Detailed Work Plan for Development of a Hawai‘i Bioenergy Master Plan

Prepared for the

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By the

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This work plan was originally prepared by the Hawai‘i Natural Energy Institute for submittal as a progress report to the State of Hawai‘i Department of Business, Economic Development and Tourism, in a contract with that organization. Elements of this work plan have been used and are continuing to be used in preparation of the Draft Hawai‘i Bioenergy Master Plan which will be submitted to the U.S. Department of Energy at a later date.

University of Hawaii
Hawaii Natural Energy Institute

BIOENERGY MASTER PLAN
Progress Report and Contract Deliverable
Contract No. 57277

This progress report is submitted to the Department of Business, Economic Development and Tourism (DBEDT) as an account of work conducted through October 31, 2008 pursuant to Contract No. 57277, for services related to the preparation of a Bioenergy Master Plan (Plan) for the State. The Task List for the Plan is enclosed as a contract deliverable.

Background

- *Act 253, SLH 2007*

Recognizing the importance of increased use of renewable biomass energy resources in Hawaii, the 2007 Legislature passed HB 1003 HD3 SD2 CD1, signed into law as Act 253, SLH 2007. Part III of the Act called for the preparation of a bioenergy master plan and appropriated $300,000 for fiscal year 2007-2008 for a cohesive strategy to "set the course for the coordination and implementation of policies and procedures to develop a bioenergy industry in Hawaii."

The Act followed the convening of two statewide bioenergy events in 2006, the Governor's Biofuels Summit and the Ag Bioenergy Workshop. These meetings were held in acknowledgment of the benefits, the complexity, and the challenges of Hawaii-based bioenergy industry development. Meeting participants represented all sectors of the bioenergy industry value chain – biomass production, conversion, distribution and storage, and end use – that are necessary elements of successful industry development.

The increased use of the state's biomass resources for the production of fuels for transportation and electricity can diversify Hawaii's energy supplies and increase energy and economic security and sustainability. Moreover, unlike wind, solar, geothermal, or ocean energy, biofuels can be used in place of liquid fossil fuels with relatively little technology modification by transportation and power generation end users. However, as participants in the 2006 meetings made clear, the development of a bioenergy industry in Hawaii poses significant challenges including limited land and water resources, adequacy of labor, lack of specialized production and distribution infrastructure, potential environmental impacts, and financial risk.

- *Reports to DBEDT and Plan Completion*

The Act, anticipating that preparation of the Plan would start in 2007, provides that DBEDT "shall submit an interim report of its progress, including any proposed legislation to facilitate the finalization of a master plan or support preliminary findings to accelerate the implementation of a bioenergy future for Hawaii, to the legislature no later than twenty days prior to the convening of the regular session of 2008." Further, the Act requires that "The department shall submit a final report, including the bioenergy master plan, as well as any proposed legislation, to the legislature no later than twenty days prior to the convening of the regular session of 2009."

Work on the project formally began in late May 2008. This report to DBEDT, therefore, is an interim report of Plan development in process from late May 2008 through October 31, 2008. The completed Plan will be submitted to DBEDT in final form in mid-December 2009.

In 2006, the Legislature passed SB 2957 SD2 HD2 CD1, signed into law as Act 240, SLH 2006. Act 240 provided funding for DBEDT to "conduct a statewide multi-fuel biofuels production assessment of potential feedstocks and technologies, the economics of the various renewable fuels pathways, and the potential for ethanol, biodiesel, and renewable hydrogen production to contribute to Hawaii's near-, mid-, and long-term energy needs". The two-year project, under contract to Black & Veatch Corporation, will be completed by July 2009. As appropriate, the findings from the assessment will be considered in the final Plan report.

- *Project Funding*

A separate but related program, the Hawaii Clean Energy Initiative (HCEI), is considering regulatory, policy, and technology pathways necessary for the state to achieve a goal of 70% clean energy by 2030. The partnership between the State of Hawaii and the U.S. Department of Energy (USDOE), established in January 2008, will be proposing actions to increase the state's use of efficiency and renewable energy resources and technologies.

To support the State's HCEI goal, the USDOE has supplemented the State funding appropriated for Plan development with a $200,000 award to the Hawaii Natural Energy Institute (HNEI) under its "Hawaii Distributed Energy Resource Technologies for Energy Security" project. With the supplemental Federal support, total funding for the Plan is $500,000.

It should be noted that, despite the increased funding level, a complete and thorough examination of the entire range of issues specified in Act 253 Part III may not be achievable. In particular, several issues with a history of contention or concern – water and land use, environmental impacts, infrastructure, and permitting – should be studied in depth. Available funding will be allocated to cover the many study areas, and, as a result, evaluation of certain issues may be limited. DBEDT had submitted legislative testimony in 2007 requesting funding for each year of a two year project period totaling considerably more than is currently available for Plan preparation.

<u>Bioenergy Master Plan Development and Implementation</u>

Act 253 provides for development of the Plan "that will set the course for the coordination and implementation of policies and procedures to develop a bioenergy industry in Hawaii." Thus, implementation of the Plan is outside the scope of this project.

Specifically, the Act requires DBEDT to prepare the Plan "in consultation with representatives of the relevant stakeholders", and to provide an interim and a final report on the development of the Plan. Accordingly, DBEDT established contract provisions for deliverables in two phases:

1. A Task List for the draft Plan, due November 1, 2008 to DBEDT, and
2. A Plan due to DBEDT as follows:
   - Draft Plan due June 30, 2009

- Final draft Plan due October 15, 2009
- Final Plan due December 12, 2009.

Project management and coordination responsibilities for this multi-component Plan include stakeholder outreach and engagement activities, planning for and conduct of tasks, integration of task findings and recommendations, preparation of the draft and final Plan, and coordination with other initiatives. The stakeholder outreach and engagement activities are summarized in the Task List. The approach to preparation of the Task List follows.

Task List - Approach

The Task List is responsive to three key requirement areas as follows:

I. STATEWIDE COLLABORATION AND ENGAGEMENT OF STAKEHOLDERS.

For many years, the State, with its modern economic roots in plantation agriculture, has recognized the importance of biomass resources for the production of energy in Hawaii, especially the use of bagasse from Hawaii's sugar operations. With the statewide decline in the production of sugar, there has been keen interest in research, development, and commercialization of alternative bioenergy conversion technologies and biomass sources for transportation and electricity generation. A number of studies and assessments have been conducted to promote the use of biomass for energy use. Hawaii is fortunate to have industry experts and research institutions that continue to support industry development.

Importantly, in addition to bioenergy experts, industry development will involve a wide range of stakeholders including the community, landowners, utilities, oil companies, farmers, processors, financial organizations, and distributors. The engagement of these stakeholders across the bioenergy industry value chain – biomass production, conversion, distribution and storage, and end use – is necessary for the successful implementation of the Plan. Accordingly, stakeholder activities conducted in 2008 were as follows:

- *Kickoff Meeting* – May 21, 2008

An all-day kickoff meeting for the Bioenergy Master Plan was held on Wednesday, May 21, 2008, in the auditorium of the State Capitol. The purpose of the meeting was to inform stakeholders of the project, initiate discussion of the issues involved in industry development, and survey their interests in the project. Topic areas included international, national, and state projections for energy supply and demand, land and water issues, feedstock research, and conversion technologies. The meeting attracted 178 participants. The meeting agenda, presentations, and list of participants are attached to this report.

- *A Conversation with Hawaii's Agriculture Sector* – September 5, 2008

A second stakeholder engagement event was held in conjunction with the biennial Hawaii Agriculture Conference on September 5, 2008, at the Hawaii Convention Center. Speakers at the all-day event provided technical information targeted toward the agricultural sector including research on specific crops and markets and incentives for bioenergy products. Attendees discussed a range of issues concerning bioenergy industry development. The meeting attracted 89 participants. The meeting agenda, presentations, and list of participants are attached to this report.

- *Survey*

A survey was distributed to participants at a variety of events, including each of the events described above; at the Hawaii Conservation Conference held at the Hawaii Convention Center at the end of July 2008; and on-line at http://hawaii.gov/dbedt/info/energy/renewable/bioenergy/index_html. The survey solicited information and comments from respondents as participants in development of the Plan. Twenty eight responses were received, and the results are attached to this report.

II. ACT 253 PART III GUIDELINES as follows:

- 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."*

- Outcomes:

  "The bioenergy master plan shall 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."

- Issues

  "The bioenergy master plan shall 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."

III. DBEDT-HNEI CONTRACT PROVISIONS as follows:

- "By November 1, 2008, provide a recommended prioritized, coordinated, phased list of tasks to achieve the required stakeholder involvement, issue consideration, and outcomes identified" and itemized in Part III of Act 253 of 2007.

- "For each task, estimate a minimum budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference." "For each task, estimate funding requirements by year and potential funding source."

Bioenergy Master Plan Progress Summary and Findings

This interim progress report presents the enclosed Task List as a deliverable of Contract No. 57277, prepared in a manner consistent with the three key requirement areas described above – stakeholder collaboration, Act 253 Part III guidelines, and contract provisions.

It should be noted that both 2008 stakeholder meetings were successful in attracting a large number of participants with diverse experience. Due to that diversity, which may be an indication of the complexity of bioenergy industry development, the survey and discussion comments reflect a wide range of topic areas. While the surveys and meeting discussions thus far have not indicated a pattern or preponderance of sentiment with regard to specific feedstocks, concerns, technologies, or approaches to development of the Plan, we have found that:

- There is substantial bioenergy expertise in Hawaii;
- Concurrent supportive research and development efforts are underway including bioenergy production modeling by a national lab, the multi-fuel biofuels production assessment, the HCEI, and private sector funded feasibility analyses;
- Government funding is available for bioenergy research, development and deployment;
- Education and outreach is needed; and
- Industry development will be a long-term effort.

