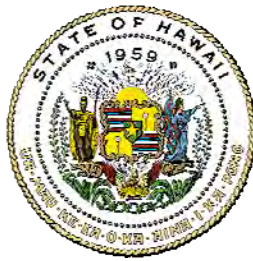


# Hawaii Bioenergy Master Plan

## Volume III Stakeholder Comment



Prepared for

State of Hawaii  
Department of Business, Economic Development and Tourism

By

University of Hawaii  
Hawaii Natural Energy Institute  
School of Ocean Earth Sciences and Technology



December 2009

# Hawaii Bioenergy Master Plan

## Volume III

### Stakeholder Comment

Comments on the Draft Hawaii Bioenergy Master Plan were solicited by posting the document on the Hawaii Bioenergy Master Plan website. More than 400 stakeholders were notified by email and comment was requested. Twenty-one responses were received from 18 individuals and organizations.

Responsibility for comment response and review was assigned to the author(s) of relevant task reports in Volume II or to the authors of Volume I. Author responses were incorporated in the Final Draft Hawaii Bioenergy Master Plan as summarized in the comment schedule.

The Final Draft Plan was additionally posted to the website for review by the commentators. Two commentators provided responses on the Final Draft Plan.

This volume reproduces the stakeholder responses on the Draft Plan and Final Draft Plan as received and presents them in the comment schedule. The schedule references individual comments from the stakeholder responses as well as the responsibility for review and response by Master Plan contributors. Each comment is associated with an individual or organization and, with the exception of the comments received on the Final Draft Plan, is identified by the beginning and ending line numbers in the stakeholder response.

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Commission on Water Resource Management's (CWRM) Comments on the Bioenergy  
Master Plan: Land and Water Resources Section

Global Comments

The State Water Projects Plan (SWPP) is an estimate of water use for only State water projects served by State-owned/operated water systems. To get a better estimate of water resource availability the Water Resource Protection Plan

([http://hawaii.gov/dlnr/cwrmp/planing\\_wrpp.htm](http://hawaii.gov/dlnr/cwrmp/planing_wrpp.htm)) should be examined. This plan includes ground and surface waer resource assessments and the existing and predicted uses of water as identified in the water use and development plans of the State and Counties. The City and County of Honolulu, the County of Maui, and the County of Hawaii currently have draft updates of their water use and development plans out for review. These plans can be used for a finer estimate of water resource availability on those islands.

The production of biofuels in Hawaii would likely rely on surface water for irrigation. Issues such as the setting of interim instream flow standards, restoration, appurtenant rights etc. are likely to create a conflict between instream and offstream uses of surface water. This will in turn create a huge challenge for large-scale biofuel production.

In the search for alternative sources of irrigation water, it may be useful to mention the findings of an appraisal report by the U.S. Department of the Interior's Bureau of Reclamation on the possibility of stormwater reclamation and reuse in Hawaii. This report is available on the Commission's website at:

[http://hawaii.gov/dlnr/cwrmp/planing\\_augmentation.htm](http://hawaii.gov/dlnr/cwrmp/planing_augmentation.htm)

CWRM maintains databases that include information about permitted water use allocations in water management areas, and reported ground and surface water uses throughout the State.

As this section heavily cites the work of the 2007 Hawaii Agricultural Water Use and Development Plan (HAWUDP), the Hawaii Department of Agriculture should be allowed to comment before the section is finalized.

LINDA LINGLE  
Governor



SANDRA LEE KUNIMOTO  
Chairperson, Board of Agriculture

DUANE K. OKAMOTO  
Deputy to the Chairperson

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October 2, 2009

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To Whom it May Concern:

We have serious concerns about including any material from the draft Hawaii Agriculture Water Use Development Plan (HAWUDP) 2008 in the report, either in the body of the report or as an issue report. The draft HAWUDP 2008 report was removed from our website because of concerns about the accuracy of the report, the methodologies employed by the contractor and the findings and conclusions. All of the parties that have reviewed the draft report (it is still a draft and has never been accepted by HDOA) have concerns. This includes HDOA, CWRM, the Board of Reclamation, and the Hawaii Farm Bureau Federation. We have conveyed these concerns to CTAHR as well as our intent to not release it until all the facts can be verified.

In addition to our objection to using the draft HAWUDP 2008 in the Bioenergy Master Plan, we also have the following comments and corrections:

- Water availability is definitely a major component of having a viable and successful bio-energy program. The Bioenergy Plan does not address a comprehensive way to increase or protect the water supply of the islands. Some of the strategies to make the water pie bigger for everyone can include the following: (1) Watershed protection and improvement programs. A healthy watershed helps to retain water for aquifer recharge and reduce run-offs. Activities may include reforestation, invasive species control, fire prevention, and ungulate animal control. (2) According to the report open ditch irrigation system conveyance or system losses can be 40% or higher. System losses can be reduced so that more water is made available for the actual irrigation of crops. However ditch improvement and repair projects are capital intensive and will need the support of CIP monies. (3) The Commission on Water Resource Management had looked into using storm water to recharge the aquifer. This could be another way to increase water availability.
- Some of the water availability data in the report is wrong or misleading. For instance, the maximum capacity of the Waiahole ditch is not 100 mgd, but is closer to 50. The current average irrigation use is only 5 – 6 mgd, not 32. (Page viii). More importantly the availability of water in this system is decided by the Commission on

Water Resource Management (CWRM) due to the Waiahole contested case. Only about 10 mgd of Waiahole water is actually available for crop irrigation on central Oahu. Some of the ditches on Maui are currently under study by the CWRM. Most likely not all water is available for crop irrigation.

- In places where sugar has been out for a while such as Kekaha, Kauai, even if the irrigation systems are still functional, the cost to rehabilitate them to deliver the amount of water needed for high water consumption crops could be prohibitive.
- Corrections are needed on Page 19, Table 6. The Kekaha system is operated by ADC and the water source is state owned.
- Pg. 20, Table 7 should be corrected to show that Lower Hamakua is owned by the State with appropriate easements over any private land.
- The AVG Water Use Column on Table 1 on page viii does not reflect actual water use for crops. Listing the diversion capacities is misleading as most the infrastructure was built in the early 1900's when no environmental considerations were in place. Many of these systems are limited by law, or the structure has been permanently altered to return water back to the streams. In addition, not all of the water diverted is used for agricultural purposes. In the case of Upcountry Maui, we estimate less than a million gallons per day are used for agricultural purposes, nowhere near the 17 million gpd mentioned.
- Water duties for crops seem to underestimate the actual amount of water that the farmer uses. For example if overhead spray is typically used to control pests, it is not mentioned or accounted for in the calculation.
- The use of an agriculture potential scoring system does not make any sense for certain irrigation systems because the amount of water availability for irrigation use is decided by the CWRM and not by the actual physical availability.
- About 8,600 acres of former Campbell Estate land on central Oahu have been sold to the Actus-Army Housing, seed corn companies and vegetable farmers. The availability of these lands for energy crop production is highly unlikely and should be subtracted from the Oahu land inventory. (page 38).
- In west Kauai, about 5,000 acres of state land have been licensed to various seed companies and aquaculture operations for the next 20 years. In Waimea another 3,000 acres of private land (Gay and Robinson) were leased to a seed corn company last year. So these lands need to be subtracted from the total available land from Kauai.
- The current service area of the East Kauai system is closer to 4,000 acres, not 5900. (Page 138).

