



Hawaii
Bioenergy
Workshop

Growing Hawai'i's Fuel

Hilton Hawaiian Village

Friday October 27, 2006

8:00 am – 4:30pm

Hawaii Agriculture Conference



Goals of the HAWAII AGRICULTURE BIOENERGY WORKSHOP

The goals of this workshop are to inform stakeholders about recent legislation, publicize federal and state incentives and funding opportunities, increase collaboration and develop action steps to encourage bioenergy crop production. Participants include farmers, landowners, the business community, renewable energy advocates and others who seek to stimulate expansion of Hawaii's bioenergy industry.

Workshop organizers include the Hawaii Department of Agriculture, Department of Business, Economic Development & Tourism (DBEDT), U.S. Department of Agriculture - Rural Development, University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR), Hawaii Natural Energy Institute (HNEI) the Hawaiian Electric Company (HECO), and the Hawaii Energy Policy Forum (HEPF). Sponsorship funding is provided by HECO, DBEDT, HEPF, and the U.S. Department of Energy.



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www.ctahr.hawaii.edu



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www.hawaiiag.org/hdoa



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www.hnei.hawaii.edu



U.S. Department of Energy

The mission of the U.S. Department of Energy's Office of Energy Efficiency and Renewable energy is to strengthen America's energy security, environmental quality, and economic vitality in public-private partnerships that: enhance energy efficiency and productivity; bring clean, reliable and affordable energy technologies to the marketplace; and make a difference in the everyday lives of Americans by enhancing their energy choices and their quality of life.
www.eere.energy.gov/



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www.rurdev.usda.gov



HAWAII BIOENERGY WORKSHOP

Hilton Hawaiian Village
October 27, 2006 (Friday)

AGENDA

Tapa Tower, Palace Lounge

7:30-8:30 am Registration, Continental Breakfast

Tapa Tower, Tapa Ballroom III

- 8:30 am **Emcee:** Mae Nakahata, Vice President, Hawaii Farm Bureau Federation
- 8:35 am **Welcome:** Theodore E. Liu, Director of the Department of Business, Economic Development & Tourism
- 8:40 am **Opening Message:** "The Case for Bioenergy" E. Alan Kennett, Gay and Robinson Sugar Co.
- 9:00 am **Panel: The Demand for Bioenergy Now and Future**
Moderator – Maurice Kaya, Department of Business, Economic Development & Tourism
- Karl Stahlkopf, Hawaiian Electric Company
 - Jeff Deren, Kauai Island Utility Cooperative
 - Larry Adams, Aloha Petroleum, Ltd.
 - Bob King, Pacific Biodiesel Inc.
 - Lee Jakeway, Hawaiian Commercial & Sugar Company
- 10:20 am **Break**
- 10:30 am **Panel: Resources to Meet the Challenge**
Financing and cooperative models - Tim O'Connell, United State Department of Agriculture
– Rural Development
Energy policies, incentives, and information - Maria Tome, Department of Business,
Economic Development & Tourism
- 11:15 am **Panel: Hawaii Crop Production Opportunities - What grows, what flows, what burns**
Moderator – Andrew Hashimoto, University of Hawaii at Manoa College of Tropical Agriculture and Human Resources (UHM-CTAHR)
- Charles Kinoshita, UHM-CTAHR
 - Scott Turn, Hawaii Natural Energy Institute
 - Michael Poteet, Hawaii Agriculture Research Center
- 12:15 pm **Recommendations for Development & Conversion of Fuel Crops (HCR 195 Report)**
Kyle Datta, Rocky Mountain Institute
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Tapa Tower, Tapa Ballroom II

12:30-1:30 pm Networking Lunch

Tapa Tower, Iolani Suites 1-4 & Tapa Ballroom III

- 1:45 pm **Breakout Sessions:**
- *Economic Analysis and Technical Feasibility, Session chair:* Scott Turn
 - *Business Partnering, Session chair:* Tim O'Connell
 - *Production Resources, Session chair:* Mae Nakahata
-

Tapa Tower, Tapa Ballroom III

- 3:00 pm **Plenary**
Breakout session summaries, discussion and action plan
- 4:00 pm **Conclusion and Close**

Session Information and Bios

Emcee: Mae Nakahata, Vice President of the Hawaii Farm Bureau Federation, graduated from the University of Hawaii at Hilo. Nakahata began her career at the Mauna Kea Sugar Company on the Big Island, and has spent the last 20 years at the Hawaiian Commercial & Sugar Company on Maui, currently as Director of Crop Control.

Welcome Message: Theodore E Liu, Director of the State Department of Business, Economic Development & Tourism (DBEDT), provides overall direction to the implementation of DBEDT's mission, which is to support business, create jobs, and improve Hawaii's standard of living by diversifying the economy, expanding existing businesses, and attracting new economic activity. He was co-founder of a Hawaii-based private equity firm focused on venture capital investment, middle market equity, debt and strategic transactions and corporate finance advisory services. He has worked internationally in financial, legal and publishing institutions and has a JD degree from New York University School of Law and graduated with a BGS Degree, with Honors, from University of Michigan.

