

## Energy For Tomorrow

The State of Hawaii's New Year's Resolution is to provide "Energy For Tomorrow." Hawaii relies on imported petroleum for nearly 90% of its energy needs. Hawaii is presently facing the highest energy costs in the nation. This heavy dependence on oil, places Hawaii's long-term economic viability at risk because high oil prices will be passed on to consumers – This is a compelling state interest.

To make sure there is energy for tomorrow – it is important to properly marshal our resources today and stimulate the production and use of biofuels to reduce our addiction to foreign oil. For years there has been much talk about weaning our state off oil and creating a renewable energy industry – cheap oil prices has blocked implementation of meaningful bioenergy policies. **It is time to make Hawaii energy self sufficient!**

This **comprehensive energy bill** sets forth an **integrated strategic policy framework** that provides reliable, cost effective methods to conserve energy for tomorrow, with state agencies taking the lead to implement conservation measures. The bill establishes bold initiatives to provide a catalyst to produce new energy for Hawaii – **launching Hawaii as a leader in renewable fuel production. These initiatives will provide measurable achievable results in the near, mid and long term – creating more Energy For Tomorrow.**

### **Low Oil Prices Not Expected to Return**

Experts indicate that world oil prices have reached new highs - the low prices of the past are not expected to return because worldwide demands continue to surge.

For example, from 1992 to 2003, Hawaii's average annual oil imports from the Middle East were less than 1%. In 2004, Hawaii imported 13.5% of its crude oil from the Mid East. In 1998, Indonesia, Australia and China, combined, provided approximately 80% of Hawaii's crude oil demand. By 2004, their total declined to 31%. In fact, China's demand in 2004 skyrocketed by about 1 million barrels per day.

Hawaii, like much of the Asia-Pacific, and the world, is competing with strong demand for increasing oil imports from the oil-producing countries. Countries that used to be net exporters to Hawaii, like China, have become oil importers. This intense competition for the same diminishing energy resource – crude oil – has led to a significantly higher new "plateau price", from which experts have concluded historical low price trends will not return.

Exactly 1 month ago, December 12, 2005, the US Energy Information Administration (USEIA) released its updated oil price forecast.<sup>1</sup> The USEIA is the federal agency with the primary

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<sup>1</sup> USEIA Overview Summary: "In preparing *AEO2006*, EIA reevaluated its prior expectations about world oil prices in light of the current circumstances in oil markets. Since 2000, world oil prices have risen sharply as supply has

responsibilities for this country's energy statistics. The agency's "Early Release" of its *Annual Energy Outlook 2006 (AEO2006)* confirmed that this intensely competitive global oil market, together with major disruptions like Hurricane Katrina, and inadequate investment in new oil supplies, has prompted the agency to reevaluate its previous oil price forecast due to sharply increased world oil prices. In the words of the EIA analysts, they are projecting: "Much higher world oil prices than were projected in *AEO2005*..."

In fact, EIA's December 2005 report has revised last year's forecast of the price of oil for the year 2025 sharply upward. Last year, EIA's 20-year forecast projected that oil prices would be \$32.94 per barrel. Now, the agency projects that light, low- sulfur crude oil – the only kind used in Hawaii – will cost \$54.08 per barrel in 2025 (about \$21 per barrel higher than the projected 2025 price in *AEO2005*), rising to \$56.97 per barrel in 2030. (All prices are in "2004 dollars.")

A final note on oil price forecasts: Traditionally, USEIA's oil price forecasts have been fairly conservative; i.e., on the low side.

### **Hawaii Has Abundant Renewable Fuel Potential**

A 2003 study by Stillwater Associates projected that an ethanol industry of 90,000,000 gallons per year "could add as much as \$300,000,000 to Hawaii's economy in direct and indirect value."

In addition, emerging energy technologies can increase the use of renewable resources through conversion to hydrogen-rich liquid or gaseous fuels as energy carriers, stimulating more economic growth, while making the state more self-reliant. With advanced hydrogen technologies, renewable resources can be stored, distributed, and used in a variety of clean, efficient power and transportation applications.

The State's combination of abundant renewable resources, high fossil fuel prices, limited geographic area, and recognized expertise in hydrogen technology research and development, makes it an ideal location to lead the transition to a hydrogen economy over the long term and bring considerable investments of dollars and expertise to Hawaii.