Hawaii Natural Energy Institute

October 2, 2009

Page 3

- It is a DLNR practice to issue revocable permits to ranchers on state land that is zoned for agriculture. If all the state-owned agriculture land managed by DLNR were made available for bio-fuel or bio-energy production, what will be the impact on the cattle industry?
- Page 61, there are no longer dairies on Oahu, therefore manure isn't available.
- Projected crop acreage on page 18, in some instances does not reflect current acreage, according to industry numbers. These numbers need to be verified.
- Information on Table 4, beginning on page 18 needs to be verified. Ownership and operator information for some state systems seems to be in error.
- Chapter 4 is basically taken straight out of the HAWUDP 2008, with occasional references to a 2007 HAWUDP. Again, we reiterate, the HAWUDP 2008 (nor any 2007 update) has not been accepted by the DOA yet and as such, all references to it, and conclusion drawn by it needs to be removed from the bio-energy report.

If you have any questions, please contact Duane Okamoto, Deputy, at 973-9553.

Sincerely,



Sandra Lee Kunimoto  
Chairperson, Board of Agriculture

1 Thank you for the opportunity to review the master plan and provide  
2 comments. Overall, the study is comprehensive and thorough. My comments  
3 are limited to the section on DISTRIBUTION INFRASTRUCTURE FOR BOTH MARINE  
4 AND LAND.

5  
6 1. Page 18, last paragraph. This fuel company identified is Aloha  
7 Petroleum and they have transmission pipelines between their storage  
8 facility and Kalaeloa Barbers Point Harbor used for distribution. The  
9 proper name of the harbor is: Kalaeloa Barbers Point Harbor.

10  
11 2. Page 31, 3rd paragraph. I believe the correct term is "...fuel hatches  
12 on docks..." We don't use "fuel hatched" to my knowledge.

13  
14 3. General comment. The transmission pipeline system between Campbell  
15 Industrial/Kalaeloa Barbers Point Harbor and Honolulu is typically referred  
16 to as the "energy corridor."

17  
18 Mahalo nui loa

19  
20 .....  
21

22  
23 Dean Watase, Planner  
24 State Department of Transportation, Harbors Division  
25 79 South Nimitz Highway; Honolulu, Hawaii 96813  
26 Phone: (808) 587.1883 / Fax:: (808) 587.2504



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October 2, 2009

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Subject: Comments - Hawaii Bioenergy Master Plan

It appears that you have entirely overlooked one of the key factors in the way of attaining a viable energy program in Hawaii. That is, the role of HECO and its subsidiaries in the overall scheme of things.

As things stand now, HECO and the PUC represent an impediment to electrical energy development. When the regulations are so restrictive that privately generated power cannot cross a TMK boundary or Puna Geothermal Ventures is restricted in the amount of power they can sell to HELCO it really limits the incentive for private industry to invest capital and get creative in terms of power generation.

The relationship between HECO and the PUC and the associated regulations governing electrical power generation needs a thorough review.

Sincerely,

Robert Ely, P.E.

Line Ref	Page	Comment
		<b>Program Level Coordination</b>
1	iii	Add OHA as a member of the Bioenergy Technical Advisory Group. Also recommend a rep from the Department of Taxation so that they become part of the solution and not a roadblock down the road.
2	iii	RE: Updated List of State & Federal Incentives Recommend we go a step further and set up a grant-writing organization to assist farmers in obtaining grants. Farmers are too busy farming.
3	iv	I would ADD: Form a bioenergy industry association. Program takes the lead, forms the association, and then turns it over to the membership once it can stand on its own feet. Support the organization financially until it can eventually become self-supporting.
		<b>Value Chain Co-Dependencies</b>
4	v	RE: Provide funding for a full-time, tenure track, faculty position in CTAHR  This position also needs to come with dedicated <b>major</b> funding necessary to conduct the research and get the job done. Otherwise he will spend all his time chasing funding rather than getting the job done.
5	vi	ADD: Develop mandates that all state agencies must use biofuels thus developing an early market. There is already some language to that effect but it may need to be made stronger.
		<b>1.3 Approach to the Hawaii Bioenergy Master Plan</b>
6	8	Para 1.3.3 Somewhere in the document it would be worthwhile to have a diagram(s) showing the components of the bioenergy system and the interrelationships and interfaces with other entities.
		<b>2.1 Water and Land Resources</b>
7		Overall comment:  This section is very disappointing. Poorly written, not much useful information. Not well structured. Needs a major rewrite. This is a very important section that really needs to lay out all the land and water issues in an easy to follow, logical, and useful way.

Line Ref	Page	Comment
8	13	<p><b><i>“Input from Stakeholders</i></b></p> <p>Input from project stakeholders (participants of April 2, 2009 meeting and SunFuel):  i) regarding critical information for decision making on bioenergy crop production,  ii) current land and water resource availability and constraints, and iii) actions needed to be taken in the near-term that would address the priority constraints.”</p> <p>This does not make sense as written. Maybe just language. Do the following paragraphs represent the stakeholder input? If so, it would be helpful to say so.</p>
9	16	<p>Table 1 is difficult to follow and the explanation following the table difficult to understand. Perhaps the table can be reconstituted into 2 tables. What can we deduce from all these facts? What is the message here? Do we have enough land and water to grow bioenergy crops?</p>
10	18	<p>Re: Figure 3: Projected Crop Acres</p> <p>The sugar plantation on Kauai is shutting down this year. Am I missing something or hasn't all the pineapple production shut down on Oahu? Yet we are showing thousands of acres in 2030? What about eucalyptus, koa, and mahogany tree farms?</p>
11	19	<p>In addition, the current lands used for agriculture and forest plantings must be maintained despite reduction in sugarcane and pineapple production.</p> <p>This is not a further study item. It is an action item.</p>
12	19	<p>“This study does not address potential climate change impacts on Hawaii agriculture. A thorough study is needed to assess the impact of potential climate change on natural resources, especially water resources of Hawaii. Availability of irrigation water will be one of the key factors for bioenergy crop production.”</p> <p>In my opinion a waste of time and money. How can we possibly predict this? Why not just makes some worst case, best case, and business as usual assumptions?</p>
13	19	<p>Increase supply of traditional and/or non-traditional but sustainable water for bioenergy and biomass crops by developing or enhancing current and new water infrastructure.</p> <p>Should this not state " Conduct a study on ways to increase the supply of sustainable water for biomass crops".?</p>

Line Ref	Page	Comment
14	19	<p>Further support of the objectives of water and land Tasks and/or Plan implementation pursuant to Act 253 regarding Hawaii renewable biofuels program to manage the State's transition to energy self-sufficiency based in part on biofuels for power generation and transportation.</p> <p>I have no idea what this means and is it relevant to this section?</p>
	20	<b>2.2 Distribution Infrastructure for Both Marine and Land</b>
15		<p>Comments:</p> <ol style="list-style-type: none"> <li>1. This section reads well as far as it goes but seems light on details. I understand it is a summary and maybe there are details in the actual report.</li> <li>2. Could use examples of what types of compatibilities need to be addressed. Materials - types of steel, gaskets etc. These may be covered in the actual body of the main report.</li> <li>3. So what actions need to be taken to install the right infrastructure? Is there a plan and budget? Do we need to make an inventory of existing infrastructure and then show what needs to be augmented?</li> <li>4. What are the next steps?</li> </ol>
	22	<b>2.3 Labor Resources and Issues</b>