Having been engaged in bioenergy research and development for many years, we have observed that Hawaii's bioenergy industry progress has been strongly influenced by external and local factors including current world markets, availability of investment capital, increasing environmental concerns, new clean energy financing mechanisms, and technology advances, among others. As a result, Hawaii's business partnerships and project plans can be fluid. These observations suggest that the most effective bioenergy master plan may be one that is developed using an iterative process whereby periodic updates and modifications can reflect changing conditions, needs, and industry opportunities.

These findings and observations will be considered in development of the final Plan.

Attachments:

- *Kickoff Meeting* materials – May 21, 2008
- *A Conversation with Hawaii's Agriculture Sector* materials – September 5, 2008
- Survey summary

Enclosure:

- Bioenergy Master Plan, Phase 1 – Task List

BIOENERGY MASTER PLAN

Act 253 Part III 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."

Phase 1 –TASK LIST

October 31, 2008

STAKEHOLDER ENGAGEMENT AND OUTREACH TASKS

1) Issue-based focus meetings – tentatively planned for December 2008
2) Draft Plan review meeting – tentatively planned for July 2009
3) Website development and maintenance – for meeting presentations, Task reports, Plan drafts
4) Stakeholder notification and communication

OUTCOME I: EVALUATION OF HAWAII'S POTENTIAL TO RELY ON BIOFUELS AS A SIGNIFICANT RENEWABLE ENERGY RESOURCE

TASK 1 - Issue: Water resources

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. State, county and federal plans, policies, statutes and regulations related to use of water resources for bioenergy production;
    b. Considerations related to the use, availability and/or allocation of water from streams, wells, and aquifers including environmental impacts and competing uses;
    c. Considerations related to the potential for additional sources of water – nonpotable water, wastewater, stormwater, reclaimed water, desalinated water, and other;
    d. Potential biomass production in conjunction with phytoremediation and bioremediation processes;
    e. Considerations related to increased efficiency of water use for bioenergy production including selection of biomass feedstocks, modeling of crop water use; technologies including irrigation techniques; and
    f. Other considerations relevant to this topic
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Further understand Hawaii's water resource availability and constraints;
    b. Optimize this limited resource for production of bioenergy resources and products,
    c. Address policy requirements necessary for implementation of the Plan, and
    d. Recommend additional supportive actions.
4. Deliverables
    a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for each of items 1 and 2 a – f.
    b. Final report due 4/30/09, in specified format, summarizing Task 1 work and including:

i. Updated detailed reports for each of items 1 and 2 a –f;
ii. Supporting *"Technical, legal, regulatory, policy, and economic analyses as requested, directed, and approved by the State";* and
iii. Recommendations for actions described in item 3. Recommendations shall include:
    1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
    2. Funding requirements by year and potential funding source(s).

c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
    i. Issue focus meeting – tentatively December 2008
    ii. Integration meeting – tentatively May 2009
    iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement

Budget – $45,000
Timeline – per above
Lead organization – TBD
Funding source – federal grant, State funding

TASK 2 - Issue: Land resources

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. State, county, and federal plans, policies, statutes and regulations related to use of land resources for bioenergy production;
    b. Considerations related to the ownership, permissible use, location, availability and/or allocation of appropriate land, and competing uses; and
    c. Considerations related to increased productivity of land use for bioenergy production including selection of biomass feedstocks, bioenergy technologies or any other factors; and
    d. Other considerations relevant to this topic.
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Further understand Hawaii's land resource availability and constraints;
    b. Optimize use of land resources,
    c. Address policy requirements necessary for implementation of the Plan, and
    d. Recommend additional supportive actions.
4. Deliverables
    a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for each of items 1 and 2 a – d.
    b. Final report due 4/30/09, in specified format, summarizing work on Task 2 and including:

i. Updated detailed reports for each of items 1 and 2 a –d;
ii. Supporting *"Technical, legal, regulatory, policy, and economic analyses as requested, directed, and approved by the State";* and
iii. Recommendations for actions described in item 3. Recommendations shall include:
1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
2. Funding requirements by year and potential funding source(s).

c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
i. Issue focus meeting – tentatively December 2008
ii. Integration meeting – tentatively May 2009
iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement:
Budget – $45,000
Timeline – per above
Lead organization – TBD
Funding source – federal grants, State funding

TASK 3 - Issue: Distribution infrastructure for both marine and land

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
   a. Considerations related to roads, harbors, pipelines, storage capabilities and any other appropriate infrastructure needs related to increased use of bioenergy and development of a bioenergy industry; and
   b. Other considerations relevant to this topic.
3. Based on findings, determine actions that should be undertaken under the Plan to:
   a. Develop or enhance infrastructure to meet the needs of a bioenergy industry;
   b. Address policy requirements necessary for implementation of the master plan, and
   c. Recommend additional supportive actions.
4. Deliverables
   a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
   b. Final report due 4/30/09, in specified format, summarizing work on Task 3 and including:
      i. Updated detailed reports for items 1 and 2;
      ii. Supporting *"Technical, legal, regulatory, policy, and economic analyses as requested, directed, and approved by the State";* and
      iii. Recommendations for actions described in item 3. Recommendations shall include:

1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
2. Funding requirements by year and potential funding source(s).

c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
   i. Issue focus meeting – tentatively December 2008
   ii. Integration meeting – tentatively May 2009
   iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement:

Budget – $45,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funding

TASK 4 - Issue: Labor resources and issues

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
   a. Considerations related to job categories, skill levels, workforce development, compensation, cost of living, job location, and any other appropriate workforce issues related to development of a bioenergy industry; and
   b. Other considerations relevant to this topic.
3. Based on findings, determine actions that should be undertaken under the Plan to:
   a. Develop or enhance labor resources to meet the needs of a bioenergy industry;
   b. Address policy requirements necessary for implementation of the master plan, and
   c. Recommend additional supportive actions including legislation.
4. Deliverables
   a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
   b. Final report due 4/30/09, in specified format, summarizing work on Task 4 and including:
      i. Updated detailed reports for items 1 and 2; and
      ii. Recommendations for actions described in item 3. Recommendations shall include:
         1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
         2. Funding requirements by year and potential funding source(s).

c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
    i. Issue focus meeting – tentatively December 2008
    ii. Integration meeting – tentatively May 2009
    iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement:

Budget – $25,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funding

TASK 5 - Issue: Technology to develop bioenergy feedstock and biofuels

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. Existing and near-term bioenergy technologies and feedstocks – production and use – including potential Power Purchase Agreements and planned private sector development.
    b. Range of bioenergy production and use technologies that should be considered for determination of applicability to Hawaii opportunities and conditions. Consider opportunities for value added residues or co-products; and
    c. Other information identified as relevant to this topic.
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Characterize (cost, scale, inputs, by-products, etc.) those technologies most appropriate to development of a bioenergy industry in Hawaii;
    b. Address policy requirements necessary for implementation of the master plan, and
    c. Recommend additional supportive actions, including research, development, and demonstration, to encourage the use of these technologies.
4. Deliverables
    a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2 a - c.
    b. Final report due 4/30/09, in specified format, summarizing work on Task 5 and including:
        i. Updated detailed reports for items 1 and 2 a - c; and
        ii. Recommendations for actions described in item 3. Recommendations shall include:
            1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
            2. Funding requirements by year and potential funding source(s).

c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
    i. Issue focus meeting – tentatively December 2008
    ii. Integration meeting – tentatively May 2009
    iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement

Budget – $25,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

TASK 6 – Integration and Evaluation

1. Compile, analyze, evaluate, and integrate findings from Tasks 1-5 to determine recommended actions to be incorporated in the Plan including specific objectives and timelines.
2. Based on findings, determine actions that should be undertaken under the Plan to facilitate development of a bioenergy industry including:
    a. Policy requirements necessary for implementation of the master plan, and
    b. Other supportive actions.
3. Deliverable due 5/30/09: Report on the "Evaluation Of Hawaii's Potential To Rely On Biofuels As A Significant Renewable Energy Resource" for inclusion in the Plan.