### **Strategic Plan – Energy for Tomorrow**

This bill establishes a long-term strategic plan, which provides near, mid and long term results that moves Hawaii to be not only energy self-sufficient, but will create Hawaii as a leader in

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tightened, first as a result of strong demand growth in developing economies such as China and later as a result of supply constraints resulting from disruptions and inadequate investment to meet demand growth. As a result of this review, the *AEO2006* reference case includes much higher world oil prices than were projected in *AEO2005*. In the *AEO2006* reference case, world crude oil prices, which are now expressed in terms of the average price of imported low-sulfur crude oil to U.S. refiners, are projected to increase from \$40.49 per barrel (2004 dollars) in 2004 to \$54.08 per barrel in 2025 (about \$21 per barrel higher than the projected 2025 price in *AEO2005*) and to \$56.97 per barrel in 2030. (*AEO2006* Overview, USEIA Website.)"

hydrogen production and possibly an energy exporter. The bill contains the following integrated system of initiatives:

## **1. Create More Transparency In Gasoline Markets And the Energy Industry**

- Repeal the gasoline price caps as contained in Act 242 (Session Laws Hawaii 2004) - Replace with systemic industry monitoring system.
- Increase competition by increasing transparency of industry information for all types of fuel producers and handlers with improved data collection and reporting requirements to establish an effective statewide watchdog monitoring system.
- Provide consumers with information as to the cost of importing the product to compare with market price (import parity price) – increases competition.
- Repeal restrictions on the vertical integration of gasoline refiners and wholesalers, and retailers, first instituted in Hawaii in 1991. In 2000, a Federal Trade Commission staff analysis found that these divorcement policies actually harm consumers, because they have raised gasoline prices. This econometric analysis examined the effects of divorcement policies in Hawaii, Connecticut, Delaware, Maryland, Nevada, Virginia, and the District of Columbia. The analysis concluded that divorcement added about 2.7¢ cents per gallon at retail (self-serve) on regular unleaded gasoline, costing consumers an estimated \$100,000,000 annually.
- Improve the State's data and analytic capabilities and understanding of energy industry and systems, by all of the state's energy-related agencies – DBEDT, Public Utilities Commission, and Consumer Advocate. Provide accurate, reliable information for informed policy and regulatory decisions, energy emergency planning, and assessments of renewable energy, energy efficiency, and fossil fuels in all sectors.

Understanding Hawaii's energy markets and its energy industry is not just about prices – it is about energy and economic security. With nearly 90% of all our energy coming from imported oil, state government has a duty to protect Hawaii's energy and economic security. The kind of energy industry data and information needed has previously been unavailable on a systematic basis. This package aims to obtain it and use it judiciously.

## **2. Develop And Increase Use Of Alternate Transportation Fuels**

- Establish statewide Renewable Fuels Standard (RFS) – by December 31, 2020, 20% of highway fuel demand be provided by renewable fuels such as ethanol, biodiesel, or

hydrogen produced from renewable resources. Interim standards would be 10% in 2010 and 15% in 2015.

- Allow State agencies to take the lead in purchasing energy efficient vehicles and vehicles that use alternative fuels. Beginning July 1, 2006, at least 20% of newly purchased light duty vehicles acquired by covered fleets shall be energy efficient and alternative fuel vehicles. Covered State fleets will comply with the federal requirement for vehicles to be capable of using alternative fuels.
- Provide alternative fuel and highly efficient vehicles with special license plates and free vehicle registration.
- Extend the excise tax exemption for alcohol fuels.
- Prepare a statewide multi-fuel biofuels production assessment to quantify the potential for ethanol and biodiesel production in Hawaii – provide long term comprehensive evaluation of potential feedstocks, technologies and economics of various types of renewable fuel sources. Appropriate \$200,000 to prepare study.