Line Ref	Page	Comment
16	22 Para 2	<p>Beyond these available sources, training and education might be a long term strategy for filling biofuel labor needs.</p> <p>How much training does lower-skilled and lower paid labor need? Probably not much which is why they are in that category to start with.</p> <p>Can these people make more money living on the dole in which case, what is the incentive for them to take on hard manual labor in ag? For a few pennies less, I am happy to sit on the beach.</p> <p>This may point to a strategy then of replacing low-skilled labor with moderately to high skilled labor that operates sophisticated mechanical that automates the whole process of planting and harvesting equipment.</p> <p>In such a case there will be a requirement for equipment operators and maintenance personnel. If the machines have robotics capabilities then there will be a need for software developers and electronic technicians.</p>
17	22 Para 4	<p>It is not yet clear how a biofuels industry – and in particular which parts of the value chain are best located in Hawai'i.</p> <p>This comment should be explained in more detail. Given that the objective is for Hawaii to become energy self-sufficient, what parts of the value chain would be located outside of Hawaii?</p>
18	22 para 4	<p>Such a comprehensive approach towards supporting the biofuels labor market as part of a broader green energy agenda makes most sense from the view that investment in biofuels skills development will be at the leading edge of efforts to make the state an innovator in green industries.</p> <p>Could this be stated in a different way? I really do not understand the point that is being made.</p>

Line Ref	Page	Comment
19	22 para 5	<p>One of the biggest challenges in Hawai'i is the wages/cost-of-living ratio. Biofuels-related jobs in the state must provide "livable" wages that meet baseline needs of state residents as well as show potential for keeping up with steep rises in the consumer price index. In any case, the high and rising cost of living in Hawai'i strongly suggests that the lower end of the biofuels jobs spectrum may not be attractive if other employment opportunities are available that pay above the minimum wage.</p> <p>Many believe the age of cheap energy is over and of course we have had a sneak preview of what that is going to be like. As the price of fossil fuels rises, then bioenergy solutions will be come more cost effective and will generate enough money pay for the labor required to produce it. This will be a paradigm shift in the market.</p>
20	23 para 3	<p>Such outreach is likely to create industry loyalty and identity since the size of the biofuels workforce is not likely to be large. This will increase labor channeling and networks that are easier to carve out as a stable employee base with less training;</p> <p>I do not understand what this means.</p>
21	23 Para 4	<p>lower-wage occupations to be performed by workers outside of the state of Hawai'i, where they are likely to be more livable wages.</p> <p>Are we saying we import the workers from outside the state to harvest the crops on a specific job basis? A return to the plantation model?</p>
22	23 Para 4	<p>State incentives should be focused on those investments that will enable the labor market to achieve a critical mass that becomes self-sustaining over time, rather than as a permanent subsidy.</p> <p>As per a previous comment, if energy costs go up, then the industry may well be able to pay livable wages. Right now we are pumping \$7 billion a year out of Hawaii to pay for oil. That pays for a lot of farm labor.</p>
23	23 Para 4	<p>Thus, legislators should promote a model of workforce development in which biofuels training is connected to a broader effort to promote green technology jobs in the state.</p> <p>I think I understand it but would be good to have an example of what is being driven at.</p>
		<b>2.6 Financial Incentives and Barriers and Other Funding</b>

Line Ref	Page	Comment
24	27	<p>Act swiftly to capture funding made available through the American Recovery and Reinvestment Act of 2009.</p> <p>This funding has a short time to run. I doubt that we can get our act together quick enough to get very far down that path. What is need is sustained funding that can be counted on year after year that allows the development of a real program that does not suffer starts and stops.</p>
	29	<b>2.7 Business Partnering</b>
25		<p><b>Provide “first-mover” incentives</b></p> <p>In order to motivate the industry and build capacity in functions supporting the bioenergy industry, the State can provide incentives for early implementation of bioenergy production.</p> <p>How about the State provide the funding to build the first major plant such as a state-owned ethanol plant? Put it out to bid to have the private sector manage/operate it. The state can sell it after it has demonstrated economic viability."</p>
26	50	<p><b>ECONOMIC IMPACTS</b></p> <p>Overall comment: The Economic Impact section is weak. It speaks in generalities and does not provide specifics. Generalities need to be backed up with specifics.</p>
27	69	<p><b>Program Level Coordination</b></p> <p>What is needed is a coordinating AUTHORITY" that has the authority to be the referee over all these competing stakeholders including state agencies who seem to be working at "cross purposes" to one another. By all means have dialog but at the end of the day how is a FINAL decision made? At the moment it seems the decision-making process is "stove-piped" with little coordination and over arching authority.</p> <p>It might be useful to prepare a diagram of how decision are currently made (or not made) and then formulate a structure that would work. There then needs to be legislation to provide the authority required.</p>

**COMMENTS OF THE GAS COMPANY (TGC) ON  
DRAFT HAWAII BIOENERGY MASTERPLAN**

1. General comment: The draft quotes Act 254 Part III, which states in pertinent part: “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.” (Emphasis added.) The draft points out that solid and liquid biofuels are more easily transported from source to end user, both intraisland and interisland. (p. 3) As a result, the draft almost wholly overlooks biogases that can be used to displace petroleum products, including in uses *other than* power generation and transportation (e.g., in fuel substitution for cooking, drying, etc.). TGC believes that biogases can play a significant part in reaching the State’s goal of 20% displacement of petroleum consumption by 2020.

TGC’s primary concern in this connection is that the acknowledged focus of the Master Plan document and its recommendations (on solid or liquid biofuels for transportation and power generation) should not unintentionally result in the exclusion of biogases from eligibility for various benefits accorded to other biofuels, whether these benefits might come in the form of grants, tax incentives, subsidies, loans, bonds, expedited permitting, or any other form.

**A. COMMENTS ON VOLUME 1**

2. Pages vii- x—Roadmap Action Items: Item 1. TGC would like to ensure that biogases are eligible for any “tax credit based on green house gas reductions resulting from the displacement of fossil fuels by bioenergy products that accrues to Hawaii bioenergy feedstock producers and bioenergy conversion facilities.” Similarly, TGC would like for biogases to be eligible for any economic stimulus or other funds captured by the State for purposes of biofuel development. See comment 1.
3. Item 2: page viii: First line—TGC recommends that there be 3 utility representatives on the bioenergy technical advisory group, one each from the HECO Companies and KIUC, and one from TGC.
4. Item 4, page viii: TGC supports the development of a methodology for evaluation of bioenergy products on a lifecycle basis, for access to State lands or State funds. TGC asks that the drafters consider whether a “short form” (“certification EZ”) of analysis could apply to pilot projects or projects using as feedstock “waste” products, whether these are green waste, other landfill waste, residues from wastewater treatment plants, used oils and fats, or other.
5. Item 7, pages viii-ix: This action item is: “Provide a \_\_\_% tax credit for investments made to convert existing infrastructure to be compatible with bioenergy products or for construction of new infrastructure components for transporting and distributing bioenergy products derived from bioenergy feedstocks that are produced in Hawaii. The credit will be available in the first year that 50% of the total product volume of the infrastructure



component is a bioenergy product.” See comment 1--biogases should be included among the bioenergy products and bioenergy feedstocks eligible for any credit. Likewise, biogases should be eligible for any “funding mechanisms to leverage federal and private funds and support demonstration projects,” “bioenergy/biofuel development funds to support research and technology development and demonstration,” and “incentives for early implementation of bioenergy production.” These are action items from the Roadmap that apparently have not been assigned a priority for immediate near term action.

