

## **Minutes of the Fourth Low Carbon Fuel Standard Expert Workgroup Sacramento, CA July 15, 2010**

The fourth meeting of the Low Carbon Fuel Standard Expert Workgroup was held at the California Energy Commission headquarters on July 15, 2010. Bob Fletcher, Deputy Executive Officer California Air Resources Board, chaired the meeting.

### **Agenda**

The items covered on the agenda included: Introductions, announcements, and presentations by Comparative and Alternative Modeling Subgroup, Indirect Effects of Other Fuels Subgroup, and Time Accounting Subgroup. The minutes from the third meeting were distributed, but approval was deferred to the August meeting.

The link to the Meeting Notice and Agenda is

[http://www.arb.ca.gov/fuels/lcfs/workgroups/ewg/071510lcfs\\_ewg\\_mtg\\_agd.pdf](http://www.arb.ca.gov/fuels/lcfs/workgroups/ewg/071510lcfs_ewg_mtg_agd.pdf)

### **Introductions**

Attending the July 15, 2010 meeting were: Bob Fletcher (Chair), Jim Duffy (Co-chair), Bruce Babcock (remote), Uwe Fritsche (remote), Angelo Gurgel, Phil Heirigs, Stephen Kaffka, Keith Kline, Jesper Kløverpris, Bob Larson, Michelle Manion (remote), Jeremy Martin, Seth Meyer (remote), Steffen Mueller, Don O'Connor, Michael O'Hare, Blake Simmons, Wally Tyner (remote), and Paul Wuebben,

The Expert Workgroup Members List is available on the webpage:

[http://www.arb.ca.gov/fuels/lcfs/members\\_list.pdf](http://www.arb.ca.gov/fuels/lcfs/members_list.pdf).

The Sub-Workgroup Membership List is available on the webpage:

<http://www.arb.ca.gov/fuels/lcfs/workgroups/ewg/LCFS-EWG-Subgr-Membership-List.pdf>

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**All the presentations and supporting documents for the EWG are posted at:**

<http://www.arb.ca.gov/fuels/lcfs/workgroups/ewg/expertworkgroup.htm>

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### **Presentation by Comparative and Alternative Modeling Subgroup**

**Introduction:** Bob Larson

**Presentation:** Seth Meyer, Summary of Alternative Models

**Presentation:** Uwe Fritsche, “The iLUC Factor as a Means to Hedge Risks of GHG Emissions from indirect Land Use Change” –

**Presentation:** Michelle Manion, “Other Factors Affecting Land Use Change”

**Presentation:** Steffen Mueller, “Alternative Modeling Considerations to Land Use Change”

**Presentation:** Theodore C. Foin, “Optimizing Model Utility in Resource Management”

***Summary by Bob Larson:***

What we tried to do today is to present an overview of the models and recognize that some are more complete than others. There are distinctions between general equilibrium and partial equilibrium models and pros and cons for each. There are also certain limitations to economic models – there are host of “other” factors that affect LUC that might be difficult for economic models to capture. Michelle’s presentation identified some of these factors. Are the models good enough for predicting the indirect effect of biofuels in LUC around the world? We looked at the importance of what happens in a local area in determining the accuracy of the global models by reviewing two case studies, one in Illinois and one in Thailand. How do we assess the relevance to our analyses as you compare what happens in the US as compared to globally? Will we be able to assess what is the comparative impact of one biofuel versus another assuming other factors that are outside the model stay static? Those are the discussion items as we try to assess whether one model type is better than another. Is there a policy we are trying to estimate or just a ranking for fuels?

***Comment from the Chair:***

The Chair commented that it is important to keep in mind that ARB’s short term desire is to figure out what is the best approach and synthesize all the information into some recommendations on how to proceed. ARB understands that models are improving and converging.

***As a wrap-up to the discussion, the following were identified as action items for the Comparative and Alternative Modeling Subgroup:***

- All the additional models that have not been accounted for should be sent to Seth Meyer for inclusion in the review list.
- Consider other factors (from Michelle Manion’s presentation) – how to reflect these factors in the scoring system.
- Local models and case studies that were not mentioned today should be identified and included.
- Scoring fuels vs. policy effects – we should be looking for a methodology to score fuels – the objective of the EWG is to figure out the best methodology for scoring fuels.
- Include the best approaches for both the short term and long term time horizon.

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- Consider whether it is necessary to capture local or regional consideration for the model to be useful.
- Determine to what degree the ability to validate model predictions is a critical feature.
- Consider the establishment of a model validation protocol.
- Are we capturing threshold questions versus marginal questions of accuracy and issues of cycle effects? Have there been any discussions of surrogate metrics that might be used as a means of monitoring what we are expecting? This may be useful in developing better models.
- We should differentiate between the function of the model and model parameters. This is important because the validation of one type of model (e.g. a model on trade issues) is very different from another type of model (e.g. a biophysical model).
- Look at data and the influence of the policy and use data to structure a causality analysis to look at different risk factors. We might be able to design that sort of project and data may be available from the historical record.

