

State of Hawai`i - Department of Business, Economic Development, and Tourism
Greenhouse Gas Emissions Reduction Task Force
Meeting Minutes
Thursday, July 3, 2008
3:00 – 5:00 p.m.
Room 600 Leiopapa A Kamehameha Building
235 S. Beretania St., Honolulu 96813

Attendance

Task Force

Present:

1. Mr. Robbie Alm (Hawaiian Electric Co. Inc.)
2. Mr. Frank Clouse (Tesoro Corp.)
3. Dr. Makena Coffman (University of Hawai`i)
4. Dr. Lorenz Magaard (University of Hawai`i)
5. Mr. Jeffrey Mikulina (Sierra Club)
6. Ms. Elizabeth Corbin (Designee for Ted Liu-DBEDT)
7. Mr. Gary North
8. Mr. Gareth Sakakida
9. Mr. Wilfred Nagamine (Designee for Laurence K. Lau - DOH)

Deputy Attorney General

1. Mr. Gregg Kinkley

Excused:

1. Mr. Mark Fox (The Nature Conservancy)
2. Mr. Laurence K. Lau

- 1) The meeting was called to order by Co-Chair Mr. Laurence Lau, at _____ pm.
- 2) The minutes from the June 5, 2008 TF meeting were approved without amendments. Mr. _____ made a motion to approve, and Mr. _____ second the motion.
- 3) Teleconference with Brandon _____ and Nick _____

We've been working with the DOE and DBEDT on develop a GHG _____ the next 20min or so to answer questions from my last presentation.

Lau: Ok member please fire away

Frank Clouse: What is the Economics of Producing Ethanol in Hawaii vs importing either the _____ cost and labor

Brandon: Thank you for _____ the question. In terms of the cost we are looking at \$2.25 per gal of gasoline and additional _____ ethanol comparing that to Brazil, where they have a much more developed ethanol infrastructure and as much lower labor and lower land cost about \$1.32 in Brazil compared it is much less expensive on the production basis in other area. The question is just how much transportation cost imported that into Hawaii _____ energy security implications would be if imported _____ .

The analysis imported ethanol additional sources. Does that answer your question?

Frank: Ya, one of the things I was looking at if you produce ethanol in and there haven't been any so far even with some incentive sand my question with the high cost of petroleum it is becoming harder for the state to raise money and if they have to subsidize ethanol production. That is a big concern.

Brandon: in state vs imported ethanol the economics might require different . In our analysis we looked a environment. So basically looking at economic basis rather than looking at . But certainly there are imports from fuel standards ethanol

Frank How many BTUs did you use BTU of ethanol.

Brandon: We don't have that in BTUs basis what we did in terms of a carbon program to produce gasoline vs ethanol is about 80% comparison kilograms to produce a gal. of ethanol vs producing a burning gal of gasoline.

Frank: One more question, if you went E85 you would be displacing a gasoline produced by refineries here. And in the case of Tesoro we also generate jet fuel and fuel oil and as long as we are producing that we are producing gasoline as a by product. If we can't sell it here we are going exporting and so how does that affect the GHG ?

Nick: on accounting basis we only include instate emissions. We do that including national basis in the State of Hawaii produce that much ethanol and gasoline then that gasoline would kind of go off into a pool and back out some other production .

Nick: See what I mean?

Frank: Yes

Lau: I noticed in a couple of your scenarios you are talking about sugar cane planting at 240,000 in one option and 360, 000 acres. I guess that I am questioning if that can even be done.

Brandon: That a very good question. We based that on the HNEI announcement of announcement of maximum acreage in production realizing in the State of Hawaii. amount of agricultural this is a significant historical peak is 240,000 acres of sugarcane so this is above the historical 19 peak so based on this report this is feasible but it will required significant amount of dedication of the state to reach that level.

Lau: I'm also thinking you know some of that land has been urbanized by crops and that infrastructure has declined a lot and I don't know if the companies have maintained it .

Nick:

Brandon: looking at 4 to 5 different irrigation systems functional level so ration to irrigated to non-irrigated water rights. We bright this up and there are a number of efforts to validate these figures . . .

Frank: I also have a question about the infrastructure. In terms of tanks since ethanol would be using gasoline the ethanol tanks would have to be at the terminals instead of the refinery did you include that in your cost and the addition barge costs because you would be coming from different points of the island you wouldn't be going to Oahu to the outer islands and you would be bringing product from outer islands to Oahu . Increase in barge activity and increase harbor activity as well.

Most of the traffic would indeed be into Oahu. Totally correct

In principal there is a for infrastructure too high itemize it by barge to barge .

Brandon: Ya compare this high level itemized based on the total amount of gallon produced lower estimate than probably required. Haven't spent a lot a lot of time.