6. P. x: Consider adding the underlined language to the candidate projects to verify conversion technologies:
  - oil crop production, harvesting, and oil extraction from the crop product with multiple uses for the oil such as biodiesel or biogas production via transesterification, thermal cracking, hydrotreating for renewable diesel, and direct firing of the vegetable oil; ...
  - gasification or reforming of biomass to produce a syngas for direct use or use in the production of renewable electricity or biofuels that may include renewable diesel or other synthesis products;...”
7. Section 1.3.1, page 5: per comment 1, consider adding the underlined language so the implication is not that solid and liquid biofuels are the only possible products:
  - 1.3.1 Bioenergy Industry Value Chain
  - The bioenergy industry involves the production of biomass-based energy products, including solid or liquid biofuels, from raw materials for commercial sale.
8. Section 1.3.1, page 6: consider adding the underlined language:
  - 3. Conversion -- Transformation of the processed feedstock to gaseous, liquid or solid fuels.
9. **Distribution Infrastructure for Both Marine and Land**, p. 20. TGC recommends that biogas infrastructure be analyzed, along with liquid biofuel infrastructure.
10. Section 2.4, **Technology to Develop Bioenergy Feedstock and Biofuels**, pages 24-25: Recommendations include:
  - 3. Support demonstration project development along the bioenergy value chain including energy crop production, transportation and logistics, and processing and conversion technologies. The State should develop funding mechanisms to leverage federal and private funds and support demonstration projects. ...
  - 5. The State should provide low-or-no cost land leases and expedited permitting to support pre-commercial bioenergy demonstration projects.
  - 6. Hawaii should establish a bioenergy/biofuel development fund to support research, and technology development and demonstration where University of Hawaii and Hawaii-based industries should be encouraged to jointly participate. ...See comment 1.

- 93  
94 11. Table E.1, page 25—This table portrays a characterization of the development  
95 status of various biomass conversion technologies. For the information of the  
96 drafters, TGC is working with other companies on one technology that is not  
97 listed there: biogas production/conversion via cracking of waste fats, oil, and  
98 grease. TGC is getting ready to move into the pilot phase on this project. (See  
99 page 83 of the report.)  
100
- 101 12. Section 2.5—**Permitting**, page 26: The Renewable Energy Facility Siting  
102 Process (REFSP) pertains to permitting of facilities that produce renewable fuels  
103 for electricity generation and biofuel production. The thresholds for eligibility for  
104 this process are stated in terms of MW and gallons. The absence of any  
105 gaseous volume (e.g., Mcf) or energy content (e.g., MMBtu) threshold in HRS  
106 209N-1 might be deemed to foreclose renewable products producing or  
107 converting feedstock into gaseous fuels from the threshold, and thus from the  
108 guarantee that permits not acted upon within 18 mos. will be deemed to be  
109 granted. The units referenced in this and other legislation should be neutral or  
110 broad enough to encompass all biofuels. See also comments 31-33.  
111
- 112 13. Section 2.7, **Partnering**, p. 29: The following is one of the recommendations:  
113 **Provide “first-mover” incentives**  
114 In order to motivate the industry and build capacity in functions supporting the  
115 bioenergy industry, the State can provide incentives for early implementation of  
116 bioenergy production.  
117 See comment 1.  
118
- 119 14. Section 3.1, page 42: Second line, consider adding biogas to the list of useful  
120 bioenergy products. See comment 1.  
121
- 122 15. Page 47: See comment 10; TGC supports the recommendations in item 3  
123 (development of State funding mechanisms to leverage federal and private funds  
124 in support of demonstration projects) item 5 (the State should provide for  
125 expedited permitting to support pre-commercial bioenergy projects; item 6 (the  
126 State should develop a bioenergy development fund to support research and  
127 technology development and demonstration where Hawaii-based industries  
128 should be encouraged to participate). See also comment 1.  
129
- 130 16. Pages 47-48: TGC would like to see the statutory deadline of 18 months remain  
131 in place for the REFSP and be included for all renewable energy projects. See  
132 also comments 1 and 12. TGC would like to see the draft address where the  
133 proposed lifecycle analysis certification would fall with respect to permitting;  
134 would certification be a prerequisite, would it take place during permitting or  
135 concurrently, which branch would handle the certification process, and the like.  
136

17. Page 49, item 1, concerning “first mover” incentives that will reduce the financial, legal/regulatory, etc. risk of early adoption of substitution of biofuels for petroleum. See comments 1& 13.
18. Page 51: TGC supports in particular items 2 (Life-Cycle Analysis (LCA)) through 4, item 6 (concerning encouraging use of existing infrastructure), and 8, concerning a biofuel certification program.
19. P. 74, third line: re utility representatives on a bioenergy technical advisory group, see comment 3.
20. P. 74, TGC would like to be considered a “relevant stakeholder” in the development of a methodology for evaluating bioenergy projects based on the principles of life cycle assessment.
21. TGC wants to indicate its appreciation as to the thoroughness of the compilation and user-friendliness of the formatting of Appendix A of the draft, which should prove to be an invaluable resource.

## B. COMMENTS ON VOLUME 2

22. **Report 2-2, Distribution Infrastructure for Both Marine and Land**, Section 3.1, page 12, Figure 3: Substitute “LPG” for “JPG” at the bottom of the last column.
23. Page 14: “For example, if a significant supply of biofuels replaces some portions of the petroleum output at the local refineries, the displaced products might not find a market in Hawaii and would have to be exported. This would increase the costs of the local fuel industry. The introduction of biofuels would therefore immediately and significantly change the energy equation for the existing petroleum industry and might trigger investment needs for new petroleum fuel infrastructure, such as fuel terminals in the State harbors, storage tanks, and the like.”  
Changes in refinery operations due to biofuels can affect all refinery products, including the refinery output LPG and naphtha TGC purchases. Any study of the impact of biofuel demand on the local refineries should analyze the impacts with respect to all refinery products, and not just transportation fuels and fuel for electric generation.
24. Section 3.2, page 15, Figure 6: The blue arrow labeled “6 LPG Imports to Oahu” should be deleted. TGC is the only importer of LPG into Hawaii. TGC’s imports are not currently received on Oahu due to lack of the necessary pipeline infrastructure in Deep Draft Harbor.
25. Section 5.1, p. 30, **Basic Fuel Infrastructure Options**: Add “for Liquid Biofuels” to the title of this section, because biogas transportation and distribution are not discussed in the options outlined. (Or, add a biogas infrastructure discussion.)

26. Section 10.1, p. 49: “Another possible response to a decreased demand for selected petroleum products, which offer the highest margins for the refineries, might be reduction in production volume to match the change in demand pattern. Since this could result in an undersupply of selected petroleum products from the local refinery operations, such a response would require increased imports of refined petroleum products, which would most likely also increase costs for fuel in Hawaii.”
- It would be helpful to know which “selected” petroleum products are at risk to become undersupplied and see an analysis of what would be the ripple effects on the economy. See also comment 23.
27. Section 11, p. 50: See comment 1.
28. **Report 2.4 re Technology to Develop Bioenergy Feedstock and Biofuels**, p. 25: “In Hawaii, the sales of livestock products (beef, dairy, eggs and pork) declined by nearly 39% in the last two decades (Hawaii Department of Agriculture, 2007). Thus, the market for co-product is quite limited. This can mainly be attributed to lack of animal feeding operations, slaughterhouse facilities, and distribution network for meat products.”
- TGC observes that the revitalization of Hawaii’s livestock industry would improve co-product economics and food security as well as acting to increase fats, oils, and grease available for conversion into biogases.
29. Section 6, **Technology Development Status**, pages 63-64, states,
- “The conversion technologies identified in Figure 1 and their development status, characterized as pilot plant, demonstration scale, or commercial are summarized in Table 21. Technology development typically follows a path beginning with initial discovery in the laboratory and proceeding through a series of increasingly large scale systems to arrive at a commercial process. This approach is used to identify and solve problems at smaller and less costly scales prior to investing in a commercial unit and thereby reduce risk. Risks associated with developing new technologies are also reduced by using private/public partnerships to fund the construction and operations of smaller scale plants. Increases in scale for the purposes of technology verification often progress by factors of ~10. Pilot, demonstration, and commercial facilities might be constructed at scales on the order of <10, 100, and 1000 tons per day.”
- TGC supports these definitions of pilot, demonstration and commercial levels in Hawaii for incentive purposes.
30. Table 21, pages 64-65: See comment 11.
31. **Report 2-5, Permitting**, p. 75: “certain projects should qualify for preferential permitting treatment.” TGC supports this concept. First mover, shovel-ready projects are ones that TGC would like to see given priority for the expedited permitting process.
32. Pp. 76-77: HRS Sections 46-19.4, 196-1.5, and 226-18, concerning priority handling of renewable energy projects, lack teeth because they do not contain deadlines that will enable developers and investors to count on being able to put

even a small pilot plant into operation within a reasonable time. In any statutes regarding renewable energy project permitting, a specific deadline, based on the size and scope of the project, should be considered.

