

Roundtable on Sustainable Biofuels

Ensuring that biofuels deliver on their promise of sustainability
An initiative of the EPFL Energy Center



ÉCOLE POLYTECHNIQUE
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**MEETING SUMMARY:
RSB WESTERN USA STAKEHOLDER OUTREACH MEETING
FEBRUARY 4, 2009
SAN FRANCISCO, CALIFORNIA**

Hosted by the US National Biodiesel Board (NBB)

Overview

On February 4, 2009 around sixty stakeholders from academia, NGOs, financial sectors and the biofuels industry met at the Moscone Center in San Francisco, California at the end of the National Biodiesel Board conference to discuss biofuels sustainability standards and review *Version Zero of the Principles and Criteria for Sustainable Biofuels*. The meeting began with presentations from Jim McKinney of the California Energy Commission and John Courtis of the California Air Resources Board. Both groups are in the process of developing sustainability standards for biofuels programs in the California state government. After the presentations concluded participants were divided into small working groups in which they reviewed the *Version Zero* principles on Consultation (2), Greenhouse Gases (3), Food Security (6), Conservation of Biodiversity (7), Soil (8), and Water (9). Each working group then gave a presentation to the larger group on what was discussed during their sessions. The following notes are based on a combination of notes from those working groups and the group presentations.

Conclusions

California is developing its own GHG calculations for different biofuels as part of the Low Carbon Fuel Standard mandate, which requires that California lower the carbon intensity of its transportation fuels by 10% by 2020. Since many of the individuals working on this participated in the RSB consultation, there was significant discussion about how to incorporate GHG calculations into the RSB standard. A number of stakeholders felt that there still is not sufficient scientific consensus to support the inclusion of indirect land use change (iLUC) calculations as part of the RSB GHG standard. Other groups suggested simply de-emphasizing the importance of iLUC impacts until better modeling exists to measure them, and/or using a conservative number higher than zero. Nearly everyone agreed on the need for an agreed upon methodology for measuring iLUC impacts.

In the principle on Human and Labor rights there was a request to specify the exclusion of hazardous child labor, include language about a living wage, and reference specific ILO conventions rather than use ambiguous language. There was also a feeling that this standard might best be addressed by minimum standards/protections during the implementation phase. On the food principle, there was a feeling that the RSB would need to clarify whether they were address food security at the local, national or international level, and recognize that it would be very difficult to audit this principle at the project level. There was a discussion of the positives and negatives of high agricultural prices, and a suggestion to try to institute policies that promote the positive effects, while minimizing the negative impacts.

Regarding the principle on conservation of biodiversity there was a lot of discussion about the Conservation Reserve Program (CRP) in which US farmers receive a rental for their land for the term of a multi-year contract to not put certain land into production. It was decided that it might be wise to put some CRP lands into biofuels production, especially when it would help prevent land use change of HCV areas in other parts of the world. It was emphasized that how HCV and ecosystem services are defined in the standard will be very important.

In the principles on Soil and Water there was a general feeling that it was not clear whether the RSB was going to focus on simply local environmental impacts, or also address larger macro-level and 'indirect' impacts. It was stated that 'soil health' is relative, and therefore an unscientific term. The RSB needs to set a benchmark for soil maintenance, since some soils will be more degraded than others. Also, it was noted that soils in the west tend to have much lower organic matter, so the RSB was cautioned against simply using that as a measure of soil quality. There was also a feeling that better guidance is needed on the use of chemical fertilizers and agricultural runoff, neither of which are adequately addressed in the principles.

In the principle on Economic Efficiency, Technology and Continuous Improvement some groups felt that the first criteria (on cost-effectiveness) did not belong in sustainability principles, and suggested that it be removed entirely. At least one group suggested that the idea of "cost-effectiveness" might be in contradiction to the other principles. There was also a feeling that the RSB was unclear on its stance towards GMO crops, and needed to be much clearer in its wording on criteria 11e, so that no groups misinterpreted the RSB stance on the issue.

Generally, there was a desire to remove ambiguous terms, such as *significantly* and *optimal* from the standards (see GHG and Soil principles), and set hard and quantifiable metrics. There was also a strong request for better definitions, especially for terms such as *waste*, *local*, *HCV*, *etc...* There was also a repeated call to reword the Version Zero document into more positive language, suggesting best practices, rather than identifying poor practices.