Estimates to implement

Budget – $14,000
Timeline – 5/1- 5/30/09
Lead organization – HNEI
Potential funding source – federal grant, State funds

OUTCOME II: A PLAN OR ROADMAP TO IMPLEMENT COMMERCIALLY VIABLE BIOFUELS DEVELOPMENT

TASK 7 - Issue: Permitting

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. The status of State, federal, and county regulatory processes relevant to permitting Hawaii based bioenergy facilities with regard to complexity and timeliness; and
    b. Other information identified as relevant to this topic.
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Facilitate development of a bioenergy industry;
    b. Address policy requirements necessary for implementation of the master plan, and
    c. Recommend additional supportive actions.
4. Deliverables

a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
b. Final report due 4/30/09, in specified format, summarizing work on Task 7 and including:
    i. Updated detailed reports for items 1 and 2; and
    ii. Recommendations for actions described in item 3. Recommendations shall include:
        1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
        2. Funding requirements by year and potential funding source(s).
c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
    i. Issue focus meeting – tentatively December 2008
    ii. Integration meeting – tentatively May 2009
    iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement

Budget – $30,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

TASK 8 - Issue: Financial incentives and barriers and other funding

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. Appropriate financial incentives or barriers;
    b. Funding that may be available to support the development of a bioenergy industry; and
    c. Other information identified as relevant to this topic.
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Facilitate development of a bioenergy industry;
    b. Address policy requirements necessary for implementation of the master plan, and
    c. Recommend additional supportive actions.
4. Deliverables
    a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
    b. Final report due 4/30/09, in specified format, summarizing work on Task 8 and including:
        i. Updated detailed reports for items 1 and 2; and
        ii. Recommendations for actions described in item 3. Recommendations shall include:

1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
2. Funding requirements by year and potential funding source(s).

c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
   i. Issue focus meeting – tentatively December 2008
   ii. Integration meeting – tentatively May 2009
   iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement:

Budget – $20,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

TASK 9 - Issue: Business partnering

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
   a. Stakeholders, mechanisms, and supportive actions that should be considered to determine applicability to Hawaii opportunities and conditions; and
   b. Other information identified as relevant to this topic
3. Based on findings, determine actions that should be undertaken under the Plan to facilitate development of a bioenergy industry including:
   a. Policy requirements necessary for implementation of the master plan, and
   b. Other supportive actions.
4. Deliverables
   a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
   b. Final report due 4/30/09, in specified format, summarizing work on Task 9 and including:
      i. Updated detailed reports for items 1 and 2; and
      ii. Recommendations for actions described in item 3. Recommendations shall include:
         1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
         2. Funding requirements by year and potential funding source(s).
   c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:

i. Issue focus meeting – tentatively December 2008
ii. Integration meeting – tentatively May 2009
iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement:
Budget – $20,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

TASK 10 - Issue: Identification and analysis of the impacts of transitioning to a bioenergy economy while considering applicable environmental concerns.

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. Range of potential impacts that should be considered as applicable to Hawaii opportunities and conditions; and
    b. Requirements necessary for appropriate analysis or measurement of such impacts;
    c. Other considerations relevant to the topic.
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Conduct appropriate impacts analysis;
    b. Reduce the likelihood of negative impacts;
    c. Increase the likelihood of positive impacts;
    d. Facilitate development of a bioenergy industry using an approach that is sensitive to impacts;
    e. Address policy requirements necessary for implementation of the master plan, and
    f. Recommend additional supportive actions.
4. Deliverables
    a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
    b. Final report due 4/30/09, in specified format, summarizing work on Task 10 and including:
        i. Updated detailed reports for items 1 and 2; and
        ii. Recommendations for actions described in item 3. Recommendations shall include:
            1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
            2. Funding requirements by year and potential funding source(s).
    c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion). Mandatory meetings:
        i. Issue focus meeting – tentatively December 2008
        ii. Integration meeting – tentatively May 2009

iii. Draft Plan stakeholder review meeting – tentatively July 2009

Estimates to implement:
Budget – $35,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

TASK 11 - Integration and Plan development

1. Compile, analyze, evaluate, and integrate findings from Task 6–10 and 12–14, and findings to date from meetings, surveys, and other information gathered.
2. Prepare recommendations relevant to each task, and additionally:
    a. Mechanisms for continued stakeholder involvement and collaboration, education and outreach, longer-term monitoring of Plan progress, advisory board or other organized structure, or any other actions to promote successful implementation of the Plan.
    b. Means for longer-term funding to support Plan implementation and sustain biofuels industry development.
3. Deliverables
    a. Draft Plan including objectives and timelines, findings, milestones, recommended actions, estimated budgets, and conclusions by June 30, 2009, for review by State and stakeholders. Recommendations shall include:
        i. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
        ii. Funding requirements by year and potential funding source(s).
    b. Final Draft Plan, incorporating review comments, to State and stakeholders by 10/15/09.
    c. Final Plan and copies, as required under contract, to State by 12/12/09.

Estimates to implement:
Budget – $30,000
Timeline – per above
Lead organization – HNEI
Potential funding source – federal grant, State funds

OUTCOME III: STRATEGIC PARTNERSHIPS FOR THE RESEARCH, DEVELOPMENT, TESTING, AND DEPLOYMENT OF RENEWABLE BIOFUELS TECHNOLOGIES AND PRODUCTION OF BIOMASS CROPS

TASK 12 - Development of Strategic Partnerships

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:

a. Potential partners, project opportunities, and supportive actions that should be considered for determination of project-specific partnerships applicable to Hawaii opportunities and conditions.

3. Based on findings,
    a. Recommend partnership opportunities, and actions to support such opportunities, to be undertaken under the Plan, and
    b. Address policy requirements necessary for Plan implementation.
4. Deliverables
    a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
    b. Final report due 4/30/09, in specified format, summarizing work on Task 12 and including:
        i. Updated detailed reports for items 1 and 2; and
        ii. Recommendations for actions described in item 3. Recommendations shall include:
            1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
            2. Funding requirements by year and potential funding source(s).
    c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion).

Estimates to implement:

Budget – $15,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

OUTCOME IV: BIOFUELS DEMONSTRATION PROJECTS, INCLUDING INFRASTRUCTURE FOR PRODUCTION, STORAGE, AND TRANSPORTATION OF BIOFUELS

TASK 13 - Development of Biofuels Demonstration Projects

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. Potential demonstration project opportunities, potential partners, and supportive actions applicable to Hawaii opportunities and conditions.
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Facilitate development of biofuels demonstration projects;
    b. Address policy requirements necessary for implementation of the master plan, and
    c. Recommend additional supportive actions.
4. Deliverables

a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
b. Final report due 4/30/09, in specified format, summarizing work on Task 13 and including:
    i. Updated detailed reports for items 1 and 2; and
    ii. Recommendations for actions described in item 3. Recommendations shall include:
        1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
        2. Funding requirements by year and potential funding source(s).
c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion).

Estimates to implement:

Budget – $13,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

OUTCOME V: PROMOTION OF HAWAII'S RENEWABLE BIOFUELS RESOURCES TO POTENTIAL PARTNERS AND INVESTORS FOR DEVELOPMENT IN HAWAII AS WELL AS FOR EXPORT PURPOSES

TASK 14 - Promotion of Hawaii's Renewable Biofuels Resources

1. Identify appropriate stakeholders, technical experts, and information sources throughout the state.
2. Conduct meetings and surveys with stakeholders, and research and analysis as necessary to determine:
    a. Business and financial opportunities related to local and export markets for Hawaii bioenergy resources and products;
    b. Supportive actions that should be considered to promote such opportunities; and
    c. Means of measuring effectiveness of such promotional activities.
3. Based on findings, determine actions that should be undertaken under the Plan to:
    a. Facilitate development of a Hawaii's renewable biofuels resources; and
    b. Address policy requirements necessary for implementation of the master plan.
4. Deliverables
    a. Progress Report due 2/27/09 summarizing work from project inception to 2/27/09 and including detailed reports on findings to date for items 1 and 2.
    b. Final report due 4/30/09, in specified format, summarizing work on Task 14 and including:
        i. Updated detailed reports for items 1 and 2; and
        ii. Recommendations for actions described in item 3. Recommendations shall include:

1. A minimum required budget, timeline, lead organization, and potential funding source(s). For activities best handled by the private sector, so state. If incentives have been suggested, proposed, or evaluated, so reference.
2. Funding requirements by year and potential funding source(s).

c. Participation and support, as appropriate, in meetings, discussions, and expert reviews necessary for development of the Draft Plan (6/30/09 completion), the Final Draft Plan (10/15/09 completion), and the Final Plan (12/12/09 completion).

Estimates to implement:

Budget – $13,000
Timeline – per above
Lead organization – TBD
Potential funding source – federal grant, State funds

Work Plan for Development of the Bioenergy Master Plan

The following pages present the below-indicated Attachments as shown on page 5 of the front portion of this work plan:

Kickoff Meeting materials – May 21, 2008

A Conversation with Hawai‘i’s Agricultural Sector materials – September 5, 2008

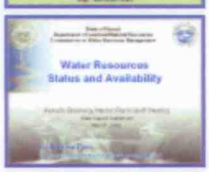
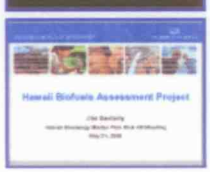
Survey summary

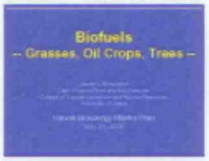
Kickoff Meeting for the Development of the Bioenergy Master Plan

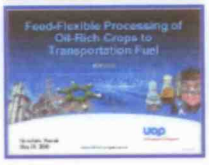
May 21, 2008

AGENDA (download PDF)

PROCEEDINGS - Download individual presentations below;
or, scroll to the bottom to download 290 pages (pdf file, 48 Megabytes).