33. Section 6, **Recommended Further Improvements in Permitting**, pp. 84-86: TGC is generally supportive of the further improvements. Due to the fact that proprietary information may have to be submitted in permit applications, security beyond password protection for the e-submission may need to be considered.
34. Vol. 2-7, **Business Partnering**, p.4: see comment 13.
35. **Report 2-8, Economic Impacts**, p. 5. The report states that it focuses on estimating the costs and economic impacts of ethanol in Hawaii. It would be useful to have a future report address the economic impacts for biofuels more broadly.
36. **Report 2-9, Potential Environmental Impacts of Bioenergy Development in Hawaii**, section 6.9, p. 14: This section discusses production of biodiesel from waste vegetable oil collected from restaurants and other places, under the heading of "Residue Management." TGC would like to see a sample of the recommended cradle-to-grave accounting/net energy balance/net GHG balance analysis for this type of biodiesel conversion. (See comment 37, below.)
37. Section 8, pp. 17-20: TGC generally agrees with the Report's recommendations. However, TGC notes that the conclusion that "a certification program should be established prior to the development of new subsidies for biofuels in Hawaii" conflicts with prior reports advocating incentives for first movers and projects that are "shovel-ready." To reconcile the two positions, it would be useful to see the final Master Plan go into greater detail on the shape, scope and particulars of a recommended certification program, in order that it could be adopted more rapidly and enable first movers to move forward with their proposed projects.

1 Hawai'i Bioenergy Master Plan Project

2 Aloha:

3 I am Richard Ha. We farm 600 fee simple acres of various fruits and  
4 vegetables in Pepeekeo. In addition, I am treasurer of the Hawaii Farm  
5 Bureau Federation.

7 I have several comments regarding this master plan.

9 If oil is \$200 per barrel; one pound of that oil is worth 70 cents. Farmers  
10 estimate that it might take four pounds of stuff to make one pound of  
11 liquid. As a rough estimate, farmers know that the most they can get for the  
12 stuff they grow is approximately 18 cents per pound. It does not matter what  
13 the stuff is. The costs, to maintain, harvest, pre process and transport  
14 the stuff is related to oil prices. So, as oil price rise, cost of growing  
15 the stuff also rises. It is kind of like chasing the mechanical rabbit at  
16 the greyhound race track. The dogs never can catch the rabbit. So, small  
17 farmers will not likely become a major supplier of bio fuels.

19 Because of the commodity characteristics of bio fuel, the producers are  
20 likely to be larger industrial type agriculture participants. There are only  
21 a few places that lend itself to that kind of farming. It is reasonable to  
22 assume that food and fuel will be competing for the same land. There should  
23 be an analysis done to evaluate this.

25 There should be an Energy Return on Investment (EROI) analysis of the  
26 various types of biofuels so it can be compared against other energy  
27 alternatives. It is estimated that the EROI for oil was 100 to 1 in the  
28 1930's, i.e. it took one barrel of oil to get a hundred. This declined to 30  
29 to 1 in the 1970's and lately is hovering around 10-15 to 1 not too long  
30 ago. But, as it becomes more and more difficult to get oil, that ratio is  
31 steadily declining.

33 It has been estimated that an EROI ratio of 3 to 1 is the minimum necessary  
34 to maintain a sustainable society. <http://www.mdpi.com/1996-1073/2/1/25/pdf>.  
35 Biofuels are estimated to be less than 2 to 1.

37 This study should not exist in a vacuum. We know that electric vehicles are  
38 around the corner. What is the advantage of pursuing a product that has an  
39 EROI of 2 to 1 versus one like geothermal that has an EROI of approximately  
40 10 to 1 that will not decline for the foreseeable future.

42 It is my opinion that pursuing biofuels is the wrong solution to our energy  
43 problem.

45 Richard Ha  
46 President  
47 Hamakua Springs Country Farms

**Hawaii Cattlemen's Council, Inc.**

64-957 Mamalahoa Hwy

Kamuela HI 96743

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October 2, 2009

University of Hawai'i at Manoa  
School of Ocean and Earth Sciences and Technology  
Hawai'i Natural Energy Institute  
1680 East-West Road, POST 109  
Honolulu, HI 96822

Dear Hawaii Natural Energy Institute:

Thank you for the opportunity to provide comments on the Bio Energy Master Plan.

My name is Alan Gottlieb, and I am the President of the Hawaii Cattlemen's Council. The Hawaii Cattlemen's Council, Inc. (HCC) is the Statewide umbrella organization comprised of the five county level Cattlemen's Associations. Our 130+ member ranchers represent over 60,000 head of beef cows; more than 75% of all the beef cows in the State. Ranchers are the stewards of approximately 25% of the State's total land mass.

The following are comments collected for consideration in preparing the Final Bio Energy Master Plan.

- Any plan for developing biofuel crops should also include the potential effect on drinking water resources.
- Long-term impacts of planting a certain crop on land and other infrastructure need to be studied. For example, what happens when that crop is no longer in demand? Can the land be converted back for use with other crops? What would be the impact of discontinued production?
- Further understand Hawaii's water and land resources availability and constraints for bioenergy crops.
- Intensive bio fuel production year after year will have a depleting effect on the land. There is a cost to depleting soils - both in economic value and in environmental value. Soil is a resource and should be used to sustain things of critical value to humans, such as food.

UNIFIED AFFILIATE OF THE NATIONAL CATTLEMEN'S BEEF ASSOCIATION  
Hawaii Cattlemen's Association • Kauai Cattlemen's Association • Maui Cattlemen's Association  
Molokai Grazer's Association • Oahu Cattlemen's Association



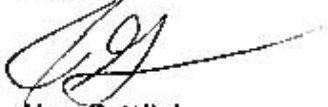
- It is imperative that any EIS or EA is a full blown Chapter 343 study with full citizen participation, etc. (not a "private" EIS)
- An EA or EIS should be conducted prior to enacting any projects
- Because bio fuel has commodity characteristics, the producers are likely to be larger industrial type agriculture. There aren't many places appropriate for that kind of agriculture. It is reasonable to assume that food and bio fuel producers will be competing for the same land. There should be an analysis done to evaluate this.
- The Islands don't have a lot of lands able to accommodate the mechanization. How much land available, where, what is the amount of energy that can be produced on the available land.
- Maybe the study should be focused on individual islands.
- What will be the effect of subsidizing bio fuel production on cattle grazing land? What is the food for energy tradeoff?
- A full spectrum of energy production should be considered, such as solar, solar-thermal, wind, wave and hydro power, and geothermal.
- Huge amounts of energy would be required to grow, process, and move bio fuels. There should be an Energy Return on Investment (EROI) analysis of the various types of biofuels so it can be compared against other energy alternatives.
- There should be an economic analysis of not only the biofuels projects, but the losses to commodities displaced by biofuels crops. For example, the Hawaii cattle industry has stated that its industry is dependent on a critical mass to help support its infrastructure (processing plants, transportation, marketing) and like dominos, key producers in the industry can quickly fall, if too much of their lands and productivity are lost. The small ranchers are especially susceptible, because without the big ranchers helping to support that infrastructure, everyone loses. If biofuel crops compete for and replace pasture lands, and the Hawaii cattle industry ceases to exist (as did the Hawaii Dairy industry when it lost its critical mass), what will the economic costs be to the State in both monetary terms and for its bio-security mandates.
- A suitable bio fuel byproduct may be fitting to feed to livestock, but, even if the feed is low cost or free, it would cost the producer to haul, store, and handle the byproduct. Fencing and free range foraging is an alternative to transportation and handling costs, and is healthier for the animals and the land.