OVERALL OBSERVATIONS ON VERSION ZERO

- Important to take a life-cycle approach to GHG, energy and water. Not just on the farm, but pushing further downstream.
- **Certification is at the farm/field level**, however many of these requirements are at the “landscape level.”
- Feeling that the principles and criteria should be organized and articulated in a more logical manner.
- **Trade-offs were discussed:** For instance, could a good GHG performer use lots of water but still qualify? No consensus reached, and recognition that this can be a “slippery slope.” Might want to have minimums across the board.
- People like US law, but no agreement as to whether it is sufficient to meet “sustainability.”
- RSB needs to find a way to set voluntary standards on land use without entering into the policy realm, since that is a governmental function.
- Regarding indirect effects:
 - Dilemma – not fair to punish farmers for something out of their control, but acknowledge that there could be indirect effects. Because this is so unknown there was a caution against setting a standard based on something that is so unknown.
 - Scorecard might be a workable idea; classify those biofuels/feedstocks that are high and low risk.
 - Offsets may be a mode of compliance.
 - Question as to how to incorporate ‘minimize’ in a binary standard.

Principle 3: GREENHOUSE GAS EMISSIONS

GENERAL

- Is continuous improvement required indefinitely? Change language to seek continuous improvement, or promote best available practice or process.
- There was a conversation around the comparison to fossil fuels – how will we compare? **A global application would lack a local reference to the fossil fuels in that region that biofuel would be displacing** (tar sands vs. coal to liquids, etc). The GHG mitigation and the regional application of the biofuel project should be compared to the regionally competing fossil fuel.
- **Lack of implementation options for growers** – RSB should develop policy guidance on what farmers can do to address this principle.
- **Define the word ‘significantly.’**

- **Need an RSB-approved lifecycle analysis and assessment** that is more user-friendly than GREET - something that a small or medium producer can take.
- California is trying to adopt a performance-based standard. **RSB doesn't need absolute numeric standards** – could prioritize the better performers in a **sliding scale system** that would incentivize biofuels producers to choose the most beneficial production from a GHG perspective.
- Consensus that **indirect land use should be accounted for**, but **RSB should be cautious of adopting these numbers too quickly**. Some issue of credibility of these numbers.

CRITERIA

- 3a – Question as to whether the language about getting larger reductions over time is really appropriate. OK, but we should **reword 'producers and processors' to 'biofuels'**.
- Looking at improvements over time, we should **compare improvements to the previous history of the biofuel itself**, rather than to fossil fuels.
- 3a – 'over time' seems ineffectual – strike 3a from the principles. Use incentives in the application process to enforce this.
- 3a – 'over time' disincentivizes maximizing the benefit now – could strike.
- 3a – Recommend that this be measured annually, if it can be done cost-effectively.
- 3b – replace 'estimated' with 'calculated'
- 3b – Same LCA should be applied to fossil fuels, incorporating indirect costs of production.
- 3b seems to ignore indirect effects.
- 3b – LCA seems **subjective and hard to quantify**. Current language seems to indicate that the RSB will ignore certain parts of GHG analysis because of lack of agreement on how to quantify. Suggestion to **make best estimate and account for a continuous return and improvement on whatever numbers** are chosen rather than just using zero.
- 3b – Need for a **defined methodology for lifecycle assessment**.
- 3b – Term 'land to tank' seems limited – **'source to tank' is better and more specific**. (e.g. trap grease is not an agricultural product)
- 3b – 'Land to tank' could be replaced with **'seed to wheel'** (replicating 'well to wheel?')
- 3b – Wording in key guidance describes impacts related to both direct & indirect effects. One group suggests separating out the wording on these (because you can measure direct effects more easily than indirect) or taking the indirect portion out altogether until we better understand those impacts. **It not fair to apply indirect impacts at the farmer level with a voluntary standard**. Better addressed at the policy level.
- 3c – Change this language so that it incentivizes better performance. (?)
- 3c (re: default values) – Guidance to implementation group that the **RSB should not just pick the means as the default values**, as sometimes that can hide bad performers.
- 3d – Make sure there's room to **protect proprietary information**, but recognize that this is covered under principle 11.
- 3e – Macroeconomic doesn't capture the interactions that are going on – these are microeconomic interactions that are going on at a macro scale. **Suggestion to change to 'micro and macro' economic effects**.