	Topic	Presenter
	*Keynote*	**David Cole**
	*Development of the Bioenergy Master Plan; signing of Act 90*	**Governor Linda Lingle**
	International Energy Supply and Demand	**Fereidun Fesharaki**
	*Hawaii's Energy*	State of Hawaii: **Maria Tome** Department of Business, Economic Development, & Tourism
	*Agricultural Lands*	State of Hawaii: **Sandra Kunimoto** Department of Agriculture
	*Water Resources*	State of Hawaii: **Lenore Ohye** Commission on Water Resources Management
	*County Perspective - Big Island*	County of Hawaii: **Diane Ley** Department of Research & Development
	*County Perspective - Maui*	County of Maui: **Jonathan Starr** Planning Commission
	*Biofuels Assessment Project*	Black & Veatch: **James Easterly** Project Manager

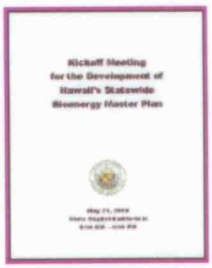
	*What Can Grow in Hawaii:* *Crop Research*	Hawaii Agricultural Research Center: **Michael Poteet**
	*What Can Grow in Hawaii:* *Grasses and Trees for Ethanol Production*	University of Hawaii: **Scott Turn** Hawaii Natural Energy Institute
	*What Can Grow in Hawaii:* *Grasses, Oil Crops, Trees*	University of Hawaii: **James Brewbaker** College of Tropical Agriculture and Human Resources
	*What Can Grow in Hawaii:* *Climate, Soil, and Other Plant Species*	University of Hawaii: **Richard Ogoshi** College of Tropical Agriculture and Human Resources
	*What Can Grow in Hawaii:* *Oil Palm*	University of Hawaii: **William Steiner** College of Agriculture, Forestry and Natural Resource Management
	*What Can Grow in Hawaii:* *Algae*	University of Hawaii: **Richard Rocheleau** Hawaii Natural Energy Institute
	*What Can Grow in Hawaii:* *Invasive Species*	State of Hawaii: **Chris Buddenhagen** Hawaii Invasive Species Council
	*Conversion Technologies & By-Products:* *Integrated Energy Farm*	Gay & Robinson: **Alan Kennett**
	*Conversion Technologies & By-Products:* *ClearFuels Technology*	ClearFuels Technology: **Eric Darmstaedter**
	*Conversion Technologies & By-Products:* *Oilseeds*	Pacific Biodiesel: **Robert King**
	*Conversion Technologies & By-Products:* *Gasification and Pyrolysis*	United States Department of Energy: **James Spaeth**

	Act 253 of 2007: Development of a Bioenergy Master Plan for the State of Hawaii	State of Hawaii: **Maria Tome** Department of Business, Economic Development, & Tourism
	*US DOE Biomass Program: Research and Resources*	United States Department of Energy: **James Spaeth**
	*Bioenergy and Sandia*	Sandia National Laboratories: **Ron Pate** Energy, Water, and Biofuels Interdependencies and Systems Analysis
	*Feed-Flexible Processing of Oil-Rich Crops to Transportation Fuel*	UOP: **Joseph Kocal**

INPUT REQUESTED

	*SURVEY - PDF(Downloadable)*	**Your input** is welcome. PDF form requires Adobe Acrobat. Or, input may be emailed to bioenergy (at) dbedt.hawaii.gov
	*SURVEY - MS Word (Downloadable)*	**Your input** is welcome. Doc form requires MS Word. Or, input may be emailed to bioenergy (at) dbedt.hawaii.gov

COMPLETE PROCEEDINGS



290 pages
PDF file
48 Megabytes

- Agenda
- All presentations
- Survey

Agenda

Kickoff Meeting for the Development of Hawaii's Bioenergy Master Plan
State Capitol Auditorium
May 21, 2008

Time	Topic	*Who*
8:35 AM	**WELCOME**	
	DBEDT	*T. Peck*
8:45 AM	**KEYNOTE**	
	Hawaii BioEnergy	*D. Cole*
9:00 AM	**DEVELOPMENT OF THE BIOENERGY MASTER PLAN**	
	Governor (invited)	*L. Lingle*
9:10 AM	**TRENDS, STATUS, AND PROJECTIONS**	
	International Energy Supply and Demand	
	FACTS, Inc.	*F. Fesharaki*
	Hawaii's Energy Trends and Policies	
	Hawaii State Department of Business, Economic Development, & Tourism	*M. Tome*
	Hawaii's Agricultural Lands - Status and Issues	
	Hawaii State Department of Agriculture	*S. Kunimoto*
	Water Resources Status and Availability	
	Commission on Water Resources Management	*L. Ohye*
	County Perspectives	
	Hawaii County, Maui County	*D. Ley, J. Starr*
10:20 AM	**Break**	
10:30 AM	**BIOENERGY UPDATE**	
	Biofuels Assessment Project	
	Black & Veatch	*J. Easterly*
	What Can Grow in Hawaii (Panel)	*M.Poteet, S.Turn, J.Brewbaker, R.Ogoshi, W.Steiner, R.Rocheleau, C.Buddenhagen*
	Hawaii Natural Energy Institute; College of Tropical Agriculture and Human Resources; College of Agriculture, Forestry and Natural Resource Management; Hawaii Invasive Species Council	
	Moderator: Hawaii Agriculture Research Center	*S.Whalen*
	Conversion Technologies & By-products (Panel)	*A.Kennett, E.Darmstaedter, B.King, J.Spaeth*
	Gay & Robinson; ClearFuels; Pacific Biodiesel; US Department of Energy	
	Moderator: Hawaii Natural Energy Institute	*R.Rocheleau*
	Distribution of surveys	
	LUNCH (on your own)	

Agenda

Kickoff Meeting for the Development of Hawaii's Bioenergy Master Plan
State Capitol Auditorium
May 21, 2008

Time	Topic	Who

(continued)

1:15 PM **BIOENERGY MASTER PLAN: Issues to be considered**

Bioenergy Master Plan
Hawaii State Department of Business, Economic Development, & Tourism — *M. Tome*

Federal Programs, Research, and Resources
United States Department of Energy - Office of Commercialization and Project Management — *J. Spaeth*
Sandia National Laboratory - Energy, Water, and Biofuels Interdependencies & Systems Analysis — *R. Pate, J. Kocal*

Discussion: Land — *Community*

Discussion: Water — *Community*

Discussion: Crops — *Community*

Discussion: Conversion Technologies — *Community*

3:10 PM **Break**

3:25 PM **BIOENERGY MASTER PLAN: Next Steps**

Tasks — *Community*

Timelines — *Community*

Partnerships — *Community*

Funding — *Community*

4:30 PM **SUMMARY & CLOSE**

Thank you for your participation.
Presentations will be posted and survey forms may be downloaded:
hawaii.gov/dbedt/info/energy/renewable/bioenergy/

Bioenergy Kick Off Meeting 5/21/08

Participants

	FIRST	LAST	AFFILIATION
1	Roxana	Myers Cabos, Ph.D.	Ag Innovations, LLC
2	Kim	Coffee-Isaak	Agricultural Leadership Foundation
3	Steve	Shropshire	Aloha Green
4	Leon	Sollenberger	AO Enterprises, Inc.
5	Suzi	Dominy	Aquafee.com
6	John	Chock	BAE Systems
7	Joan	Bennet	Bennet Group
8	Bob	Ely	Big Island Growers
9	James	Loux	Bioenergy Systems of Hawaii, Inc.
10	James	Easterly, P.E.	Black & Veatch Energy
11	Barry	Usagawa, P.E.	Board of Water Supply
12	Jose	Zabaleta, Jr.	Bronzeoak Cleak Energy
13	Robert	Primiano	C&C HNL - Dept of Facility
14	John	Kamana	Caltrol, Inc. / Emerson Process
15	Edward	Nugent	Caltrol, Inc. / Emerson Process
16	Dante	Carpenter	Carbon Diversion
17	Mark	Takemoto	Castle & Cooke Hawaii
18	Christy	Martin	CGAPS - Coordinating Group on
19	Robert	Shleser, Ph.D.	Clear Fuels Technology
20	Doug	Carlson	Comma`aina Communications
21	Lani	Nakazawa	County of Kauai
22	Joanne	Yukimura	County of Kauai
23	Sherry	Morrision	County of Maui
24	Olivia	Adams	ED&F Man Biofuels North america
25	Dante	Aragon	EMCC - Energy Mangement
26	John	Strom	Enterprise Honolulu
27	Fereidun	Fesharaki	FACTS, Inc.
28	Alan	Kennett	Gay and Robinson
29	Linda	Lingle	Governor, State of Hawaii
30	Mike	Poteet	HARC - Hawaii Agricultural
31	Stephanie	Whalen	HARC - Hawaii Agricultural
32	Aileen	Yeh	HARC - Hawaii Agricultural
33	Bob	Numbers	Hawaii BioCrude, Inc.
34	Mawae	Morton	Hawaii Bioenergy
35	Patrick	Doi	Hawaii Biofuels
36	Richard	Sakoda	Hawaii Biofuels
37	Jose	Dizon	Hawaii Electric Light Company, Inc.
38	Jay	Ignacio, P.E.	Hawaii Electric Light Company, Inc.
39	Ronald	Kurasaki	Hawaii Health Systems, Corp.
40	Pricilla	Billing	Hawaii Invasive Species Council
41	Jaqui L.	Hoover	Hawaii Leeward Planning
42	Richard	Rocheleau	Hawaii Natural Energy Institute
43	Russell	Alfonso, Ph.D.	Hawaii Pacific University
44	Warren	Bollmeier	Hawaii Renewable Energy Alliance
45	Richard	Tolleson	Hawaii Reserves, Inc.
46	Leo	Asuncion, Jr., AICP	Hawaiian Electric Company, Inc.
47	Alan	Barayuga	Hawaiian Electric Company, Inc.
48	William	Bonnet, P.E.	Hawaiian Electric Company, Inc.
49	Lynn	Bronaugh	Hawaiian Electric Company, Inc.
50	Colton	Ching, P.E.	Hawaiian Electric Company, Inc.
51	Kathleen	de Silva	Hawaiian Electric Company, Inc.
52	Garen	Deweese	Hawaiian Electric Company, Inc.