- Accurate information on a reliable biomass feedstock supply, production and harvesting costs, and environmental impacts are among key factors for continued development of bioenergy production systems. Understanding the cost and the quality of biomass production is critical for evaluating the competitiveness of biomass as feedstock.
- The effects biofuel burning has on greenhouse gas emissions, and current Hawaii Greenhouse Gas emission reduction mandates, compared to other energy sources in Hawaii, such as Geothermal.

Thank you again for allowing us to comment.

Mahalo,



Alan Gottlieb

President

Hawaii Cattlemen's Council



October 2, 2009

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Subject: Comments on Hawaii Bioenergy Master Plan

This is to provide the Hawaii Farm Bureau Federation's ("HFBF") concerns and comments on the draft Hawaii Bioenergy Master Plan ("Plan") that is available for stakeholder comment at <http://www.hnei.hawaii.edu/bmpp/stakeholders.asp>. The Plan is an invaluable resource of information on the issues related to renewable biofuels in Hawaii, and it does an admirable job of addressing the issues and questions contained in Act 253, Session Laws of Hawaii 2007 ("Act 253").

HFBF is very concerned that the Plan may be accepted as a "green light" for aggressive pursuit of renewable biofuel development in Hawaii, with the unintended consequence of devastating Hawaii's agriculture industry. Agriculture in Hawaii is at a turning point. Whether it thrives with current interest in:

- increased food security, advancing the state's sustainability, developing Hawaii as a hospitality destination point with innovative and exciting culinary offerings; or

shrinks as its farms and ranches fall victim to the current recession and one-by-one succumb to

- increased cost-of-doing business, lackluster sales, escalating government fees and barriers, and shortages of land, water, and workforce resources

may easily depend on the actions taken as a result of the Plan.

Agriculture has been an integral part of Hawaii's fabric, since the days when sugar was king and pineapple fields covered the Ewa plains and much of Maui County. Since then, the State and its people have continually devoted a considerable amount of time and resources towards embedding diversified agriculture into the economy. The issues that Act 253 specifies are almost identical to those that have confounded the diversification and growth of State's agriculture industry for decades. Hawaii's farmers and ranchers continually struggle to find adequate land and water to support and expand their operations. On Maui, HC&S, Hawaii's last sugar plantation, may cease operations due to water limitations. HC&S CEO Allen Doane has publicly stated that:

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“... ongoing sugar losses triggered the comprehensive evaluation and that ‘the foundation of success’ will come from producing more sugar. The single biggest driver of production levels is water, and we are fortunate that rainfall has improved this year...”<sup>1</sup>

Is there enough land and water in the State to cost-effectively grow and harvest one or more crops to supply one or more facilities that will convert that feedstock into solid or liquid fuel for power generation or transportation<sup>2</sup>? It is counterintuitive to expend Hawaii’s limited financial and natural resources on the development of a commercial-scale biofuels industry while other renewable initiatives are advancing.

HFBBF has three lines of comment for the drafters of the Plan, the Hawaii Natural Energy Institute and its contributors (“HNEI”), as follows.

#1: The Plan should be clearer in its language, in order to avoid misunderstandings as to the viability of a bioenergy industry in Hawaii; an industry with all five components<sup>3</sup> operating to commercial-scale, as studied in preparation of the Plan.

- Feedstock Production – cultivation of biomass resources used in raw material inputs for biofuels production.
- Feedstock Logistics – Harvesting or collecting of feedstock from the area of production, then storing and delivering it to the conversion facilities.
- Conversion – Transformation of the processed feedstock to liquid or solid fuels.
- Distribution – Transfer of the fuel from a conversion facility to the point of retail sale.
- End Use – Purchase of the biofuel by the consumer.

#2: The Plan should be redirected to focus on demonstration projects that can benefit Hawaii immediately, without compromising the existing diversified agriculture industry and prematurely expending limited resources on an industry with, at present, questionable indicators of success. Examination of a bioenergy industry at commercial-scale could continue, but at a more conservative pace.

#3: The Roadmap Action Items should include agriculture as a whole, such that there will be benefits related to food security and economic development as further work on a potential bioenergy industry continues.

<sup>1</sup> Honolulu Star Bulletin, July 25, 2009; A&B Mulls Sugar’s future; [http://www.starbulletin.com/business/20090725\\_AB\\_mulls\\_sugars\\_future.html](http://www.starbulletin.com/business/20090725_AB_mulls_sugars_future.html)

<sup>2</sup> Act 253, SLH 2007, Part III, Section 4. (a): “The primary objective of the bioenergy master plan shall 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.”

<sup>3</sup> See Part I, Section 1.3.1 Bioenergy Industry Value Chain, page 6.

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Comment #1:

Clarify and Strengthen Conditions and Qualifiers

HFBBF urges HNEI to review the current draft and make revisions that will result in a document more “plain spoken” with respect to the conditions and qualifiers attached to its findings. This may help to avoid costly missteps following the issuance of the Plan.

A prime example of this is Outcome 1, which relates to the fundamental, underlying question, “Does Hawaii have the potential to rely on biofuels as a significant renewable energy resource?” The draft’s conclusion is:

“Assessment of the production factors of land, water, labor, infrastructure, and technology indicates that biofuels can provide a significant renewable energy resource for the state”<sup>4</sup>.

The draft Plan does not answer this key question with a “yes”, but the a reader may infer “yes”, conclude that the potential for a biofuels industry is beyond the information validated by the subject area experts that worked on the Plan, and go forward with a mistaken sense of certainty. Absent a reasonable expectation that a commercial-scale bioenergy industry could be cost-effective in Hawaii, there would be little reason to pursue the Roadmap Action Items with the aggressive deadlines listed.

It is very alluring, to envision a “... bioenergy industry based on locally sourced biomass of sufficient size to displace a significant amount of imported petroleum ...” such that “... Hawaii could enjoy greater economic stability and retention of dollars spent on imported fuels ... “and with “... long-term benefits for Hawaii’s environment while creating jobs and strengthening the state’s energy security.”<sup>5</sup> Is this realistic? With Hawaii’s limited land and water, and noncontiguous land masses, are there adequate resources to develop the feed stock and to support the conversion of that feedstock to liquid or solid fuel that can be used in power generation or transportation? What is the likelihood that a Hawaii conversion system can accommodate more than one type of feedstock, and that one type of feedstock can be grown and harvested throughout the state and transported to a single conversion point? Would more than one conversion point be required? Would such a system be cost effective at any escalated cost of oil? What compromises would have to be made to develop this system? Reduced food security with further reductions in diversified agriculture? Would a bioenergy industry result in even more low skill / low wage jobs in Hawaii that are unlikely to pay a living wage, and exacerbate existing social issues?

The Roadmap Action Items<sup>6</sup> and the summaries of studies on industry issues<sup>7</sup> highlight the need for further study before plans for a bioenergy industry proceed to scale. The following are just a few example of language found throughout the draft Plan.

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<sup>4</sup> See page 42, Section 3.1, Conclusion.

<sup>5</sup> See Section 1.1.2. The Role of Bioenergy in Hawaii’s Energy Mix, last paragraph above Section 1.2 on page 4 of the Executive Summary.