- 3e – RSB needs to **define ‘marginal lands, crops and waste.’**
- 3e – Make language on third bullet point more positive ‘**avoid**’ changed to ‘**encourage/promote crops that do not have indirect impacts**’.
- 3e - **Include encouraging use of co-products** in the line about waste.

Principle 4: HUMAN AND LABOUR RIGHTS

GENERAL

- Change language to read ‘biofuels production shall not violate human or labor rights, and shall promote decent work & well-being of workers’ – Dose of reality – this will be very hard to ensure.
- Recommend **prohibition of hazardous child labor** – this is the most important type of child labor to eliminate. Need to specifically call out that they should not be working in hazardous conditions.
- RSB should **reference specific ILO conventions**, (e.g. 163.) (two groups)
- Countries have national laws regarding forced labor that may be referenced by the RSB.
- Suggestion to add a minimum wage or **living wage requirement**.
- How do we implement this? – Generally seemed like a fuzzy area.
- Principle **key guidance should include international convention on economic, social, and cultural human rights**.
- There is a need for criteria that focus on employer rights, as the whole section seems to just focus on employees.
- There was a feeling that **US law does not sufficiently cover labor rights**, and that it would be **better to have an ILO-based standard**.
- We need to be able to have national/regional interpretations (e.g. FSC) to make sure that national law is being taken into consideration in the right way, and then local based indicators as much as possible.
- Group discussion as to the appropriateness to intervene in other countries and cultures? (Most agricultural production in Central + South America does not meet these standards.) Decision that yes, the RSB should take the “high moral ground” and **provide standards that influence other countries**.
- Human rights must be included in the RSB standards
 - Basic human rights
 - Most appropriate to **set minimum standards/threshold for this principle**
 - Some criteria may be more important than others (e.g. child labor); weighting(?)
 - Suggestion for a point system and minimum thresholds
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CRITERIA

- 4c – Regarding child labor – **strike ‘on family farms’ and add ‘health and well-being and education’.**
- 4d – Regarding discrimination – Suggest **change wording to ‘workers shall not be subject to’** instead of ‘free of’.
- 4d – Add sexual harassment to the discrimination criterion.
- Guidance 4d and 4e: Should **explicitly include women’s rights** because of common discrimination in this area.
- 4e – Regarding workers’ wages and working conditions; **substitute the words ‘in local markets’ instead of ‘in the country concerned.’**
- 4f – Mentions ‘internationally-recognized standards.’ The **RSB should reference the specific standard here** (two groups mention this).

Principle 6: FOOD SECURITY

GENERAL

- Clarification needed as to whether the principle is meant to address food security on a local, national or international level. If country is a food importer (e.g. Japan) – are they prohibited?
- ‘shall not’ negatively impact should be changed to ‘strive to increase food security’ to **make the language more positive.**
- Lack of implementation options for farmers.
- Food security principle is probably **impossible to audit at a project level.** Another group said that ‘documenting and measuring food security impacts is enormously difficult.’
- Could **frame food security in the context of human rights.** That biofuels shall uphold the right to food, as defined by the UN declaration on human rights.
- We will need tools and resources to assess food security, and recognize both the local and the global impacts (much like HCV areas.)
- Discussion on rising agriculture prices – both positive and negative effects; benefits to food farmers (good) but food is more expensive to poor non-farmers, esp. urban poor (bad). Land that at one point was abandoned because of cheap food prices will revert to crop production is a good thing. Policies that **promote the positive impacts**, and mitigate the negative ones should be explored.
- Rather than stating a preference for non-food crops, the RSB might ask – What are you substituting?

CRITERIA

- 6a – Group liked this criterion, however cautioned against excluding all food crops from qualifying for the standard.
- 6a – Add co-products as things to encourage.
- 6a – Delete ‘giving . . . economically viable’ because it might disincentivize yield improvements.

