

**Renewable Energy Working Group Goals and Action Plan
2006 – 2007**

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Ten Point Plan Action Area(s):

- Ten Point Plan #1 – Expand Renewable Energy Opportunities
- Ten Point Plan #3 - Increase the Use of Solar Water Heating and Energy Efficient Appliances
- Ten Point Plan #8 - Support research and development of alternative fuels (hydrogen, wave energy, etc.)
- Ten point Plan #9 - Encourage development, production, and use of biofuels

TPP #1: Expand Renewable Energy Opportunities

Goals:

- Increase development and use of Hawaii's indigenous renewable energy resources to increase the use of renewable energy to 20% of electrical energy use in Hawaii by 2020.

Background:

The REWG would like first to summarize briefly the current status of renewables in Hawaii:

1. Wind development: two windfarms with a total of 40 MW capacity were installed in 2006 and another 20 MW is planned in 2007; and a number of other projects are under consideration. It is estimated that roughly 10% to 20% of net-metered systems are small wind turbines.
2. Solar development: there are no large solar farms at the present time. However, there are on the order of 90,000 to 100,000 solar hot water systems installed statewide with 3,000 to 4,000 new installations a year; and there are over a 100 net metered PV systems and approximately 700 kW commercial, non-net-metered PV systems statewide.
3. New biomass projects are under consideration: Kauai Island Utility Cooperative has selected to projects for negotiations as a result of a recent RFP for as-available renewable projects, and Renewable Hawaii Inc. has indicated there are one or more biomass projects under consideration following its RFPs seeking renewable energy partners.

4. Puna Geothermal Ventures is planning to increase their 30 MW capacity by 8 MW (don't have a timeline yet).
5. MECO is investigating the feasibility of a pumped-hydro storage facility on Maui.
6. Two or more ethanol facilities will be under construction next year, including one on Kauai, and one or more on Oahu and Maui.
7. Biodiesel production continues at Pacific Biodiesel's facility on Oahu and there is interest in expanding their production with development of new biomass feedstocks in the island.
8. A local firm, Honolulu Seawater Air Conditioning, LLC, has begun to develop several large renewable energy seawater air conditioning (SWAC) district cooling systems in Hawaii.

The 2006 legislature passed significant legislation to provide tax credit incentives for the adoption of renewable energy systems by both the residential and commercial sectors. SB2957, Section 2 increased income tax credits for solar thermal, photovoltaic, and wind installations. The sunset date for these incentives was permanently removed which brings stability to the market and encourages the renewable energy business to invest in their business.

HB2175, Section 2 appropriated \$5,000,000 to install a minimum of four (4) photovoltaic, net energy metered pilot projects in public schools, one in each county.

Objectives

The challenge now lies in taking advantage of the momentum already gained in the market, in part, implementing these incentives and monitoring the rate of "take up" by the market to determine how well they are working. It would therefore be useful to measure the number of systems installed. It would be useful if the HREA could collect these numbers from its membership and provide them to the Forum on a monthly or quarterly basis. Using the HREA data would be faster than waiting for the tax department to collect data.

It would be useful for the Forum to work with the DOE and DBEDT to monitor implementation of the DOE PV program. It is recommended a contract be issued to HNEI to collect and analyze data from these pilot installations. HNEI is conducting a similar monitoring function with the Navy's Ford Island installation and could apply its expertise to the school project.

The Forum should try to identify promising new renewable energy technologies (such as solar thermal electric, SWAC, solar air conditioning and wave energy) and incorporate these technologies into State energy policy and proposed legislation.

Action Plans:

1. Report Card: work with the HREA and DBEDT to monitor the effectiveness of the tax incentives and produce a monthly/quarterly report card in each of the renewable energy areas:
 - a. Develop metrics:
 - i. New wind power;
 - ii. New net metering accounts;
 - iii. New solar hot water heaters.
2. Program “Tune-up” - identify barriers to the effective implementation of the program – can we make them better?
3. Brief legislature & PUC – provide near-term briefings to the legislature and PUC/DCA on how the program is going.
4. Prepare Opeds on the successes and/or failures of the program to keep the program on the front burner with the public and the legislature. It would be very useful to prepare energy savings “success” stories.
5. Coordinate with the Communications WG.
6. Develop a relationship with the DOE solar pilot project manager and involve the Forum/HNEI in monitoring the results.
7. Work to add additional schools to the program.
8. Work with developers of promising new technologies to characterize the performance of such technologies and their contributions to Hawaii’s energy system.
9. Incorporate new technologies into State energy plans.
10. Conduct a side-by-side analysis of various renewable energy technologies and the contributions that each technology can provide in the near term (0 – 5 years), mid-term (5 – 10 years), and long term (10 – 20+ years). Note: While this is a worthy objective, we currently don’t have the financial resources to do this.
11. Provide assistance to new renewable energy technologies through public education and legislative and regulatory support.

TPP #3 - Increase the Use of Solar Water Heating and Energy Efficient Appliances

Goals :

- Seek innovative ways to finance the cost to install energy savings devices.