Gary: Of Matson we just worked with the legislature to pass a bill to modernize ports for \$618 million. That only assumes a small amount of activity, basically Koaloa, for some infrastructure to the pipes but does not allow for infrastructure so I think it clearly if you are going to running ethanol from Maui to Oahu and the Big Island there is going to be a hugh amount of investment in infrastructure . Kalahole? there is no place to go. Kawaihai there is some place to go but a lot of investment. I think if we're talking, we really need to look at number if you are going to grow that much sugarcane and make that much ethanol. That needs to be part of the equation.

Brandon: Completely agree. I think of top of the port infrastructure there also significant amount of infrastructure we need to re-identify far amount of upgrade of the infrastructure throughout the Kauai chain.

Larry: A feasibility question with regard to moving energy between islands with cable. Is this technically feasible? Or do we need some kind of

Brandon: Depends on which island just Maui county with Oahu there are a number of cables laid between

?? Cable has to be DC

Brandon: Like the choice, but there's a tradeoff between EC and DC. Really the difference is between terminals different infrastructure with the DC transformer. We are not electrical engineer, but it seems like both might be feasible options with a tradeoff with terms of cost for the line vs the infrastructure

Jeff: On your GHG abatement cost curve, what kind of struck me on the high case and the other case the set of solutions the cheap end or the end that pays back changed. I kind of curious why those solutions changed. Why won't the axis just move up?

Brandon: Difference come out between the scenario and the high case there's a cable connection Oahu with Maui county Allocate those cost to the most expensive now cost.

Jeff. Low end things like the residential general purpose lighting, appliances you would think those things would not change at all.

Nick:

Brandon: Wind is another example so there's intermitted wind same cost and the assume pumped storage as well as cost allocated to the cable tacked onto the cost of the actual infrastructure. Those cost along with the fact that high concentration

Jeff: Is it possible to get some of the numbers. The assumptions. I saw some in the appendices. More depth. Is that available?

Brandon: Sure, can't remember if they are in the appendices or if it's a separate sheets, cost and

Jeff: Yap

Brandon: Would be happy to send them.

Lau: Any questions?

Thank you very much Mr. Divedo and Mr. ? More questions may be forthcoming

Brandon: Great we would be happy

Lau: Thank you very much.

Lau: Ok the next item of business.

4) Presentation on "Economic growth, radical innovation, and climate mitigation" prepared for the Hawai'i Clean Energy Initiative. Presenter was Dr. Wolf Dieter Grossman.

a. Mitigation needs Radical Innovation

- Dangerous climate change, ocean acidification:
- Requests for mitigation increasingly drastic: "1%".
- Tight limits to efficiency of present technologies.
- New solutions needed for: lifestyles, power generation, transportation, business.
- New solutions need radical innovation (RI).
- RIs possible based on revolutions in knowledge, in manufacturing, in finance, ...
- Radical innovations need a suitable RI-environment

b. Prospects for Hawaii

- Income from agricultural production declined in accordance with the rise of the goods producing sector and then declined even more with the rise of the service sector.

- In goods production, Pacific Islands could not compete due to remoteness and low population numbers.
 - This situation is now very different and potentially much better with the emerging knowledge society...
- c. Economic potential in radical innovation
- A 2-year empirical study / McKinsey Global Institute / Innovation in three countries (U.S., France, Germany)
 - In the U.S., just six sectors with *32% of the U.S. GDP contributed 76% of the country's net productivity gain (Farrell 2003), because their choice was:*
“Innovate or die” (Farrell)
 - The numbers show:
productivity growth in these six sectors was 6.7 times as high as in the other 68% of the U.S. economy.
 - In other countries, other sectors developed so well.
 In the US, not all companies in these six sectors did RI
That shows:
Large potential for economic prosperity from RI
- d. Suggestions for Hawaii to achieve maximal benefit
- Establish a Uschool that teaches all necessary essential skills for success in the knowledge society
 - Support RI by building an environment that fulfills the about 25 basic requirements of knowledge based new and emerging business
 - Support young people (they may also be 60 year of age or soon 120) to build “groups of like-minded” people, in particular “communities of practice”, breeders, advanced knowledge centers, ... For this, learn which regions are doing what particularly well (i.e. successful) and transfer that knowledge to Hawaii...
- e. Suggestions for Hawaii to achieve maximal benefit
- Advertise your efforts, report everywhere about the state of affairs in Hawaii, tell people what you are doing and why, have sympathy and suitable support for those who temporarily drop out to decrease anxiety,...
 - Train people who are in the job in the knowledge society, its opportunities, requirements, risks, drawbacks. Be honest, have good examples, many images so that your own populations does understand what is happening around them. It will happen anyway, but maybe again Hawaii will have to import everything, will have to learn 2nd hand, will be behind, will continue to lose its young people not just to the mainland, but also to China, India, do you really prefer that?
 - And build incentive/disincentive programs to squeeze mitigation into radically new product development...Hawaii may become a leader in some new efforts....
- f. New School for RI and Mitigation
- Teach managers how profitable and necessary RI is
 - Bundling of favorable factors
 - Make RI easier