<sup>6</sup> See pages iii through vi of the Executive Summary.

<sup>7</sup> See Part 2. beginning on page 10.

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<b><u>Industry Issue</u></b>	<b><u>Quote from Hawaii Bioenergy Master Plan</u></b>	<b><u>Cite</u></b>
<b>Land and Water</b>	In the optimistic scenario, state farm-level demand for water would grow to around 750 MGD in the year 2030 if all crops are fully irrigated, which is more than double the latest USGS estimate ... of irrigation water use for all purposes with an increase demand by another 35 MGS of irrigation water for new bioenergy crops beyond current sugar operations.... To meet these future needs, further study is needed regarding allocation and development of the state's water resources.	Last paragraph on Page 17 of Section 2.1 on Water and Land Resources
<b>Land and Water</b>	This study is just one phase of an evaluation of resources for bioenergy crop production and the potential of this renewable energy resource. We hope the issues raised in this report will be addressed in future phases.	Last paragraph on Page 18 of Section 2.1 on Water and Land Resources
<b>Land and Water</b>	Detailed studies are needed with regards to: i) Ground Water Resources, Locations, and Potential Yields, ii) Surface Water Sources, Locations, and Potential Yields, iii) Surface Water Diversions and Locations, iv) Modeling and economics of biofuel crop production, v) Potential Use of Reclaimed Water, and vi) Implementation of Important Agricultural Lands (IAL) classification.	Second to the last bullet on Page 19 of Section 2.1 on Water and Land Resources
<b>Labor Resources and Issues</b>	One major labor market question discussed here is whether the state's workforce could support a vibrant biofuels industry. Should Hawaii's bioenergy industry require the growing and harvesting of agricultural crops, particularly plantation grown crops, there may be a significant need for a lower-skilled labor force similar to that required for sugar cane production.	Second paragraph from the top of Page 22 of Section 2.3 on Water and Land Resources



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<u>Industry Issue</u>	<u>Quote from Hawaii Bioenergy Master Plan</u>	<u>Cite</u>
<b>Technology to Develop Bioenergy Feedstock and Biofuels</b>	<p>Harvesting was a common technology gap identified for terrestrial crops.</p> <p>A summary of the assessment of conversion technologies is presented in Table E.1. The development status of each technology has been characterized as pilot, demonstration or commercial facilities that might be constructed at scale on the order of &lt;10, 00, and 1000 tons per day. All of the technologies identified in the table were deemed appropriate for Hawaii.</p>	Second and third paragraphs from the top of Page 24 of Section 2.4 on Technology to Develop Bioenergy Feedstock and Biofuels
<b>Environmental Impacts</b>	<p>The State should commission a study to examine the potential issues related to agricultural land use and biofuels. The potential impacts to local agriculture from introduction of large-scale biofuel development may be significant. Of particular importance is the potential loss of local food-crop production as prime agricultural lands are shifted to biofuels and other non-agricultural uses.</p> <p>The study should examine how existing agricultural practices and use of land, including small farming and ranching, may be impacted by the introduction of incentives and subsidies for biofuels. This should include an analysis of food security and food security issues in Hawaii. The study should also examine how the conversion of prime agricultural lands to non-agricultural uses may affect biofuels development and long-term viability.</p>	Item 5 on Page 33 of Section 2.9 on Environmental Impacts

Big Island farmer and HFBF member, Richard Ha, expressed the limitations of a full-scale bioenergy industry in Hawaii in his comments on the Plan. The following is from his e-mail to HNEI:

If oil is \$200 per barrel; one pound of that oil is worth 70 cents. Farmers estimate that it might take four pounds of stuff to make one pound of liquid. As a rough estimate, farmers know that the

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most they can get for the stuff they grow is approximately 18 cents per pound. At today's oil price of approx \$70 per barrel, the farmer gets 6 cents per pound. Better to grow cucumber.

The only way this works is if there are massive subsidies that we will pay for. Why?

It does not matter what the stuff is. The costs, to maintain, harvest, pre process and transport the stuff is related to oil prices. So, as oil price rises, cost of growing the stuff also rises. It is kind of like chasing the mechanical rabbit at the greyhound race track. The dogs never can catch the rabbit. Small farmers will not become a major supplier of bio fuels.

Because of the commodity characteristics of bio fuel, the producers are likely to be larger industrial type agriculture participants. There are only a few places that lend itself to that kind of farming. It is reasonable to assume that food and fuel will be competing for the same land. There should be an analysis done to evaluate this.

Until a number of the critical conditions and qualifiers listed throughout the Plan are fully vetted, it is premature to proceed to scale with a program designed to result in significant amounts of fuel capable of replacing refined petroleum products used for power generation and transportation. Hawaii's ambitious plans for utilizing its natural resources to replace oil-fired electric generation is proceeding, and aggressive pursuit of bioenergy fuels can only divert resources from that effort. The Plan acknowledges that "... the large scale production of biofuels has become a national conversation with the realization that biofuels choices have consequences that may impact the environment in ways that may be beneficial or harmful, depending on the feedstock selection, production and conversion processes, and end products. The national and international experiences and Hawaii's unique environment and culture as well as land and water constraints demand an inclusive approach to industry planning.<sup>8</sup>" It may be wise to optimize the Hawaii natural resources that can more directly produce electricity, and leave large-scale biofuel production to the mainland, with its vast farmlands and the quantities of biomass that can support a facility capable of conversion to liquid fuel usable by most ground transportation vehicles. Further, advances in electric and hybrid vehicles and the planned mass transit system on Oahu may soon redirect priorities from the need for liquid fuel to electric power generation.

Comment #2:

Adjust Focus of Plan to Biofuels Demonstration Projects

To the extent it may be equally premature to abandon Hawaii's opportunities for a bioenergy industry, HFBF suggests that HNEI adjust the focus of the Plan to the biofuels demonstration projects discussed in Outcome IV. This could compliment the State priorities by:

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<sup>8</sup> See Section 1.3.2. Industry Stakeholders, beginning on the last paragraph of page 6.

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- continuing research on the viability of biofuels, but on a variety of alternatives, rather than honing-in on a limited number of feed stock sources or technologies,
- investing in the University of Hawaii, such that it becomes as an international center for bioenergy development, in a manner similar to the international dominance in the field enjoyed by the Hawaii Sugar Plantation in the days when sugar was in its prime,
- taking advantages of Hawaii's location, climate, intellectual resources, and
- avoiding prematurely compromising Hawaii's current agriculture industry.

In addition to the obvious inherent benefits that may accrue from a world class center for bioenergy research at UH, the related advances in water, land, infrastructure, workforce, and other aspects would greatly benefit Hawaii's agriculture interests and also advance food security. The Roadmap Action Items should continue, but addressing the question of "whether" a full-scale biofuels industry is workable in Hawaii, and not "how" to develop a full-scale biofuels industry within the next 30 years.

Comment #3:

Include Diversified Agriculture in the Roadmap Action Items

Almost all of the Roadmap Action Items<sup>9</sup> relate to initiatives that have great potential to benefit diversified agriculture. Many of the items already consider the existing agriculture industry. HFBB asks that the Roadmap Action Items be revised to incorporate diversified agriculture at every opportunity. The following are examples.

- In seeking synergy<sup>10</sup> between the bioenergy master plan and the Hawaii Clean Energy Initiative goals, food security and other goals for the State should also be considered.
- When positioning<sup>11</sup> Hawaii's bioenergy strategy in the context of vital State interests such as energy security and greenhouse gas emissions reduction targets, food security and the environmental benefits of diversified agriculture should be included.
- When assessing<sup>12</sup> the influence of new groundwater resources for biofuel production on aquifer recharged and estimated aquifer sustainable yields, water for diversified agriculture should be included.
- While maintaining<sup>13</sup> the land currently used for agriculture and forestry, and additionally, increasing land available for bioenergy use sufficient to support biofuel production, consideration should be given to using that land for diversified agriculture.