53	Darcy	Endo	Hawaiian Electric Company, Inc.
54	Gary	Hashiro, P.E.	Hawaiian Electric Company, Inc.
55	Lori	Hoo	Hawaiian Electric Company, Inc.
56	Denise	Iseri-Matsubara	Hawaiian Electric Company, Inc.
57	Darren	Ishimura, P.E.	Hawaiian Electric Company, Inc.
58	Frankie	McCurley	Hawaiian Electric Company, Inc.
59	Mary Ellen	Nordyke-Grace, JD,	Hawaiian Electric Company, Inc.
60	Erin	Peyton	Hawaiian Electric Company, Inc.
61	Peter	Rosegg	Hawaiian Electric Company, Inc.
62	Scott	Seu, P.E.	Hawaiian Electric Company, Inc.
63	Craig	Shigeta	Hawaiian Electric Company, Inc.
64	Kazuo	Shirakawa, MBA, P.E.	Hawaiian Electric Company, Inc.
65	Scott	Simon	Hawaiian Electric Company, Inc.
66	Ezra	Kanoho	HBE
67	Lee	Jakeway	HC&S
68	Adrienne	Barnes	Imperium Hawaii
69	David	Leonard	Imperium Hawaii
70	Susan	Tai	Kauai Economic Development board
71	Randall	Hee, P.E.	KIUC - Kauai Island Utility
72	Steven	Rymsha	KIUC - Kauai Island Utility
73	Cortney	Hoffman	Kohala Center, The
74	Miyuki	Merry	Kolohala Ventures
75	Joelle	Simonpietri	Kuehnle Agrosystems
76	Ross	Yamasaki, LEED AP	kya design group
77	Manuel	Garcia	Law Offices of Manuel D. Garcia,
78	Bret	Harper	LFR
79	Kat	Brady	Life of the Land
80	Henry	Curtis	Life of the Land
81	Mathew	McNeff	Maui Electric Company, Ltd.
82	Edward	Reinhardt	Maui Electric Company, Ltd.
83	Mark	Suehiro	Maui Electric Company, Ltd.
84	Sharon	Suzuki	Maui Electric Company, Ltd.
85	David	Cole	Maui Land & Pineapple Company,
86	Jonathan	Starr	Maui Planning Commission
87	Rob	Parsons	Maui Tomorrow Foundation, Inc.
88	Russell	Whang	Mid Pac Petroleum
89	Daniel	KenKnight	Oahau Ethanol Corp.
90	Warren	Dominy, Ph. D.	Oceanic Institute, an Affliate of HPU
91	Travis	Hylton	Oceanit
92	Ricky	Oshiro	Office of Daniel Akaka
93	Kelly	King	Pacific Biodiesel Inc.
94	Jenna	King	Pacific Biodiesel Inc.
95	Robert	King	Pacific Biodiesel Inc.
96	William	Maloney	Pacific West Energy, LLC
97	Scott	Matsuura	Pacific West Energy, LLC
98	Hessy	Ahokovi	Pele Enery Group
99	Pat	Urieff	QLCC
100	Suzanne	Garrett	Reflexology, Reiki, Vibrational
101	Jody	Allione	Renewable Energy Consulting
102	Stephen	Conrad, Ph.D.	Sandia National Laboratories,
103	Dwight	Amemiya	Shell Oil Products, US
104	Cheryl	Kikuta	SOH - DCCA
105	Lane	Tsuchiyama	SOH - DCCA
106	Chris	Baron	SOH - DBEDT
107	Theodore	Liu	SOH - DBEDT

108	Doug	Oshiro	SOH - DBEDT
109	Theodore	Peck	SOH - DBEDT
110	Estrella	Seese	SOH - DBEDT
111	Karen	Shishido	SOH - DBEDT
112	Pricilla	Thompson	SOH - DBEDT
113	Maria	Tome	SOH - DBEDT
114	Kathy	Yim	SOH - DBEDT
115	Sandra	Kunimoto	SOH - Department of Agriculture
116	Nancy	Ralston	SOH - Department of Agriculture
117	Daryl	Arai	SOH - Dept of Agriculture
118	Matthew	Loke, Ph.D.	SOH - Dept of Agriculture
119	Earl	Yamamoto	SOH - Dept of Agriculture
120	Kevin	Yokoyama	SOH - Dept of Agriculture
121	Christopher	Buddenhagen	SOH - DLNR
122	Patrick	Chee	SOH - DLNR
123	Robert	Hauff	SOH - DLNR
124	Charley	Ice	SOH - DLNR
125	Ken	Kawahara, P.E.	SOH - DLNR
126	Lenore	Nakama-Ohye	SOH - DLNR
127	Molly	Schmidt	SOH - DLNR
128	Dean	Watase	SOH - DOT - Harbors
129	Lisa	Bravender	SOH - DoTAX
130	Davis	Kawamoto	SOH - DoTAX
131	Kyle	Nakahara	SOH - DoTAX
132	Chuck	Freedman	SOH - House of Representatives
133	Hermina	Morita	SOH - House of Representatives
134	George	Okuda	SOH - House of Representatives
135	Roland	Sagum,III	SOH - House of Representatives
136	Calvin	Say	SOH - House of Representatives
137	Kiriko	Urano	SOH - House of Representatives
138	Thomas	Quinn	SOH - HTCD HCATT-Hawaii Center
139	Suzanne	Chun-Oakland	SOH - Senate
140	Kamakana	Kaimuloa	SOH - Senate
141	Russell	Kokubun	SOH - Senate
142	Rock	Riggs	SOH - Senate
143	Carlton	Saito	SOH - Senate
144	B.J.	Reyes	Star Bulletin
145	Shan	Steinmark, Ph.D.	Strategic Transitions Research, Inc.
146	Karl	Frogner, PhD, OZP	SunMoon University
147	Edward	Zwick	Sustainable Biodiesel Alliance
148	Laurie	Goodwin	Syngenta Seeds, Inc.
149	Lance	Tanaka	Tesoro Hawaii Corporation
150	Steven	Golden	the Gas Company
151	Don	Byan	Tradewinds forest Products
152	James	Spaeth	U.S. Department of Energy
153	William	Steiner	UH College of Agriculture, Forestry
154	Michael	Crosby, Ph.D.	Univerity of Hawaii - Hilo
155	Sharon	Miyashiro	Univerity of Hawaii - Manoa
156	James	Brewbaker	University of Hawaii - Manoa
157	Richard	Ogoshi, Ph.D.	University of Hawaii - Manoa
158	Kim	Suman	University of Hawaii - Manoa
159	Brian	Turano, Ph.D.	University of Hawaii - Manoa
160	Scott	Turn, Ph.D.	University of Hawaii - Manoa
161	Norman	Wong	University of Hawaii - Manoa
162	Brandon	Yoza	University of Hawaii - Manoa

163	Joseph	Kocal, Ph.D.	UOP, a Honeywell Company
164	Wren	Wescoatt	UPC Hawaii Wind
165	Karissa	Arnett	Versar, Inc.
166	Andrew	Trenka	VIEX2 Consulting
167	Doug	Vind	Western Ethanol Company, LLC
168	Madeline	Austin	World Business Academy
169	Melissa	Pavlicek	WSPA
170	Michael	Buck	
171	Sean	Garcia	
172	Maurice	Kaya	
173	Joan	Larcom	
174	Robert	Mastumoto	
175	Barry	Paul	
176	Chelsea	Phlegar	
177	Robert	Speer	
178	George	St. John, P.E.	

2008 Hawaii Agriculture Conference - *Growing with Intention*

Friday, September 5, 2008

Hawaii Convention Center

Bioenergy Workshop Information

DOWNLOADS

in pdf format:

Workshop Information

Bioenergy Program

Mail In Registration

Bioenergy Master Plan:
A Conversation with Hawaii's Agriculture Sector

Bioenergy offers both great opportunities and great challenges. Bioenergy resources could help Hawaii to meet the renewable energy requirements contained in State statute, support and stimulate the agricultural sector, increase in-state energy supplies, and keep more of Hawaii's energy dollars circulating in Hawaii's economy. Successful implementation will depend upon developing synergies between bioenergy production and production of food, feed, fiber. The importance and complexity of this topic spurred lawmakers to mandate the development of a Hawaii Bioenergy Master Plan (Act 253, 2007). This plan requires input from stakeholders along the bioenergy production and utilization chain, in which the agricultural community (landowners, farmers, and the agricultural business sector) are important links. The workshop program will feature presentations and conversations that address the potential relationship between bioenergy development and Hawaii's agriculture sector.

PROGRAM:

Click here for a pdf of the program schedule for Friday, September 5.