The Chair commented that list of action items likely exceeds the ability of the subgroup to address. Therefore, he suggested that the subgroup do their best in addressing the suggested action items, including the consideration of whether the action items could, in fact, be done. If they could be done, the subgroup could consider providing recommendations on how to do the analysis.

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### **Presentation by Indirect Effects of Other Fuels Subgroup**

**Presentation:** Blake Simmons, Björn Pieprzyk, Bob Larson, Jesper Hedal Kløverpris, Phil Heirigs.

#### ***Comment from the Chair:***

Following a discussion of possible indirect effects, the Chair commented that including the Deepwater horizon oil spill and “oil protection” as part of the analysis can be problematic because of the difficulty in then establishing equitable system boundaries. The question is how to do an equitable analysis of parameters that affect the carbon intensity on an ongoing basis and that can be reasonably quantified versus those that are really broad.

***Comment from the Co-Chair:***

Regarding documentation - A lot of numbers are floating around these presentations. If you have published documentation supporting your presentation then please send it along. If it is material that cannot be posted, then please note that in your presentation. If presentation is based on personal calculations, also note that in your presentation. Be careful about the assumptions in the numbers that are presented. A specific example was made of the calculations for the Gulf oil spill presented by the Indirect Effects subgroup. These calculations have not been intensively reviewed and are based on dubious assumptions (e.g. that the spill will continue indefinitely). If one assumes that the spill is stopped as of July 15 and annualizes emissions over 30 years, then the carbon intensity values reported in this slide will be reduced by more than a factor of 100. These types of assumptions must be apparent for personal calculations or else it is very likely that external groups will take these out of context.

***As a wrap-up to the discussion, the following were identified as action items for the Indirect Effects of Other Fuels Subgroup:***

- We have taken a two-tiered approach to defining prioritized targets of indirect effects of other fuels as a function of type.
- The subgroup is currently working on defining gaps in existing data sets.
- There are numerous potential indirect effects that will have significant difficulties in developing robust values and attribution.
- Dynamic response to supply and production changes will be an essential element of this effort.
- Displacement of gasoline and crude sources should be evaluated as a function of type.
- Run the displacement effects and marginal fossil fuels for oil and gas.
- Determine whether or not to include risk adders such as foreign policy, wartime, and disasters.

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**Presentation by the Time Accounting Subgroup**

**Presentation:** Jeremy Martin, Review of Fuel Warming Potential

**Presentation:** Jesper Hedal Kløverpris and Steffen Mueller, Baseline Time Accounting

**Presentation:** Michael O'Hare, Simplified "Time-Shift Accounting"

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**Presentation:** Keith Kline, Forest Transition Approach

**Presentation:** Liz Marshall (remote) Social Cost of Carbon Applied to Biofuels

**Presentation:** Liz Marshall (remote) WRI Time Accounting Workshop Summary

***As a wrap-up to the discussion, the following were identified as action items for the Time Accounting Subgroup:***

- Document the activities with an explanation and clarification why we get these different numbers.
- Use a couple of land use change scenarios to compare Time Accounting methods.
- Invite Angelo Gurgel and others to join us on the phone during one of our subgroup sessions.
- Address whether time accounting horizon(s) need to be consistent with 100 year global warming potential.

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**Brief Subgroup Updates:**

Food Consumption Subgroup – Jim Duffy has prepared a revised work plan which will be discussed by the subgroup and posted.

Land Cover Types Subgroup – Holly Gibbs (Chair) has been on maternity leave. A revised work plan is posted on the Expert Workgroup website as part of the presentation update.

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**Future meeting dates and topics**

- August 17: Tentative location: The California Energy Commission Building. Interim reports from the following subgroups will be the focus: Co-product credits, Land cover types, and Emission factors.
- September 9 and 10 – tentative. The format for September will be short presentations from each of the subgroups with a summary of their recommendations that would include a

short term time horizon of what should be examined and specific areas that need additional work.

- A suggestion was made that one of the days in September be used for subgroup meetings, as many of the groups have only been able to work via phone and email. ARB will consider that request.
  - October and November meetings (dates to be determined) will focus on full report outs and discussion from all the groups. Consensus is not requested nor necessarily expected, but differing opinions and perspectives should be noted. Further, what options does ARB have and what other options are worth investigating? Even if the subgroups are not giving formal recommendations, the group can give an indication of the structure of their recommendations. There will likely be two (2) days of meetings in October and November as well. ARB will send out emails to the EWG members with possible dates.
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### **Public Comments:**

- Several opportunities for public comment were offered throughout the workgroup meeting and there were no comments either in person, on the phone, or via email.
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### **Meeting wrap-up**

#### ***Comment from the Chair:***

ARB is going to send out the Purdue work and make assignments to the subgroups for inclusion in their recommendations. ARB is also going to bring some people on board to look at the Purdue work. The Chair expressed appreciation to all the EWG members for their efforts.