<sup>9</sup> See pages iii through vi of the Executive Summary.

<sup>10</sup> Page iii of the Executive Summary, 4<sup>th</sup> item from the bottom of the page.

<sup>11</sup> Page iv of the Executive Summary, 5<sup>th</sup> item from the top of the page.

<sup>12</sup> Page iv of the Executive Summary, 4<sup>th</sup> item from the bottom of the page.

<sup>13</sup> Page v of the Executive Summary, 2<sup>nd</sup> item from the top of the page.



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This will permit the bioenergy initiatives to build on the existing systems without adversely affecting agriculture, and concurrently advance food security and other existing agriculture-related businesses<sup>14</sup>. Further, should the bioenergy industry not develop to commercial-scale in Hawaii, there will be lasting benefits from the Plan that will strengthened the agriculture industry.

### Conclusion

HFBF understands that the State's decision-makers cannot wait for perfect information before acting, and that there is an urgency to utilize Hawaii's abundance of natural resources towards reducing the State's dependence on oil. We urge HNEI to review the draft with the perspective of preparing a document that will result in well-reasoned, practical next steps, without undermining Hawaii's diversified agriculture industry at a critical juncture in its transition to a major contributor to food security and the hospitality industry.

Sincerely,



Ann Yamamoto, Executive Director  
Hawaii Farm Bureau Federation



The Hawaii Farm Bureau Federation ("HFBF") is non-profit, independent, non-governmental, voluntary organization governed by and representing 1600 farm and ranch families throughout the State united for the purpose of analyzing their problems and formulating action to achieve educational improvement, economic opportunity and social advancement and, thereby, to promote the State's well-being. We are affiliated with the American Farm Bureau Federation, which has a membership of over four million families in 2,800 counties across America. HFBF and its affiliates are local, county, state, national and international in its scope and influence and are non-partisan, non-sectarian and non-secret in character. HFBF is the voice of agricultural producers at all levels.

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<sup>14</sup> In addition to consumable products, Hawaii agriculture includes production of potted plants and cut flowers.



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Aloha,

My name is Henry Curtis and I am the Executive Director of Life of the Land, Hawai'i's own energy, environmental and community action group advocating for the people and 'aina for almost four decades. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

The first meeting for the Biofuel Master Plan was held on August 22, 2006. Attendance was limited to those selected by the Governor.

The second meeting for the Biofuel Master Plan was held on May 21, 2008 from 8:30-4:30 am. This meeting was called the Kickoff meeting. Presentations were made by people representing state and county agencies, regulators, biofuel advocates, Hawaii Agricultural Research Center, the U.S. Department of Energy, and the Universal Oil Products Company. Several speakers noted they were not saying anything new, and one speaker said his material came from the 1970s. At the end of the proceedings public comments was taken but no written record of the public comments exists. The 194-page proceedings contains mostly of pictures of slides (48 MB). Speeches accompanying the slides are not available. From pages 191-194 is a copy of a form on how the public can make comments.

The third meeting for the Biofuel Master Plan was held at a biannual Hawaii Agriculture Conference held on September 5, 2008. Many of the same speakers from the second meeting spoke. The proceedings contains the slides but not the

speeches (19 pages, 18 MB). The audio is available at  
[www.hnei.hawaii.edu/bmpp/activities2008\\_0905\\_audio.asp](http://www.hnei.hawaii.edu/bmpp/activities2008_0905_audio.asp)

Focus meetings had been planned for December 2008. If they were held they were private. The plan had an anticipated release date of July 2009. The Draft Plan was released on September 23, 2009.

The fourth meeting was held on April 2, 2009. Again, copies of slides are available.

The Draft Report was released on September 22, 2009. Comments are due on October 2, 2009. The public has 9 days to read, analyze and comment on the 849 page document. Then the authors have 13 days (9 business days) to read the comments, determine if sections of the report need clarification or rewriting, get the draft approved, and submit the final.

According to one DBEDT official, after the final has been finished, but before it is submitted to the Legislature, the public may continue to offer comments. "Our report is due 20 days before session, so the public has 3 more months for feedback. We haven't closed the process at all, and will continue to take input at the email address above until we wrap it up to meet our required deadline." If comments are received, then the box -- received feedback -- can be checked off.

What are the highlights of the Draft Plan?

#### **DRAFT Hawaii Bioenergy Master Plan** (Master Plan Volume I)

On Water: "Survey the existing records to determine all diversion locations that are either active or were active in the past. Evaluate the status of the existing diversions. Assess the needs to rehabilitate these diversions. Quantify the potential delivery capacity of the existing systems." (Page 45) The focus seems to be on maximizing the use of water for biofuels and not considering the big picture: food, fuel, instream flow standards, and protection of wildlife. What about Constitutional mandates.

On Permitting: "Improvements in Hawaii's permitting regime should involve new workflow processes within State and County permitting agencies as well as efficient interagency cooperation. ... Certain projects should qualify for preferential permitting treatment based on general procedural qualifiers or on **case-by-case decisions**. ... The permitting process should be accomplished within a certain time period. All agencies should endeavor to finish their permitting work within that time frame. ... Possible online self-certification processes could be made available by agencies for certain permits, which do not need individual and lengthy discretionary permitting review." (Page 48) This section seems to both argue in favor of automatic approval and giving the regulators the option to determine project by project whether the project should be exempt from permitting requirements. This section totally opens the door for political influence. Where is the concern about the public trust?



**Draft Hawaii Bioenergy Master Plan: Permitting** (Master Plan Volume II Part 5)

"Stakeholders in Hawaii's bioenergy industry, however, have identified Hawaii's permitting regime as a main obstacle to capital investment in the sector and successful implementation of promising bioenergy projects in the state. To meet its clean energy goals, Hawaii cannot afford the perception that investment and green energy initiatives are hindered by a lack of support from State and County permitting agencies. To mitigate this problem, state leadership has called for swift improvements in permitting processes with passage of legislative measures affecting State and County permitting agencies." (Page 5) In an era of furloughs, layoffs and empty positions, and in a state where invasive species has cost the state millions of dollars per year, why should we ram through any projects with little or no thought about the consequences?

"While the business community recognizes the great opportunities for investment in renewable energy projects in the state, **they should be able to concentrate** on entrepreneurial skills to overcome possible business challenges **rather than spending financial and human resources** as well as much time to acquire the necessary permits to satisfy many regulatory requirements." (Page 7) Do businesses really focus only on one thing. Isn't part of business developing team work, creating a desired product, and working within communities.

**"The main risks to an energy project are the unpredictability of the permitting process and its outcome."** (Page 9) This is a quote right out of the wise use movement ... if only there were no regulations everything we be great. The banking industry has proven that.

"Finally, it must be recognized that bioenergy projects may be critical infrastructure installations that require due protection against act of terrorism." (Page 14) Life of the Land does not understand this statement. What is the difference between protection and due protection? Who would determine if a tree that might be used for cellulosic ethanol is a critical infrastructure installation? Should corn fields that may be converted to ethanol have armed guards? Cameras? Unmanned drones? NSA agents guarding the stalks? Are alga ponds more of a target than electrical substations, bridges, police stations and government facilities? What terrorists have ever targeted non-food flora?

"An enforceable maximum time for permitting should provide investors some certainty that their permitting applications will be processed in a timely manner." (Page 96) Should automatic approval trump protection of public trust resources, the public interest, the threat of invasives, and even competition from other investors who want to use the same resource?

Henry Curtis  
Executive Director