SCHEDULE OF EVENTS	
8:00 am	**Registration:** Continental Breakfast (included with registration fee)
8:30 am	**Welcoming Remarks** Hawaii Department of Agriculture Hawaii Department of Business, Economic Development & Tourism
9:00 am	**Hawaii Bioenergy Overview** Maria Tome, DBEDT, Hawaii Bioenergy Master Plan Scott Trun NHEI/UH, Bioenergy Systems Overview
9:30 am	**Bioenergy Crop Production** Bill Cowern, Hawaiian Mahogany, Oil Palm (confirmed) Robert Osgood, HARC, Banagrass (confirmed) Michael Poteet, HARC, Jatropha (confirmed) James Brewbaker, UH, Tree Crops (invited)

	TBA, Guinea grass
10:45 am	**Group Discussion**
12:00 pm	**Lunch** (included with registration fee) Room 312
1:00 pm	**Bioenergy Markets** Hawaiian Electric Company (confirmed) Hawaii BioEnerggy LLC (confirmed) Pacific Biodiesel (confirmed) Chevron Hawaii (tba)
2:00 pm	**Group Discussion**
3:00 pm	**BioEnergy Incentives** Tim O'Connell, USDA/Rural Development (confirmed)
3:30 pm	**Concluding Discussion**

Sponsors

Hawaii State Department of Business, Economic Development and Tourism; Hawaii State Department of Agriculture; U.S. Department of Energy, Office of Biomass Programs; Hawaii Natural Energy Institute;

College of Tropical Agriculture and Human Resources; and Hawaii Agriculture Research Center

Conference Dates and Times

Friday Sept. 5, 2008, 8:00 am – 5:00 pm
Registration begins at 8:00 am
Morning Sessions 9:00 am – 12:00 pm
Lunch 12:00 pm – 1:00 pm
Afternoon Sessions 1:00 pm – 5:00 pm
Tradeshow & Poster Exhibit 8:00 am – 2:00 pm

Location

Hawaii Convention Center 1801 Kalakaua Avenue, Honolulu, HI 96815
Third Floor Meeting Rooms

Bioenergy in Hawaii

Key elements of the bioenergy master plan that relate to the agricultural sector include:

(1) Water resources;
(2) Land resources;
(3) Labor resources and issues;
(4) Technology to develop bioenergy feedstock and biofuels;
(5) Permitting;
(6) Financial incentives and barriers and other funding;
(7) Business partnering;
(8) Policy requirements necessary for implementation of the master plan; and
(9) Identification and analysis of the impacts of transitioning to a bioenergy economy while

addressing environmental concerns.

Workshop Registration Fee

All sessions all day, includes lunch $ 50.00

Registration: click here for online registration; click here for mail-able /fax-able pdf registration form

Deadline: Deadline for online registration is Monday Aug. 25, 2008 and for mail in or faxed registration is Friday Aug. 29, 2008. Form of payment must accompany the registration. Credit card numbers submitted with registration will be processed upon receipt. Registrations will not be processed without payment.

Refunds: Requests for refunds will be received at the UH Conference Center by Wednesday Aug. 27, 2008, in writing (email, fax or post). No refunds will be made thereafter. Please allow approximately three to five weeks for processing.

PLEASE DIRECT ALL **CONFERENCE PROGRAM INQUIRIES** TO: bioenergy@dbedt.hawaii.gov or bionrg@hawaii.edu

PLEASE DIRECT ALL **REGISTRATION INQUIRIES** TO: Yvonne: (808) 956-8240; Fax: (808) 956-3364; Email: yvonney@hawaii.edu

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A Conversation with Hawaii's Agriculture Sector

September 5, 2008

PROCEEDINGS - Download individual presentations below;
or, scroll to the bottom to download 96 pages (pdf file, 18 Megabytes).

	Topic	Presenter
	*Welcoming Remarks*	State of Hawaii: **Sandra Kunimoto** Department of Agriculture
	*Welcoming Remarks*	State of Hawaii: **Theodore Liu** Department of Business, Economic Development & Tourism (DBEDT)
	*Bioenergy Master Plan Project*	**Maria Tome** DBEDT - Hawaii State Energy Office
	*Bioenergy Systems Overview*	**Scott Turn** UH - Hawaii Natural Energy Institute (HNEI)
	*Oil Palm*	**Bill Cowern**
	*Banagrass*	**Robert Osgood**
	*Jatropha*	**Michael Poteet** Hawaii Agriculture Research Center (HARC)
	*Tree Crops*	**James Brewbaker** UH - College of Tropical Agriculture (CTAHR)
	*Guinea Grass*	**James Carpenter** CTAHR

Bioenergy Markets

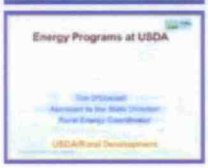
Karl Stahlkopf
Hawaiian Electric Company, Inc.

Bioenergy Markets

Paul Zorner
Hawaii BioEnergy, LLC

Bioenergy Markets

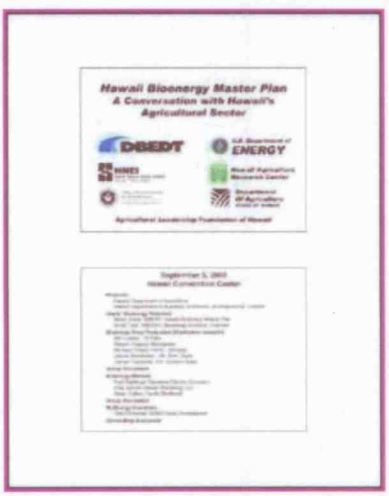
Brian Collins
Pacific Biodiesel, Inc.



Energy Programs at USDA

Tim O'Connell
United States Department of Agriculture (USDA)

COMPLETE PROCEEDINGS



296 pages
PDF file
18 Megabytes

- Presentations
- Survey

BIOENERGY WORKSHOP PARTICIPANTS, 9/05/08

	LAST	FIRST	AFFILIATION
1	Abbott	Jon	21st Century Technologies
2	Cabos	Roxana	Ag Innovations LLC
3	Mistysyn	Jim	BEI Hawaii
4	Haendler	Brenda	Booz Allen Hamilton
5	Lippert	Dawn	Booz allen Hamilton
6	Shleser	Robert	ClearFuels Technology, Inc.
7	Hashimoto	Andrew	College of Tropical Agriculture and Human Resources
8	Liu	Theodore	Dept. of Business, Economic Development & Tourism
9	Shon	Carilyn	Dept. of Business, Economic Development & Tourism
10	Thom	K.N.	Dept. of Business, Economic Development & Tourism
11	Tome	Maria	Dept. of Business, Economic Development & Tourism
12	Ohye	Lenore	DLNR, Commission on Water Resource Management
13	Strom	John	Enterprise Honolulu
14	Yeh	Aileen	HARC/Hawaii Tea Society
15	Poteet	Michael	Hawaii Agriculture Research Center
16	Whalen	Stephanie	Hawaii Agriculture Research Center
17	Osgood	Robert	Hawaii Agriculture Research Center/AgResult
18	Numbers	Bob	Hawaii BioCrude, Inc.
19	Matsunaga	Joel	Hawaii Bioenergy, LLC
20	Zorner	Paul	Hawaii Bioenergy, LLC
21	Sakoda	Richard	Hawaii Biofuels, LLC
22	Kunimoto	Sandra Lee	Hawaii Dept. of Agriculture
23	Wong	Lyle	Hawaii Dept. of Agriculture
24	Beck	Curtis	Hawaii Electric Light Company
25	Hoover	Jacqui	Hawaii Leeward Planning
26	Rocheleau	Richard	Hawaii Natural Energy Institute
27	Antal, Jr.	Michael J.	Hawaii Natural Energy Institute, UH
28	Fujino	Grace	Hawaii Natural Energy Institute, UH Manoa

37	Rosegg	Peter	Hawaiian Electric Company
38	Shirakawa	Kazuo	Hawaiian Electric Company
39	Stahlkopf	Karl	Hawaiian Electric Company
40	Cowern	William	Hawaiian Mahogany, Inc.
41	Stepchew	Bill	Hawaiian Mahogany, Inc.
42	Henna	Joyce	Honolulu Community College
43	Bollmeier, II	Warren	HREA
44	Rosehill	Robert	Kamehameha Schools
45	Harper	Bret	LFR Inc, an ARCADIS Company
46	Curtis	Henry	Life of the Land
47	Wilson	Maureen	Maui Floral
48	Pavlicek	Melissa	NFIB (National Federation of Independent Business)
49	Boyar	Pamela	Nile Valley Herbs
50	Conrad	Misty	NREL
51	Akiona	Bill	OmniGreen Renewables
52	Collins	Bryan	Pacific Biodiesel, Inc.
53	Maloney	William	Pacific West Energy LLC
54	Matsuura	Scott	Pacific West Energy LLC
55	Leveroni	John Mark	Plant Group Hawaii, Inc.
56	Schuman	Skip	PM Realty
57	Parsons	Rob	Sierra Club, Maui Group
58	Lee	Alfredo	SOH Agribusiness Development Corp.
59	Owan	Lynn	SOH Agribusiness Development Corp.
60	Chang	Marcey	SOH, DCCA, Div of Consumer Advocacy
61	Horiuchi	Jayson	SOH, DCCA, Div of Consumer Advocacy
62	Kikuta	Cheryl	SOH, DCCA, Div of Consumer Advocacy
63	Tsuchiyama	Lane	SOH, DCCA, Div of Consumer Advocacy
64	Flynn	Rory	SunFuels Hawaii LLC
65	Ray	John	SunFuels Hawaii LLC
66	Kwock	Jeremy	The Kohala Center
67	Takahashi	Patrick	UH Hawaii Natural Energy Institute

76	Uehara	Goro	University of Hawaii
77	Wieczorek	Ania	University of Hawaii
78	Yu	Jian	University of Hawaii
79	Allione	Jody	UPC Solar
80	Trenka	Andrew	US Dept. of Energy
81	O'Connell	Timothy	USDA Rural Development
82	Kinvig	Kevin	USDA-NRCS
83	Akao	Randall	WH Shipman, Ltd.
84	Yonemura	Sandy	
85	Maluafiti	Alicia	
86	Nellis	Dan	
87	Simonpietri	Joelle	
88	Su	Eric	
89	Takemoto	Mark	

Survey

It will take the effort of many knowledgeable people, working together, to determine if and how bioenergy could provide benefits to Hawaii's citizens, economy, and the environment. We ask for your kokua in helping to gather the information we need.