Opening Message: E. Alan Kennett has been President and General Manger of Gay & Robinson since 1994. He has held various positions in the Hawaii sugar industry with C. Brewer and Co., Ltd. between 1976 and 1994. Prior to that, he managed sugar operations in Africa, the United Kingdom and the West Indies. Kennett is a graduate of Walton Technical College and the Liverpool College of Technology and completed Cornell's Executive Development Program.



Panel: The Demand for Bioenergy Now and Future

What are the current and potential markets for Hawaii biomass energy crops?

Moderator – Maurice Kaya, PE, Director of the Energy program at DBEDT, has led efforts to implement renewable energy and energy efficiency programs in the state, including the Hawaii Energy Strategy. These programs promote appropriate technologies for business growth in Hawaii and sustainable technologies within the Asia-Pacific region. He has been recognized with numerous awards throughout his career, including twice being named as the Manager of the Year for the Hawaii DBEDT. Kaya is a Registered Professional Engineer in Hawaii and Guam.

Karl E. Stahlkopf, PhD, is Senior VP, Energy Solutions and Chief Technology Officer of the Hawaiian Electric Company, Inc. and President of its subsidiary, Renewable Hawaii, Inc. He is responsible for formulating and executing HECO's short and long-term energy technology strategies and development and implementation of conservation, demand side management, and renewable and alternative energy projects. In addition, he has responsibility for all customer service installations. He received a BS degree in Electrical Engineering and a BS in Naval Science from the University of Wisconsin, Madison, and an MS and PhD in Nuclear Engineering from the University of California, Berkeley.

Jeff Deren is the staff engineer at Kauai Island Utility Cooperative working on the company's long term planning and the implementation of renewable energy projects. Previously he was a mechanical engineer for a large Californian utility working in power generation, R&D, and natural gas transportation. He also was the Engineering Officer aboard various U.S. merchant ships. He has a BS in Marine Engineering, U.S. Merchant Marine Academy, NY, an MS in Mechanical Engineering, University of Wisconsin, Madison and an MBA, St. Mary's College, Moraga, CA.

Larry Adams is the Director of Marketing and Sales for Aloha Petroleum, Ltd. Prior to joining Aloha Petroleum in 2005, he was the President and Owner of L.G. Adams Enterprises and was the General Manager for Credit Card Marketing for Shell Oil Company. Mr. Adams is a graduate of Troy State University and completed the Executive Education Series at the Wharton School of Business.

Robert King is the principal founder and president of Pacific Biodiesel, Inc. and owner of King Diesel in Hawaii. One of the first commercial biodiesel producers in the United States, the Maui operation boasts the first retail biodiesel pump in the country. Pacific Biodiesel now owns and operates two biodiesel production facilities in Hawaii – one on Maui and the other on Oahu. Most of Pacific

Biodiesel's Hawaii production is currently processed from waste vegetable oil as the biodiesel plant was first developed by King to help alleviate the dumping of waste cooking oil in the landfill. The company is also researching prospects for oilseed crop production. In addition to its own Hawaii-based production facilities, Pacific Biodiesel, Inc. has built commercial biodiesel production facilities for clients in Japan, Virginia, Nevada, Pennsylvania, Maryland and Texas.

Lee Jakeway, PE, is Director of Energy Development and Planning at the Hawaiian Commercial & Sugar Co, a division of Alexander & Baldwin, Inc. He has been with HC&S for over 7 years and previous to that was with the former Hawaiian Sugar Planters' Association on Oahu for 15 years. He obtained degrees in Agricultural Engineering from Michigan State University in 1975 and the University of Hawaii in 1977. He is a registered Professional Engineer in the State of Hawaii. His specialty areas are biomass recovery and conversion to energy products. His current initiatives at HC&S include cane trash recovery for biomass boiler fuel and ethanol production from sugarcane.



Panel: Resources to Meet the Challenge

Hear about State and Federal programs available to support the development of biofuels including loan and grant opportunities. Find out how other farmers are utilizing the cooperative business model to capitalize on the biofuels opportunity for adding value to crops.

Timothy W. O'Connell is the Assistant to the USDA State Director/Rural Energy Coordinator/Cooperative Development Specialist. Tim provides technical assistance to existing cooperatives and to groups wanting to form cooperatives in the State of Hawaii and the Western Pacific. Technical assistance includes financial analysis, training, planning, and organizational development. He also manages the Renewable Energy Systems and Energy Efficiency Improvements Guaranteed Loan and Grant program for USDA. Tim earned a BS in Agricultural Economics from Washington State University. He is a graduate of the Agricultural Leadership Foundation of Hawaii and currently serves as the Secretary to the Foundation.

