

# Hawai'i Bioenergy Master Plan Stakeholder Meeting April 2, 2009



U.S. Department of  
**ENERGY**



[www.hnei.hawaii.edu/bmpp/home.asp](http://www.hnei.hawaii.edu/bmpp/home.asp)

# **Hawaii Bioenergy Master Plan Stakeholders Meeting Project Background**

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April 2, 2009**



# Hawaii Bioenergy Master Plan

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- Legislatively mandated in 2007
- Objective: *The primary objective of the bioenergy master plan shall be to develop a Hawaii renewable biofuels program to manage the State's transition to energy self-sufficiency based in part on biofuels for power generation and transportation.*



# .... address the following outcomes

- 1. Strategic partnerships for the research, development, testing, and deployment of renewable biofuels technologies and production of biomass crops;**
- 2. Evaluation of Hawaii's potential to rely on biofuels as a significant renewable energy resource;**
- 3. Biofuels demonstration projects, including infrastructure for production, storage, and transportation of biofuels;**
- 4. Promotion of Hawaii's renewable biofuels resources to potential partners and investors for development in Hawaii as well as for export purposes; and**
- 5. A plan or roadmap to implement commercially viable biofuels development.”**



# .... address the following issues

1. ***Specific objectives and timelines;***
2. ***Water resources;***
3. ***Land resources;***
4. ***Distribution infrastructure for both marine and land;***
5. ***Labor resources and issues;***
6. ***Technology to develop bioenergy feedstock and biofuels;***
7. ***Permitting;***
8. ***Financial incentives and barriers and other funding;***
9. ***Business partnering;***
10. ***Policy requirements necessary for implementation of the master plan; and***
11. ***Identification and analysis of the impacts of transitioning to a bioenergy economy while considering applicable environmental concerns.”***



# Five Part Biofuel Value Chain



<http://www1.eere.energy.gov/biomass/pdfs/nbap.pdf>



# ***OUTCOME I: Evaluation of Hawaii's potential to rely on biofuels as a significant renewable energy resource***

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- 1. Water resources***
- 2. Land resources***
- 3. Distribution infrastructure for both marine and land***
- 4. Labor resources and issues***
- 5. Technology to develop bioenergy feedstock and biofuels***
- 6. Integration and evaluation***



## ***OUTCOME II: Plan or roadmap to implement commercially viable biofuels development***

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- 1. Permitting***
- 2. Financial incentives and barriers and other funding***
- 3. Business partnering***
- 4. Identification and analysis of the impacts of transitioning to a bioenergy economy while considering applicable environmental concerns***
- 5. Integration and plan development***



# Remaining Activities

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- **OUTCOME III**: Strategic partnerships for the research, development, testing, and deployment of renewable biofuels technologies and production of biomass crops
- **OUTCOME IV**: Biofuels demonstration projects, including infrastructure for production, storage, and transportation of biofuels
- **OUTCOME V**: Promotion of Hawaii's renewable biofuels resources to potential partners and investors for development in Hawaii as well as for export purposes



# ***OUTCOME I: Evaluation of Hawaii's potential to rely on biofuels as a significant renewable energy resource***

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## **Water resources**

***Ali Fares, UH Department of Natural Resources and Environmental Management***

***Aly El-Kadi, UH Water Resources Research Center***

***William Tam, Attorney at Law***

***Denise Antolini, Richelle Thomson, UH Law School***

## **Land resources**

***Richard Ogoshi, UH Dept. of Tropical Plants and Soil Sciences***

***Carl Evensen, Ali Fares, UH Department of Natural Resources and Environmental Management***

***William Tam, Attorney at Law***

***Denise Antolini, Richelle Thomson, UH Law School***



# ***OUTCOME I: Evaluation of Hawaii's potential to rely on biofuels as a significant renewable energy resource***

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## **Infrastructure (marine and land)**

***Manfred Zapka, Marc M. Siah & Associates, Inc., Engineering Consultants***

## **Labor**

***James Spencer, UH Globalization Research Center  
ann Yamamoto, Consultant and former Exec. Director of  
Workforce Development Council, DLIR***

## **Technology**

***Samir Khanal & Charles Kinoshita, UH Dept of Molecular  
Biosciences and Bioengineering  
Scott Turn, UH HNEI***

## **Integration and evaluation**

**Team**



# ***OUTCOME II: Plan or roadmap to implement commercially viable biofuels development***

## **Permitting**

***Manfred Zapka, Marc M. Siah & Associates, Inc.***

## **Financial incentives**

***Denise Konan, Iman Nasser, Craig Cole, Claudia Clement, UH Dept. of Economics***

## **Business partnering**

***Steven Chiang, Janel Yamamoto, UH Agribusiness Incubator Program  
Charles Kinoshita, UH Dept. of Molecular Biosciences and Bioengineering***

## **Impacts**

***Makena Coffman, UH Department of Urban & Regional Planning  
Andrew Tomlinson, Pacific Consulting Services, Inc.  
Curtis Daehler, UH Department of Botany  
Michael Hamnett, HI Energy Policy Forum/Social Science Research Center***

## **Integration and plan development**

***Team***



# Working Scenario

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- **Displacement of 20% of 2007 transportation (gasoline and diesel) and power generation (diesel and fuel oil) fuel use**
- **Bioenergy projects identified by HECO in HCEI agreement of 10-20-08**
- **Bioenergy projects identified by KIUC**



# Project Timeline

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- **04/02/09 – Stakeholders meetings**
- **5/31/09 – Draft final task reports due to HNEI**
- **6/30/09 – Draft plan due to DBEDT**
- **7/09 – Draft plan review**
- **10/09 – Final draft due to DBEDT**
- **12/09 – Final plan to DBEDT**