Please select your top area(s) of expertise and interest, in order of priority. There are more topics on the other side. Use "1" to indicate your top area, "2" for second (if any), "3" for third.

Comments and suggestions may be provided in all areas. **Thank you for your input!**

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

Please turn in this survey today; or mail it to DBEDT - SID - Bioenergy, PO Box 2359, Honolulu, HI 96804; or provide input via email: bioenergy@dbedt.hawaii.gov.

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

Survey (continued)

Contact information (optional):

Name: _____
Dr. / Mr. / Ms. First Last

Affiliation: _____

Address: _____

_____

Phone(s): _____

E-Mail: _____

Website _____

rank	Topic	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	a.1. Strategic **partnerships** for the research, development, testing, and deployment of renewable biofuels technologies and production of biomass crops		
1	**a1**	Need to send UH grad students out to industries to work at developing informed workers and scientist.	It is extremely important to take students in a theoretical institution and train them in real life situations.
1	**a1**	Promote partnership of private industries with research labs at UH for the development of next generation of biofuels using genetic engineering of fuel crops.	Apply technologies developed at universities in the practical industrial setting; show PhD students that there is a job market after they graduate.
	a1	Maui Renewable Energy Task force - county level c/o Victor Reyes	Encourage similar groups in other counties.
	a1	Neal Stewart, University of Tennessee; CTAHR, USFS, DLNR, small private companies	work with other universities that are looking at biofuels, particularly tropical or subtropical.
2	**a1**	same	
1	**a1**	I have expertise in forestry and agro-forestry, so production of crops & development of sustainable systems, especially low - input & organic are a high priority for me.	
3	**a1**	LFR's parent company is ARCADIS whom is a global network of business professionals that provides project management, consultancy and engineering services to enhance mobility, sustainability and quality of life. ARCADIS develops, designs, implements, maintains, and operates projects for companies and governments.	
2	**a1**		
	a1	Using seawater; NELHA; Anywhere else, obtaining permits for pipes is going to be very difficult	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	a.2. Evaluation of Hawaii's **potential** to rely on biofuels as a significant renewable energy resource		
5	**a2**	This is obvious!	
	a2	We already know the potentials	
	a2	Biofuels are our future!	
	a2		Once again, not a sustainable source, consider wind, solar, and wave energies. We need the land to grow food!
1	**a2**	Speak to Rob Parson and the Maui Tomorrow sub-committee on sustainability on energy and food security. robparsons@earthlink.net	We must take food security into any consideraions for biofuels.
	a2		
3	**a2**	same	
2	**a2**		
	a2	Botanical background: invasive potential of proposed plant materials	Interest in moringa
	a2	LFR's local associate, Mr. Harper, is the co-author of the "Assessment of Existing Hawaii Biomass Feedstocks"	
	a2	NELHA - Ron Baird	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	a.3. Biofuels **demonstration** projects, including infrastructure for production, storage, and transportation of biofuels		

3	**a3**		
2	**a3**	Work w/sustainable Saunders and bring biofuels projects to the light at universities and get future scientists, engineers, and policy makers interested and knowledgeable.	
2	**a3**	UH is a great resource for developing / researching on how new technologies can be used ion an island setting; however, if it is not brought into the light through demonstrations, the ideas will be buried under stacks of books.	Promote demonstration through holding competitions for univrsities as well as private research / industries. e.g. PRIZE = biofuel!
	a3	Coordinated plan for group or body for R&D, now individual researchers are pursing funding & research	UH-M CTAHR UH-H CAFNRM
1	**a3**	Presently, operating a small batch biodiesel processor in Laie.	Tax laws (hwy & excise) amend to promote biofuel production.
	a3	Use King biodiesel expertise to the max.	Local
1	**a3**	Conventional nuclear power / US Military submarines / MBA	seeking employment
	a3	CTAHR, Forest Solutions, Tradewinds, HARC (Mike Poteet, Nick Dudley), alan Yamaguchi - Mauna Loa MacNut, Cattlemen's Association, Mike Robinson, DHHL	include the general public from the start.
2	**a3**	Talk to Pacific Bio-diesel about the difference between sustainable and renewable energy resources. Speak to Kelly King @ pacificbiodiesel.org	
1	**a3**	working with Grace Pacific & Pacific BioDiesel	
3	**a3**		
	a3	LFR has permitted, designed and constructed multiple ethanol facilities. We are also capable of performing due diligence for many aspects of a specific bioenergy project including chemical, biochemical & civil engineering, feasibility studies, site development, infrastructure, air quality management, remedial design, construction management, geotechnical and stormwater plans.	
2	**a3**		Biocarbons for carbon fuel cells, ultra-clean coal, etc.
1	**a3**	NELHA, Baird	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	a.4. Promotion of Hawaii's renewable biofuels resources to potential **partners and investors** for development in Hawaii as well as for export purposes		
4	**a4**		
	a4	Local utilities	
1	**a4**	My experiience includes: international law, including Technology exchange Agreements, Joint Ventures, Investments in biotech & electronic enterprises.	
3	**a4**	Conventional nuclear power / US Military submarines / MBA	seeking employment
	a4		
	a4		So the rich can get richer? We need to work towards sustainability for the PEOPLE of Maui county.
3	**a4**		
	a4	John Christmas, Hannon Armstrong	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	a.5. A plan or **roadmap** to implement commercially viable biofuels development		
1	**a5**		

3	**a5**	Need to make sure that any by-products (such as glycerin) need to be used here for energy first rather than be shipped.	Lower the shipping of any by-products.
	a5	systems approach needed	
4	**a5**		
	a5		This is a dead end road, abort and move in another direction.
1	**a5**	LFR's local staff member has extensive experience in master plan development & ethanol plant design as well as a broad range of bioenergy expertise paired with an understanding of Hawaii's unique energy needs.	
	a5	This is already being done by one NELHA tenant and one that hopes to become a tenant.	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.1. Specific **objectives and timelines**		
	b01	goals & recommendations	
	b01	promote Efficiency first in transportation, construction and ag energy planning.	
3	**b01**		
	b01	In order to properly & skillfully hear and consider all sides of this issue	I recommend having trained facilitators at public forums. phyllis@creativeconflictsolutions.com / www.creativeconflictsolutions.com
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.2. **Water** resources		
	b02	R-1 water	
3	**b02**	Reuse water source for irrigation.	
1	**b02**	Oahu County Water Use & Developmental Plan, balancing & planning water supply for both urban & ag.	
	b02	Must preserve & respect State water code. Movement to biofuels should not be an excuse to damage public trust.	
2b	**b02**		
	b02		What, steal more from the East Maui taro farmers?
4	**b02**	this is key, there will be increasing competition among ag, human / industrial & environmental users	
	b02	NELHA for seawater	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.3. Land resources		
	b03	Don't plan for just biofuels - also access for land; start w/County plans - let them know work w/their communities to endure their needs & desires are met. Then collate & merge county plans into the State plan.	
	b03	Targeted landowners who might be interested in dev and/or lease; minimum acerage	
2	**b03**	Many hundreds of acres of ag land.	
4	**b03**	County land use plan, policies, implementation.	Urban Growth Boundaries.

	b03	Usable ag lands need to be preserved for ag and conversion limited.	
2c	**b03**		
	b03		Need the land to start growing our own food !!!
5	**b03**	Land is expensive; low-value commodities have low return per acre.	
	b03	Kamehameha Trust	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.4. Distribution **infrastructure** for both marine and land		
2	**b04**	Water system distribution efficiencies, water loss management best practices	**Funding** to maintain infrastructure.
1	**b04**	Pacific BioDiesel	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.5. Labor resources and issues		
2	**b05**	Again training university students in biofuels industry.	university students
	b05	workforce development to gear up ag field workers, mechanics, mill workers	Business & Community colleges, Hawaii County Economic Opportunity Council
6	**b05**	We simply won't be able to compete with imports from developing countires.	
	b05		Green Jobs Act of 2007 $125 million not appropriated
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.6. Technology to develop bioenergy feedstock and biofuels		
1	**b06**	Give more grants to UH for alternative fuels-on-site training, and working with existing biofuel businesses for training and inspiration for new better ideas.	
1	**b06**	Researchers leave HI after graduation, brain-drain, because of lack of jobs.	Promote local technology research "That cannot be done elsewhere" (out of state) such as Tropical Ag's Algae research. Provide biofuel jobs.
	b06	use existing biomass wood products with other values / products / crops.	
4	**b06**	Studying of biomass to energy development.	
2	**b06**	Pacific BioDiesel	
1	**b06**		
	b06	BioEnergy Hawaii, LLC; Sasol Ltd	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.7. Permitting		
2	**b07**	Currently, it takes over one year for researchers to get an important permit to obtain organisms for biofuels research (in a contained laboratory/environment). For a 4yr PhD student, we don't have time to waste.	Expedite permitting process for importing genetic engineering of agricultural materials for research purposes, especially for biofuels
	b07	impacts on county/state agencies if streamlined permitting is instituted	
	b07	Begin early. Avoid need to get exemptions from 343. Proceed through legal processes.	
	b07		make it easier for companies to get started
	b07		Sure, Linda Lingle will be glad to railroad whatever you need.
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions

	b.8. Financial incentives and barriers and other **funding**		
4	**b08**	Give more funding for biofuels research at universities; training free of charge	
	b08	do gas & utilities need incentives to transition to purchase local fuels (biofuels or biomass)?	
2	**b08**	My experiience includes: international law, including Technology exchange Agreements, Joint Ventures, Investments in biotech & electronic enterprises.	
	b08		No more incentives, tax breaks, or preferential treatment to the rich, please !!
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.9. Business partnering		
	b09	Tim O'Connell, USDA-Rual Development- cooperatives	Chambers
3	**b09**	My experiience includes: international law, including Technology exchange Agreements, Joint Ventures, Investments in biotech & electronic enterprises.	
3	**b09**	CED Consulting to develop and install	
2	**b09**		
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.10. Policy requirements necessary for implementation of the master plan		
1	**b10**	Need: Indentification and regulation of Prime and Non-Prime land by rational criteria and inclusive clear process.	
	b10	Hawaii Energy Policy Forum - Sharon Miyashiro local chamber of commerce organizations	
1	**b10**	Legislative package to outline policy and implement policy (b.1 & a.5)	
rank	**Topic**	Recommended information, expertise, or analysis: What; Who/where	Comments / suggestions
	b.11. Identification and analysis of the impacts of transitioning to a bioenergy economy while considering applicable **environmental** concerns.		
3	**b11**	Make sure that these processes do not harm the environment (wastewater) analysis.	
	b11	Sierra Club - J. Mikulina Life of the Land - Henry Curtis The Nature Conservancy - Mark Fox Blue Planet Foundation - Henk Rogers David Matsuura - former State Senator	
3	**b11**	Best management practices to prevent ground water / surface water contamination.	
	b11	Partnerships w/ environmental stakeholders, such as, Sierra Club to ensure conflicts do not derail progress.	
2a	**b11**		
2	**b11**	Conventional nuclear power / US Military submarines / MBA	seeking employment
3	**b11**	Rob Parsons (see a.2) has done research into the effects of palm oil cultivation on the Indonesian and Malaysian geography, economy, and environment. Please contact him.	The depletion of forests and economy.
7	**b11**	All general ag concerns: Invasive species, agricultural inputs, soil conservation, water quality	

other comments:
My specific qualifications: 1) I am currently serving as the interim CEO at Kuehnle AgroSystems Inc, an algae strain developer for biojet, biodiesel, and other commodity markets. KAS will be participating in several algae biofuels demonstration projects in Hawaii and elsewhere. 2) My consulting company (Simonpietri Enterprises) specializes in evaluating and providing private funds for renewable energy projects. Past and current clients include Waste Management Inc (biofuels strategy for the corporate headquarters in Houston), Kolohala Ventures (Hydrogen Fund and Green Fund), and Seawater Investors. 3) I have an MBA from Tuck School at Dartmouth in renewable energy finance.
We need an ongoing mechanism that distributes current correct & complicated information to the masses. How can people advocate for the right thing when they don't know / have all the correct information.
* Suggestion to contract with a well respected facilitator team to assist DBEDT Team in organizing, coordinating, and implementing meetings for group & focus groups. The process results in the outcome. Check w/ HTA for the process they used to develop their state & county strategic plans via public meetings and key stakeholder interviews. * Resources for information on cooperative models for businesses, landowners, etc to work together - Tim O'Connell : USDA-Rural Development/Hilo * Communication team to assist with plan development outreach and general public understanding of what the bioenergy industry could mean to their families/communities; including impacts-off-sets to environment and the cost they'll pay to have locally produced energy and cost (financial, (US subsidized oil co), social and environmental) of imported oil. * Approach overall work of developing and writing the plan from a holistic systematic approach that balances economics, people and environment. * GIS expertise to create overlays of data sets. *Life cycle costs. * See Energy flows study and HI County Energy Sustainability Plan located on the CO of HI, Dept of R&D website. (I will send to MLT)
b12. Crops
Excellent progress, A Great Beginning!
* I would suggest a different set-up for input & exchange of ideas, to have questions & answers at the end of the day after everyone has left is frustrating. A facilitator could be used. (ctc: Kim Coffee-Isaacs or Ag Leadership Foundation of Hawaii.) * I had expected to hear more on potential crops and perhaps some information on what has been planted - when, how much, etc. Information on solar, geothermal, cars that run on veg oil, etc. What can the public do to help cut down the consumption of gas? * Need workshops to figure out how to fertilize sustainably without chemical fertilizers, need to do more sustainable Ag particularly for pastures. *Could jatropha or oil palm or any of the bi-products be used as fertilizer, instead of burned for fuel? *don't know the economics on that one.
I urge you to please reconsider this move for the people of the State of Hawaii. Biofuels are not a practical nor a progressive step. Biofuels have been proven to not be worth the energy required to grow, harvest, process, and transport the product. Even all that seems to be working in South America has proven not to be an answer to our energy problems or needs. The world's energy experts agree that biofuels will not be the answer to this problem. Please do not invest our money, our future, our land into a short-term fix that will not ultimately benefit us. We do not have sustainable options which should be pursued such as wind, solar, and wave energy; this is what Hawaii has in great supply and should be the direction in which we invest! Please save our land for growing food, food that can feed the people of Hawaii, food that will release our dependency upon imported product. We have to recognize our strengths and focus our energy upon making the most of all our strengths here in Hawaii. The lar should not be sold, leased, or lent to greedy business owners who simply wish to get richer off the next scheme. I will be watching how you represent the people, I will let others know and we will not support people who make bad decisions for Hawaii!

other comments:
* So many of Hawaii's important efforts are sabotaged by basic avoidable human behavior. The Molokai Ranch issue is the most recent example; Supper Ferry; past efforts at mass transit, etc, etc * This issue is too important and needs to move forward now. * Do you have a plan to inspire comprehensive, collective collaboration? How can you ensure you will get 1.5 years into the process and have to abandon or worse put out a plan that doesn't have buy in or support. * Inviting all stakeholders to participate in the first step. Excellent facilitation is key. But also taking time to install not only a sense of urgency but a commitment to work together until the work gets done. How have other communities done this? what skills do the participants need? What will happen if we don't act now? *Re: TIMELINE Don't forget Sept 5 @ HCC. There seems to be a strong call for more dialogue. Lots of Ag folks will be in town - neighbor islanders - this would be good time to fill in info for your 12/08 draft.
1. Be honest about competitiveness of Hawaii biofuel production. 2. Consider **total** carbon footprint of island & imported biofuels & internalize costs to retailers. 3. Develop & use sustainability assement for biofuels, domestice & imported.
* We should have a working group that focuses on regulatory barriers (identifying barriers and recommending solutions - need to include identification of agencies involved.) * Discussion needed on infra-structure challenges, opportunities, private-public partnerships to put necessary infrastructure in place to support the objectives of the master plan.
How does this process integrate with the HCEI working groups efforts?
Policy-If Hawaii pursues large-scale bioenergy development, then energy, land, and water use policy will have to be integrated together in a way that is not currently being done. Historically, Hawaii has led the nation in this area by enacting and implementing the nation's first statewide planning system and was also the first state to adopt a state plan as law. Unfortunately, the Hawaii State Planning Act (Ch. 226) has not been kept updated and is not longer used to drive policy decisions. The need for a Hawaii to clearly identify its energy, land, and water policy in a statewide plan is more crucial now because bioenergy is more land and water intensive than other sources of energy. It is therefore critical for bioenergy planning to be consistent with a land and water use planning. By setting priorities that balance bioenergy's needs against other land and water uses, Hawaii's path to bioenergy use will be more efficient and successful. Once priorities have been set, meaningful goals that coordinate bioenergy production and use can follow. Technology -- There are many options for converting and refining biofuels, but is helpful to remember they all come from four major feedstocks: 1) sugar and starches, 2) Ligno-cellulosic, 3) landfill gas & biogas, and 4) bio-oils. Ethanol is produced in 2 very different ways, either from fermentation of sugars (directly or through cellulose-to-sugar
processes) or by gasification of lignocellulosic material. Diesel is also produced in 2 very different ways, either by transesterification of bio-oils or by gasification of lignocellulosic material similar to the ethanol process. The fermentation of sugar and transesterification are fully-commercial processes. The gasification of lignocellulosic material is not a fully-commercial process. Zoning - Agriculture is not the only zone that produces bioenergy feedstocks. Forestry and urban zones can be large sources of lignocellulosic material.
I suggest that DBEDT give more attention to reducing our use of coal. Coal combustion is the primary culprit for climate change. Here in Hawaii we have a big incentive to move away from coal.
If biofuels are to be produced using seawater, special consideration must be given to pipe permits, and the like. Also -- it should be policy that all such pipes are the property of, and run by, the state.
Conveying comments received from others: 1. Establishment of long-term energy fund (such as Hawaii energy fund) to sustain and advance bioenergy/biofuel research relevant to Hawaii. This has been adopted in several states in the mainland includir Iowa, Ohio, New York, Connecticut and many other states. University becomes an important entity of driving biofuel-related research and technology development. This includes support for state-of-the-art bienergy-related research facility. 2. Value-added processing of residues/co-products of emerging biofuel industries for sustainable biofuel production. This essentially focuses on converting the low-value left-overs from biofuel industries (vinasses, stillage, algal cells) etc. to protein-rich product fo fishmeal/animal feed application. This is extremely imiportant as such residues account for 20 to 30% of total revenue from biofuel industries.