- Teach RI (universities, companies, consulting companies etc.)
- Teach specific knowledge necessary for RI
- Incentives for RI through better tariffs (insurance companies)

g. New School for RI and Mitigation

- Incentives for RI through decrease of risks (flooding etc. – climate change)
- Facilitate transition to new energy options which can favorably be located in Hawaii, e.g. Methane Hydrate, OTEC
- Create knowledge environment for RI
- Advance supportive structures at universities (entrepreneurial)
- Build new curricula around multipurpose use of RI

h. Summary

It is no easy solution, but:

- Climate Change needs advanced solutions!
- Hawaii State is a national leader in mitigation!
- Knowledge economy not disadvantaged by remote location
- Highly promising (“factor 6.7 higher growth”)
- Necessary (death without RI)
- Hawaii is almost uniquely gifted with Quality of Life - develop & use this potential!
- Hawaii is uniquely poised to lead RI-Mitigation

i. TF Discussion; Public comment

i.

ii. Mr. _____, member of the public, asked _____ Mr. _____ replied

iii. Mr. _____ asked _____ . Mr. _____ replied.

5) Presentation on “PACON 2008” prepared for the Hawai`i Clean Energy Initiative. Presenter was Dr. Lorenz Maggard.

a. The annual conference of PACON International had as overall theme:

Energy and Climate Change – Innovative Approaches to Solving Today’s Problems.
It took place in the Ala Moana Hotel from June 1 – June 5 2008

b. The conference had four keynote speakers:

- 1) T. Michael May, President & CEO, Hawaiian Electric Company, Inc., USA: “The Energy Corporate Challenge in a Changing World”
- 2) James Hansen, Director NASA Goddard Institute for Space Studies, USA: “Climate Threat to the Planet: Implications for Energy Policy” [via life teleconferencing]
- 3) Patrick K. Takahashi, Emeritus Director, Hawaii Natural Energy Institute, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, USA: “Simple Solutions for Our Ocean Planet”

- 4) Peter Englert, Professor, Hawaii Institute of Geophysics and Planetology, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, USA: “Higher Education and Climate Change: Transdisciplinary Scholarship in the Design of Responses and Response Strategies”.

c. The conference had an Awards Banquet.

- Banquet Speaker was Jeff Obbard, Deputy Head (Research) in the Division of Environmental Research and Engineering, National University of Singapore, Singapore: “Chopping the Giving Tree – Climate Change in the Anthropocene”.

d. This year’s OCEAN DAY 2008 (June 4, 2008), devoted to “International Year of the Reef”, was defined as PACON-Meeting.

The conference PACON 2008 had about 125 registered speakers. Speakers at this conference came from 15 different countries.

e. THE NEW MANOA CLIMATE CHANGE COMMISSION
OF THE UNIVERSITY OF HAWAII

- On February 7, 2007 University of Hawaii at Manoa Chancellor Denise Eby Konan appointed the Manoa Climate Change Commission in an action to adapt to and mitigate climate change and its consequences for Hawaii.
 - This action was in parallel to Chancellor Konan signing the American College and University Presidents Climate Commitment (ACUPCC).
 - The Commission will foster multidisciplinary research and advance education and public outreach on the environmental, economic, legal, engineering, and social implications of climate change.
 - Strong emphasis will be placed on developing and implementing measures to reduce green house gas emissions. This implies consideration of, among other things, methods of environmental finance.
- f. The *American College & University Presidents Climate Commitment* is a high-visibility effort to make campuses more sustainable and address global warming by garnering institutional commitments to reduce and ultimately neutralize greenhouse gas emissions on campus. The effort is modeled after the U.S. Mayors Climate Protection Agreement.
- g. Leadership Teams formed:
- Climate Science – *Chair: Axel Timmermann* Goal: To collect and characterize the research about climate, climate change and prediction capabilities tailored for various levels of inquiry and need.
 - Impacts on Hawaii – *Chair: Peter Mouginis-Mark and Gordon Grau* Goal: To identify how climate change will physically impact the islands of Hawaii.
 - Geo-Engineering – *Chair: Tom Schroeder* Goal: To evaluate the science of novel greenhouse gas sequestration techniques and other methods used to “engineer and manage” climate.
 - Greenhouse Gases – *Chair: Lorenz Magaard* Goal: To determine and execute appropriate methodology of inventorying greenhouse gas emissions for organizations in harmony with voluntary and/or mandatory reduction targets.

