

Three Hawai`i Biorefineries Planned

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--By Henry Curtis

Three biofuel refineries are being proposed for Hawai`i. Gay & Robinson Ag-Energy LLC has proposed building an ethanol plant on Kaua`i. BlueEarth Maui Biodiesel LLC has proposed a biorefinery on Maui, and Imperium Renewables, Inc. has proposed a biodiesel refinery on O`ahu..

Gay & Robinson Ag-Energy LLC

Gay & Robinson (Kaua`i) has formed a partnership with Pacific West Energy LLC (Vancouver, Wash. based) to form Gay & Robinson Ag-Energy LLC which will produce 12 million gallons per year of ethanol using sugar juice and molasses as feedstock.

According to the air permit application filed with the Hawai`i Department of Health, the company will use fossil fuels, preferably imported Australian coal, to convert biomass into ethanol. The coal represents 57-62 percent of the energy content of the resulting ethanol. The ethanol will be blended with petroleum and sold as gasoline.

Environmentalists argued that the 10 percent ethanol requirement for gasoline will mean that each gallon of gasoline will contain 90 percent petroleum, 6 percent coal, and 4 percent biomass. Some environmentalists favored using renewable energy to convert the biomass into ethanol. The Hawai`i Department of Health ignored their pleas as well as those from the Kaua`i community, and approved the air permit.

Gay & Robinson was able to amend the state law in 2006, so that all of the ethanol, instead of just the 40 percent from biomass, counts as renewable energy.

BlueEarth Maui Biodiesel LLC

BlueEarth Maui Biodiesel LLC is a brand new company that has not yet incorporated. Its parent companies are BlueEarth Biofuels LLC, a holding company with no assets(;) and a non-existent subsidiary of Hawaiian Electric Company (HECO).

BlueEarth Maui Biodiesel LLC received permission from the state legislature to float \$59 million in Special Purpose Revenue Bonds, providing that it can show the Hawai`i Department of Business, Economic Development and Tourism (DBEDT) that its importation of palm oil meets a higher sustainability standard than any international standard yet developed.

Without talking with any local environmental groups, HECO brought in the Natural Resources Defense Council (NRDC), to help them develop sustainable standards for palm oil, despite the fact that NRDC has no expertise in palm oil issues or knowledge of Indonesia, the proposed exporter of palm oil to Hawai`i. NRDC and HECO released a Draft Report that suggested modifying the standards established by the Roundtable on Sustainable Palm Oil (RSPO). The RSPO has 39 sustainability criteria. NRDC proposed that any entity that meets 6 specific standards, and is working towards adopting the other 33, should be considered producing sustainable palm oil. Two criteria that producers should be working towards are "free and prior informed consent of indigenous communities" and "not doing business with countries that have no child labor laws".

Imperium Renewables, Inc (IRI)

Imperium Renewables, Inc (IRI) is a holding company with one operational biofuel refinery, Seattle Biodiesel LLC which was founded in 2004 and operates a 5 million gallon per year refinery. IRI is planning to build four 100 million gallons per year biorefineries by the end of 2008, located in O`ahu, Hawai`i; Seattle; Maryland, and Argentina. With an aggregate nameplate capacity of 405 MGY, IRI would be the largest biodiesel producer in the United States.

IRI's CEO is Martin Tobias, founder and seller of a company which encoded audio and video for web-based applications. IRI's chief financial officer is Mark Stolzman, a former senior vice president of finance and business development at Starbucks Corp.

Imperium Renewable Inc filed an S-1 Form with the U.S. Securities and Exchange Commission on May 23, 2007. They stated: "We began our business in 2004 ... we have a limited operating history from which you can evaluate our business and prospects. We have generated net losses and negative cash flow from operations since we commenced our operations. ... We expect to incur increasing net losses and negative cash flow from operations through at least the end of 2007 and possibly in future periods"

Imperium Renewable Inc. added: "According to the NBB [National Biodiesel Board], as of January 31, 2007, there were 105 biodiesel production facilities in operation in the U.S. with reported aggregate annual production capacity of approximately 864 million gallons and 85 facilities under construction or expansion with expected additional annual production capacity of approximately 1.7 billion gallons. All of these facilities currently, or will in the future, compete with us for feedstocks and customers. ... we will face competition from international biodiesel suppliers outside the U.S. if we attempt to sell into international markets"

