-12 public school facilities***. Study tasks include:

- Determining benefits and costs of sustainable design for new DOE schools
- Case study of benefits from the Waipahu Intermediate School Cafeteria to meet LEED standards
- Case study of benefits of sustainable renovations of an existing DOE classroom
- Implementation recommendations for the Department of Education

The project team includes Ferraro Choi, Lincoln Scott, Inc., RMI/ENSAR, and O'brien & Co. The team works closely with a Review Committee/Working Group from DBEDT, DOE, DAGS, HECO, UH, and Punahou School.

Data gathering and analysis are underway, with a major project review in mid-August. The final report is due February 2007.

Ken Patterson, Advanced Energy Innovation. Ken introduced the Delta Power Supply electronic HID power supply. This power supply provides superior lumen maintenance for HID lamps as well as color uniformity, quick strike and restrike, more lumens per watt, a sound rating of A, dimming to 35% of power and many other features. This system will typically save 35-50% of the energy over a conventional HID lighting system.

Scott Arakawa, E-Series Lighting, Andrews Technology, Inc.. The company has its origins in Hawaii. It manufactures and distributes an energy efficient fluorescent light fixture that was developed and patented by Molokai resident, John J. Wordin. The fixture has reflectors which utilize normally wasted light from the top of the lamp and provide a uniform light level in the room. The fixture can save 20% in energy over a conventional fixture.

IIDA Awards. Howard Wiig, President of the Hawaii Illuminating Engineers Society presented awards to:

Dave Stiner for installing Solar Bollards at Hickam Air Force Base.
Galen Kim, Franklin Towers Pathway Lighting

The Rebuild Hawaii Consortium shares information about new products, practices and services, but does not promote or endorse products or vendors.

Attendees

Advanced Energy Innovations—*Ken Patterson*
AMEL Technologies, Inc*.—Melek Yalcintas*
Andrews Technology Inc. (ATI)—*Scott Arakawa, Richard Andrews*
Chamber of Commerce of Hawaii*—Jim Maskrey*
City & County of Honolulu*--Allyn Lee, Darren Wong*
County of Hawaii*—Bob Arrigoni*
Department of Business, Economic Development & Tourism (DBEDT)-*–Maurice Kaya, Liz Raman, Howard Wiig*
Department of Defense (HARNG)—*John Hao, Sr.*
Department of Education*— Nick Nichols, Brenda Lowrey*
Eco-Lite*– Tom Brennan*
Energy Industries*—Miles Kubo, Karen Leifheit*
Ferraro Choi—*Bill Brooks*
Hawaii Audobon Society—*Lydi Morgan*
Hawaiian Electric Company, Inc. (HECO) *—Jim Maskrey, Steve Chang, Dean Oshiro*
Illuminating Engineers Society*—Howard Wiig*
Johnson Controls, Inc.*—Michael Chang*
Kauai Island Utility Cooperative—*Carey Koide*
Malama Learning Center—*Paula Nagao*
Micro-Planet—*Mike Markrich*
MMS Engineering—*Manfred Zapka*
Tetra Tech, Inc*.--Frank Kingery, Chris Lippert*
Twin Eagles*—John Wordin*
U.S. Air Force*—Dave Stiner, Tom Van Liew*
U.S. Coast Guard—*Glen Yanagi*
U.S. Marine Corps*--Bill Nutting, John Dunbar*
U.S. Navy
NAVFACHAWAII—*Kevin Saito*
University of Hawaii Community Colleges—*Rodney Yim*
Eileen Yoshinaka