Maria Tome, PE, is the Alternate Energy Engineer with the State of Hawaii, DBEDT. She has been involved with the implementation of the State law that requires Hawaii's gasoline to contain 10% ethanol; coordinated activities under the State's Renewable Energy Program Measure and the Transportation Energy Supply, Demand, and Planning Program Measure; and served as Project Manager for the Transportation Energy Strategy Development Project for the State of Hawaii. She has worked in various capacities on many task forces relating to clean and renewable energy for Hawaii. She is a registered Professional Engineer in the State of Hawaii.



Panel: Hawaii Crop Production Opportunities - What Grows, What Flows, What Burns!

Bioenergy in Hawaii likely will be served by a variety of energy products from a number of different energy crops and bio-residues. Learn which types of energy crops and conversion technologies show the greatest potential for contributing to Hawaii's energy mix and what kinds of R&D are needed to increase that contribution.

Moderator – Andrew Hashimoto, PhD, is the Dean and Director of the College of Tropical Agriculture and Human Resources (CTAHR) at the University of Hawaii. He is also a Professor of Molecular Biosciences and Biosystems Engineering at UH Manoa. Dean Hashimoto earned his BS in Civil Engineering and his MS in Environmental Engineering, both from Purdue University. He received his PhD in Agricultural Engineering from Cornell University. Since arriving at CTAHR in 2000, Dean Hashimoto has been the Principal Investigator of research grants and contracts on agricultural development, diversification, education and training. His fields of specialization are Bioconversion Processes, Ethanol Fuels, Anaerobic Digestion, and Waste Management Systems.

Charles Kinoshita, PE, PhD, is Associate Dean for Academic and Student Affairs, CTAHR. In his 15 years at the University, he has been Principal Investigator for numerous research programs involving conversion of biomass into fuels and higher-valued products, bioremediation, physical and biological sequestration of carbon dioxide, and other projects dealing with renewable energy and

the environment. He teaches or has taught courses in transport phenomena, thermosciences, and engineering design in the Bioengineering and Mechanical Engineering programs at the University of Hawaii, and has trained practicing engineers through various professional societies. Prior to joining the University, Dr. Kinoshita served at the Experiment Station of the Hawaiian Sugar Planters' Association (now the Hawaii Agriculture Research Center) as project engineer and then as head of the Sugar Technology and Engineering Departments.

Scott Turn, PhD, is an Associate Researcher in the Hawaii Natural Energy Institute at the University of Hawaii. He works in the areas of biomass resource assessment, biomass thermochemical conversion, and product gas cleaning. Dr. Turn earned a BS in Agricultural Engineering from Pennsylvania State University, an MS in Agricultural Engineering from the University of Hawaii, and his PhD in Agricultural Engineering from the University of California, Davis.

Michael Poteet is an Agronomist with Hawaii Agriculture Research Center. He conducts work in weed control, soil fertility, and crop management with Hawaii's two sugarcane plantations. Poteet has also conducted extensive background research into oil crops for the Hawaii Department of Agriculture, culminating in the Biodiesel Crop Implementation in Hawaii report that has recently been submitted to the State. His other focus areas include conservation practices, energy crops, and rural development. He has an MS in Soil Science from Penn State University.



Recommendations for Development and Conversion of Fuel Crops (HCR 195 Report)

Kyle Datta is Senior Director of Rocky Mountain Institute (RMI) Research & Consulting Group. His expertise includes corporate strategy, sustainable development, market access strategy, pricing strategy, environmental strategy, and supply chain management. He has directed assignments across all aspects of the energy industry, including oil, gas, power, chemicals, renewable energy, and energy services. He leads RMI's team that is currently updating Hawaii's Energy Strategy. As a part of that project, RMI is preparing a report for the legislature in response to HCR 195, 2006, requesting recommendations for development and conversion of fuel crops for electricity generation. He is founder and president of New Energy Partners, a renewable energy development company with projects focused in Hawaii and the Western United States.



Breakout Sessions:

Economic Analysis and Technical Feasibility

Session chair: Dr. Scott Turn

Join us in a facilitated discussion to identify the technical and economic barriers that are hampering greater penetration of bioenergy into Hawaii's energy mix and to identify steps that might be taken to overcome those barriers. Participants will be invited to share ideas and potential solutions that could lead to greater production of energy crops and their conversion into biofuels and electricity within Hawaii's diverse agricultural lands.

Business Partnering

Session chair: Tim O'Connell

Join us in a facilitated discussion on the linkages and partnerships necessary to develop an economically viable biofuels industry for Hawaii. Participants will be invited to share ideas and next steps for building collaborative partnerships. This breakout session builds on the morning panel sessions for more in-depth discussion and participant interaction.

Production Resources

Session chair: Mae Nakahata

Join us in a facilitated discussion on land, water, and other resource issues. Participants will be invited to share ideas and solutions regarding the existing and needed resources to develop an economically viable biofuels industry for Hawaii. This breakout session builds on the morning panel sessions for more in-depth discussion and participant interaction.

Mahalo to Leeway Enterprises for facilitating the sessions.



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