Imperium Renewable Inc noted: "The U.S. biodiesel industry is highly dependent on a mix of federal and state legislation and regulation and any changes in legislation or regulation could harm our business and financial condition. ... Our gross margin depends principally on the spread between biodiesel sales prices and vegetable oil prices. For example, in 2005 and the first half of 2006, the spread between biodiesel and soybean prices was at a historically high level, driven in large part by high crude oil and diesel prices and low soybean oil prices resulting from high soybean oil yields. However, since September 2006, soybean prices have increased substantially, resulting in a lower gross margin for our biodiesel. Any increase or reduction in the spread between biodiesel and vegetable oil prices, whether as a result of a change in vegetable oil prices or biodiesel prices, will have an effect on our financial performance."

IRI published an Environmental Assessment for its proposed Kalaehoa Harbor facility on O`ahu. Only one community group, Life of the Land, asked any questions. The Final Environmental Assessment has been accepted, and the next hurdle will be for IRI to go before the advisory-only Honolulu Planning Commission on July 31, 2007 regarding a Shoreline Management Area permit (file number 2007/SMA-35).

Palm Oil

The cheapest feedstock for biorefineries is palm oil. Over 85 percent of the world palm oil is grown in Indonesia and Malaysia.

The Wall Street Journal, on the front page of its December 5, 2006 issue, wrote a story entitled "The Growing Danger of Ethanol, Biofuels":

"Investors are pouring billions of dollars into 'renewable' energy sources such as ethanol, biodiesel and solar power that promise to reduce the world's reliance on petroleum. But exploiting these alternatives may produce unintended environmental and economic consequences that offset the expected benefits.

Among the world's most fabled islands, Borneo -- which is divided between Indonesia and Malaysia -- is considered by environmentalists to be one of the last great tropical wildernesses. It's home to rare and unusual species, including the wild orangutan, the clouded leopard and the Sumatran rhinoceros. ... Now, the palm-oil boom threatens what's left.

As fires burn deep into the dry peat soil beneath Indonesia's forests, centuries of carbon trapped in the biomass are released into the atmosphere. A study presented last month at a U.N. Climate Change Conference in Nairobi showed that Indonesia is the world's third-biggest carbon emitter behind the U.S. and China, when emissions from fires and other factors are considered."

EcoNexus has an on-line listing of 130 organizations and 45 individuals who have signed onto a campaign for an immediate moratorium on EU incentives for agrofuels, EU imports of agrofuels and EU agroenergy monocultures. The groups include five from the U.S.: The Dogwood Alliance, Ecological Internet, Global Justice Ecology Project, Life of the Land, and The Borneo Project.

Life of the Land maintains an on-line Analysis of Hawaiian Electric Company's proposal to Import Palm Oil to Make Biodiesel for Electricity, written by KAHEA: The Hawaiian-Environmental Alliance, `Ilio`ulaokalani Coalition, Sierra Club - Maui, Environmental Defense, and Life of the Land. Over 50 organizations have signed onto the campaign.

Recognizing the growing environmental concern, IRI informed the SEC: "Environmental and other groups have recently expressed concern that the growing demand for palm oil may result in the clearing of rainforests in Southeast Asia and could threaten animal and plant species in that region. Palm oil growers, processors and environmental groups are working to develop regulations that would attempt to balance the supply of palm oil against these other ecological issues. Public concerns have also been raised concerning the use of soybeans as an alternative fuel feedstock."

IRI is a party to the Roundtable on Sustainable Palm Oil (RSPO). Hawaiian Electric and BlueEarth Maui Biodiesel are not. Rather Hawaiian Electric and BlueEarth Maui Biodiesel are working with the NRDC to develop weaker standards.

Cargill

IRI has signed a three-year contract with Cargill for delivery of palm oil to its production facilities, which they believe will be sufficient to provide up to 100% of their palm oil feedstock requirements through 2010.