- Energy Efficiency – *Chair: Stephen Meder*
Goal: To evaluate and recommend energy efficiency technologies for buildings, houses, and other miscellaneous structures and engines to reduce demand of energy.
- Renewable Energy – *Chair: Richard Rocheleau and Terry Surlis*
Goal: To evaluate and recommend renewable energy sources for buildings, houses and other miscellaneous structures and engines to reduce demand of fossil fuel based energy.
- Policy and Law – *Chair: Kapua Sproat and Makena Coffman*
Goal: To develop, evaluate and determine sound economic policy and analyze the legal implications of climate change regarding mitigating and/or adapting to it.
- Urban Planning – *Chair: Search in Progress*
Goal: To evaluate and recommend strategies of urban planning for an island community, specifically Honolulu, assuming climate change is occurring.
- Climate and Health – *Chair: Search in Progress*
Goal: To evaluate and recommend proactive measures to raise defenses against any health threats that may rise in a different climate.

h. Greenhouse gas inventory started

- Scope defined
 - University of Hawaii at Manoa campus facilities and vehicles including the Hawaii Institute of Marine Biology (Coconut Island)
 - 1990-present (goal, though gaps are expected).
 - Direct emissions
 - Natural gas and propane
 - UHM owned vehicles and marine vessels fuel use
 - Indirect emissions
 - Electricity use
 - Vehicles used to commute
 - Airline travel (commuting and business use)

Inventory being executed with two additional goals in mind

1. Provide a template and resource for other Hawaii private and public organizations to generate their own inventory.
2. Create a greenhouse gas registry for the state of Hawaii that would be in harmony with other major registries for verifying results, tracking progress and enabling market based and/or other reduction strategies.

i. MCCC Advises State On Reaching GHG Reduction Target (1990 levels by year 2020)

- House Bill 226, passed by the House and Senate May 3, 2007, states the following:
- Reduce, by January 1, 2020, greenhouse gas emissions in the State to levels at or below the best estimations and updates of the inventory of greenhouse gas emissions estimates for 1990; and
- Establish a greenhouse gas emissions reduction task force to prepare a work plan and regulatory scheme for implementing the maximum practically and technically feasible and cost-effective reductions in greenhouse gas emissions from sources or categories of sources of greenhouse gases to achieve the statewide greenhouse gas emissions limits by 2020.
- This will be accomplished through the guidance of a task force comprised of:
- Two members appointed by the president of the senate from affected business sectors;
- Two members appointed by the speaker of the house of representatives from affected business sectors;

- The deputy director of the department of health's environmental health administration or the deputy director's designee, who shall co-chair the task force;
- The director of business, economic development, and tourism or the director's designee, who shall co-chair the task force;
- Two members from the University of Hawaii at Manoa Climate Change Commission, selected by members of the Commission;
- A member from an environmental organization appointed by the speaker of the house of representatives; and
- A member from an environmental organization appointed by the president of the senate.

j. MCCS Members

Denise Antolini
 Roger Babcock
 Makena Coffman
 Craig Coleman
 Pat Cooper
 Gordon Grau
 Dave Karl
 James Marsh
 Stephan Meder
 Peter Mouginis-Mark
 Richard Rocheleau
 James Roumasset
 Thomas Schroeder
 Terrence Surlis
 Mary Tiles

5) Committee Reports

- a. Analysis Committee - McKenna: Comments of May 28th mtg
 Presentation to Mortia

Recommendations:

Target large GHG emissions Act 234 to do price of carbons...
 Best to do a 1 page fact sheet

Action: Nothing

- b. ?? Committee – Robbie

Carbon Tax, purpose, define how setup, purpose of what we are trying to do

Action: nothing

- c. Outreach Committee – Jeff
 Soul searching

Action: Require public hearing
 Fact sheet how to do/accept

.

6) Housekeeping Matters and Future Agenda Items

a. Outreach Committee

Discussion of public meeting

- a. Jeff: Challenges of going on PBS. Introduced Bar Journal publication.
- b. McKenna: Did other committees have any priorities and goals? Were they reported?
- c. Lau: We should bring other task members up to date on the contract.
Liz: ICF was selected on the consultant
- d. Lau: Future agenda items. None.
- e. Public: How much involvement is there in HCEI?

7) Public comment. Public comment is reflected above.

8) Adjournment.

- a. The meeting was adjourned at 5: pm. A motion to adjourn was made by Mr. and second by Mr. .
- b. The next meeting will be held August 7, 2008.