Background

SB2957, Section 13 establishes the solar hot water heating “Pay as You Save” (PAYS) pilot program.

Objective:

The challenge now lies in the implementation of these incentives and monitoring the rate of “take up” by the market to determine if they are working. The Forum shall closely monitor the implementation of this program. The Forum shall work with HECO, HREA, and the PUC/DCA to monitor the progress of implementation and the level of acceptance by consumers. Progress will be communicated in the form of a report card, Opeds, and as a component of the Forum’s communications plan.

Action Plans:

1. Report Card: work with the HECO, HREA, and the PUC/DCA to monitor the effectiveness of the tax incentives and produce a monthly/quarterly report card.
2. Program “Tune-up” - identify barriers to the effective implementation of the program – can we make it better?

TPP #8 - Support research and development of alternative fuels (ethanol, biodiesel, hydrogen, etc.)

Goals :

- Recognize Hawaii as a premier demonstration site for the deployment of the hydrogen economy.
- Conduct R&D on Hawaii’s renewable energy sources as potential sources to produce hydrogen.
- Leverage state funds to attract federal programs that will assist in the development of Hawaii’s renewable energy sources.

Background

The 2006 legislature passed SB2957 to establish the Hawaii renewable hydrogen program (RHP) as follows:

- Section 6 – establishes the Hawaii Renewable Hydrogen Program (RHP);
- Section 7 – establishes the Hydrogen Investment Capital Special Fund
- Section 10 – appropriates \$10,000,000 to the Hydrogen Investment Capital Special Fund
- Section 12 – appropriates \$100,000 for a hydrogen system program manager at the Hawaii Natural Energy Institute

The Hydrogen Investment Capital Special Fund will be administered by DBEDT and the Hawaii Strategic Development Corporation however, the Forum has not yet been apprised of the state’s plans for its implementation.

Objectives

To coordinate and work with the state energy office in the planning and implementation of the RHP. The Forum shall monitor progress in the development of the program to determine if it is meeting the intent of the legislation and make progress reports. The Forum can also participate in helping DBEDT to develop the program administrative procedures.

Action Plans:

1. Request a presentation of state's plans for the RHP.
2. Assess areas where the Forum can provide support.
3. Define specific support tasks.
4. Implement approved support tasks.
5. Provide policy recommendations as appropriate.
6. Report Card: - work with DBEDT to monitor progress in the development of the Renewable Hydrogen Program.

TPP #9 - Encourage the development, production, and use of biofuels

Goals :

- The overall goal is to increase the utilization of biofuels in Hawaii's energy mix;
- Support efforts to encourage increased biofuel production;
- Document the current biofuels utilization in Hawaii:
 - Set a biofuels baseline against which to measure progress;
 - Document organizations using biofuels and amount.
- Document state agency implementation. Have each state agency report on its monthly utilization;
- Document existing and planned biofuel production;
- Identify barriers to production of biofuels;
- Identify status of biofuel production technologies;
- Identify areas for Hawaii R&D requirements and opportunities.

Background

The Forum has spent varied amounts of time and effort reviewing, evaluating and proposing policies to support renewable electricity technologies (RETs) and renewable displacement technologies (RDTs). In contrast, very little of our effort has been directed to renewable fuels. The 2006 legislature passed SB2957 to encourage the use of biofuels in Hawaii as follows:

- Section 4 – establishes a biofuels preference with state agencies;
- Section 8 – appropriates \$200,000 to conduct a statewide multi-fuel biofuels assessment of potential feedstocks and technologies, the economics of the various renewable fuel pathways, and the potential for ethanol, biodiesel, and renewable

hydrogen production to contribute to Hawaii's near, mid, and long-term energy needs.

- Section 9 – appropriates \$150,000 as matching funds to the agricultural community for assistance in developing energy crops or agricultural waste streams.

The biofuels program is to be administered by DBEDT.

Objectives

To review and evaluate the production of renewable fuels in Hawaii, including the status of technologies and approaches proposed for Hawaii, and recommend further policy actions to support the increased use of renewable fuels in Hawaii. The Forum shall work closely with DBEDT to monitor progress in its implementation and where desirable, take actions to improve the program and/or remove barriers. The Forum will also work with DBEDT to augment the program through policy initiatives and/or funding to implement the intent of the program. One important function the Forum can play is to monitor the progress that state agencies and others are making in substituting biofuels for petroleum products and develop a monthly report card for the public.

Action Plans:

1. Report Card: - work with DBEDT to monitor progress in the development of the biofuels program;
2. Coordinate with DBEDT on an educational outreach activity to local agricultural landowners regarding opportunities in farming energy crops for local biofuel production;
3. Provide support to DBEDT for the Agricultural Biofuels Workshop planned for 27 October 2006 as follows;
 - a. Assistance to develop the program;
 - b. Identify issues, barriers, and potential solutions raised by workshop participants;
 - c. Prepare a workshop outcomes report;
 - d. Develop an action plan to address barriers.
4. Recommend policy actions to the legislature.