According to the Cargill website: "Cargill owns and operates palm plantations in Indonesia and Papua New Guinea (PNG), palm refineries in several nations and processes and markets palm products worldwide. Cargill believes that palm should be produced sustainably and is committed to responsible and sustainable palm production on its own palm plantations." (www.cargill.com/news/issues/palmoilissue.htm)

Friends of the Earth Netherlands released a report on July 3, 2007 stating that "Wilmar, the world's biggest trader in palm oil, is illegally logging rainforests, setting forests on fire and violating the rights of local communities in Indonesia ... Wilmar supplies multinational companies such as Unilever, Nestle and Cargill. (www.regenwald.org/news.php?id=731)

Eric Holt-Gimenez (FoodFirst), Executive Director of FoodFirst/Institute for Food and Development Policy states: "The big three (ADM-Cargill-Monsanto) are already forging a custom, genetic-processing-transport alliance that will sew up ethanol production, processing, and sale.... None of these companies are famous for sharing the farm dollar with farmers. ... All three have been implicated or heavily fined for anti-trust and other illegal activities. It is hard to imagine farmers benefiting when the powerful triad controls the genetically-modified seeds, the custom processing technology, and the transport for corn and biofuels." (www.foodfirst.org/node/1604)

Algae

Some algae varieties are 30-40 percent oil, some varieties grow in fresh water, others in ocean water. A few researchers at the Natural Energy Laboratory of Hawaii Authority (NELHA) and Hawaii Natural Energy Institute (HNEI) and people such as C. Barry Raleigh, Retired Dean of the University of Hawaii School of Ocean and Earth Science and Technology (SOEST) believe that algae can supply all of our energy needs. Dr Mae-Won Ho (Green Algae for Carbon Capture & Biodiesel, ISIS. 03/03/06)

The US National Renewable Energy Laboratory (NREL) had a research project from 1978 to 1996 on creating renewable transportation fuel with algae making use of waste CO₂ from coal fired power plants. The project, led by NREL scientist John Sheehan, was funded at \$25.05M over the 20-year period, compared to the total spending under the Biofuels Program over the same period of \$459M. It resulted in a collection of 300 species of green algae and diatoms, now housed in the University of Hawai'i and still available to researchers. Although some technical and economic problems remained to be solved, it was estimated that just 15,000 square miles (or 3.8 m ha) of desert (the Sonoran desert in California and Arizona is more than 8 times that size) could grow enough algae to replace nearly all of the nation's current diesel requirements, and algae use far less water than traditional oilseed crops. (www.isis.org.uk/GAFCCAB.php)

In June, 2007, IRI signed a deal with Solazyme, a biotech company, to grow proprietary strains of microalgae, extract the oil, and deliver it to Imperium, for conversion into biofuel. The Solazyme website states: "Solazyme believes that its own intellectual property and in-licensed technology solidify its position as the industry leader in genetic engineering for the commercialization of optimized photosynthetic microbes. Solazyme's bioprospecting and acquisition activities have yielded a large and genetically diverse collection of photosynthetic microorganisms."

Summary

Gay & Robinson plans to create ethanol that derives over half of its energy from coal but is labeled 100 percent green. BlueEarth plans to import palm oil from companies that have not achieved, but claim to be working towards "free and prior informed consent of indigenous communities" and claim to be working towards ending the exploitation of children. Imperium Renewables will accept the guidelines established by the Roundtable on Sustainable Palm Oil (RSPO), but will purchase palm oil from companies like Cargill and Wilmar which have horrendous environmental and cultural track records in the Third World. Imperium will also utilize genetically engineered crops developed by Solazyme.

Biofuels from virgin rainforests are unsustainable. The use of these biofuels is a smoke-screen that attempts to solve one problem by creating many additional problems, such as the global climate crisis and human rights disasters - such as the displacement of indigenous people.

Instead, the real question is why we aren't using our local agricultural lands for food production, our locally abundant natural resources, such as the sun, the wind and the ocean for electricity; and our waste material for biodiesel for transportation. We can be 100 percent agriculturally and energy self-reliant, if that is truly our goal.

The Hawai'i State Constitution was amended in 1978 requiring energy and agricultural self-sufficiency. This is not a pie-in-the sky idea, Hawai'i is blessed with a great abundance and variety of renewable energy resources, fertile agricultural land, and four growing seasons a year.

But do we have the political will to make energy and food self-reliance a reality?