### **3. Stimulate State and Consumer Energy Efficiency**

- Retrofit and renovate existing State facilities using energy efficient design and equipment - agencies will be directed to build new facilities to meet energy efficient standards and procure recycle materials. Appropriate from General Funds (Total: \$630,000) for energy efficiency and renewable energy programs to include: Two (2) budgeted positions Renewable Energy Analyst, and Energy Efficiency Analyst (Salaries & fringes: \$130,000); and, program funding (\$500,000).
- Remove the sunset date (1/1/2008) for renewable tax credits –
  - Increase the dollar cap from \$1,750 to \$10,000 for single-family residential taxpayers who purchase and place into service photovoltaic systems.
  - Increase the dollar cap from \$350 to \$1,000 for multi-residential taxpayers who purchase and place into service solar water heating or photovoltaic systems.
  - Increase the dollar cap from \$250,000 to \$500,000 for commercial taxpayers who purchase and place into service a solar energy system.
  - Cost estimate – estimated \$1.5 M more than presently paid out (\$1.75M).
- Redirect demand side management fund currently collected by the utilities companies to utilize the majority of the funds for initiatives to promote the use of renewable energy products and services to reduce Hawaii's dependence on oil – establishing a Public Benefits Charge. The public utility commission approved the first demand-side management programs in 1995. In 2003 the public utility commission approved

Hawaiian Electric Company's request to impose a \$.0023 per kilowatt-hour surcharge, which raised approximately \$16,600,000. Only \$6,200,000, (37 percent of the surcharge) was used for demand-side management programs, with the majority of the funds (63 percent - \$10,400,000) going to the electric company for lost sales recovery payments and shareholder incentives. Cost to administer the program by a third party will be taken out of funds collected.

- Request that the Public Utilities Commission consider and encourage the utilities to adopt advanced pricing tariffs for all electrical customers. This kind of pricing aims to lower consumer costs, reduce production costs by reducing reserve power generation requirements, and increase electric system reliability. Across the country, utilities have cost-effectively achieved from 7 to 23% reductions of peak electric system demand load. (Letter request by Governor to PUC.)

#### **4. Significantly Increase Use of Renewable Energy Resources**

- Strengthen the Renewable Portfolio Standard for electricity production – each utility company that sells electricity shall establish a renewable portfolio standard (10% by 2010, 15% by 2015, and 20% by 2020). Subjects utilities to penalties, if the PUC determines the targets have not been met.
- To encourage and facilitate renewable energy development and streamline permit process, Department of Land and Natural Resources is to complete a comprehensive inventory of state lands available for renewable energy, and establish renewable energy resource development sub-zones. Appropriates \$200,000.
- The State's Department of Agriculture is to develop programs jointly with Hawaii's farmers to encourage energy crop production and use of bioresidues for energy production, and develop funding from the Farm Bill. Appropriates \$150,000.
- Share oil price risk with utility.
- De-link renewable price from oil price.

#### **5. Establish Hawaii as Leader in Hydrogen Production**

- Establish a world class renewable hydrogen program – The State's combination of abundant renewable resources, high fossil fuel prices, limited geographic area and recognized expertise in hydrogen research and development makes Hawaii an ideal leader for hydrogen production. The hydrogen program would develop hydrogen education and outreach programs to accelerate use of renewable energy to produce hydrogen and create public private partnerships to expand development. Appropriate \$750,000 requested to include: Three (3) budgeted positions (Hydrogen Program Manager, Hydrogen Program

Specialist, and Hydrogen Project Specialist (Salaries & fringes: \$250,000)); and, program funding (\$500,000) to manage and conduct hydrogen energy program activities; e.g., formation of partnerships, technical analyses, and project implementation.

- Establish seed capital fund of \$10M to leverage federal funding and partner with private investments to establish Hawaii's energy self-sufficiency.

### **The Vision – Hawaii, the World's Renewable Hydrogen Energy Leader**

Hawaii's unique focus is on production of hydrogen using renewable energy resources, not conversion of hydrogen from fossil fuels. This vision will secure a competitive niche for Hawaii in the context of larger national and global initiatives.

This unique strategy will bring together private industry, the best minds in our research community, and government at all levels to attract the necessary additional investments of dollars and expertise to Hawaii. At the same time, we will be fully developing our renewable energy resources. This is an innovative "no regrets" renewable energy development approach to accelerate the development of Hawaii's indigenous energy assets and reduce Hawaii's precarious dependence on imported fuels.

In the long-term this initiative could convert Hawaii from an energy importer to an energy exporter. With this comprehensive, integrated energy policy package Hawaii is positioning itself to become the world's leader in renewable hydrogen energy.

### **The Results**

**The Lingle Administration's energy package provides clean, reliable, affordable, and secure energy for today. It does not stop there. In light of the increasingly competitive and insecure global oil market, this package aims to ensure Hawaii's own clean, reliable, affordable, renewable, and best of all "homegrown", energy for tomorrow.**

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