- 6b – **Wild harvested food should also be included** alongside staple crops as food crops that cannot be displaced. ('sources of wild harvest food')
- 6b – Need for a **clear definition of 'local'**.
- 6b – Cross-reference with Principle 11 (11c) and **add guidance on the use of GMOs if it will impact local food crops.**

Principle 7: CONSERVATION OF BIODIVERSITY

GENERAL

- Biodiversity as a service itself is not addressed in the Millennium Ecosystem Assessment as an ecosystem service. We should **consider biodiversity as itself an ecosystem service.**
- In regards to evaluating the use of lands not currently in production (e.g. CRP lands) it is important to look at what ecosystem services these areas provide, and understand why it was put into conservation. We **should not have a blanket provision to omit the use CRP lands, and in some cases they may be used.** Local conservation groups could help determine the value of CRP lands after their contracts expire. Also, it might be possible to harvest biomass from CRP lands- e.g. tree lots might be thinned.
- The use of CRP lands for biofuels in the US might be beneficial if it can be shown to conserve HCV areas in another part of the world.
- **Change the wording** "shall avoid negative impacts' into something more positive; "shall promote", "shall preserve and/or enhance." **Encourage rather than prohibit.**
- HCV is a good theme, but **secondary forests and other ecosystems** need to be addressed, as well as ecosystem boundaries (e.g. watershed).
- Should maybe **address the recreational use of lands** (e.g. hunting). Conclusion that it may not be appropriate to be addressed by the RSB principles, but rather dealt with on a case-by-case basis.

CRITERIA

- **Criteria 7c and 7d should be rolled into 7a (two groups came to this)**
It seems redundant to have them separate. Buffer zones and ecological corridors are both related to HCV areas and are addressed in 7a.
- 7a - Need **good definitions for HCV areas** – good to have regional-specific metrics for defining these. Will this definition be country/region-specific, or internationally defined? If this is too strictly defined, it could scare smaller producers and economies from taking part. Will there be regional policy latitude?
MANY GROUPS HAD QUESTION ABOUT HCV DEFINITION
- The definition of HCV should be re-evaluated and possibly re-defined over time.

- Need to quantify at what point acceptable impacts are OK on HCVs and corridors – need to continually monitor if this is still a sensitive area after 10 years.
- 7b – **Ecosystem functions and services need to be well defined.** MEA and other tools should be used to develop metrics that are quantifiable and objective.

QUESTIONS RAISED:

- There is a need for definitions. How are the following defined: “HCV Areas” and “Native Crops.” Need technical measures for these definitions, but these need to be locally applied through a rational process.

Principle 8: SOIL

GENERAL

- The principle **doesn’t address net effect of indirect impacts (‘market-mediated effects’)** – are we going to be assessing the soil impacts on a farm/local level, or is this a broader/regional assessment of soil impacts?
- Improve soil health and **minimizing soil degradation** should be the focus.
- The language regarding soil health may need to be very different from tropical and/or wet areas where there is much more organic matter than in dry areas like the western United States. We need to use care not to use a standard that simply emphasizes increasing soil organic matter since **it is very difficult to increase organic matter in the west in a durable and lasting way.**
- The term **“soil health” is not scientific.** Healthy in relation to what?
- Multiple groups had issues with the term **‘optimal’** soil conditions. Wording such as maintain, improve, or **‘strive to enhance’ would be more appropriate.**
- **Rewrite the principle in order of priority:** ‘Biofuels production should promote practices that prevent degradation, maintain and improve soil health.’
- **Key guidance needed regarding the use of fertilizers;** should focus on responsible application and use.
- It would be **good to encourage the use of toxic waste sites/brownfields,** but there are some concerns about the exposure to heavy metals and toxins. We need to encourage the use of these sites **only when there are no air quality or health risks.**

CRITERIA

- 8a and 8b – **Quantify soil quality assessment in the metrics beyond just numbers of net effect. RSB needs a timeline applied** to whether sustainable means ‘no net effect in 5 years’, or 10 years, etc.
- 8a and 8b – The **RSB should create a benchmark for soil maintenance;** for instance, to deal with already degraded soils vs. good quality soils. Suggestion to use regional best management practices, or work with regional governing bodies, such as ANSI or NRCS.

- 8b – add wording to **consider biological health in key guidance**. Need a soil biologist help with indicators on 8b due to complexity of issue.
- 8c – Suggestion to add ‘**...but rather enhanced when possible**’ to the end of the criteria.
- 8c – Suggestion from one group that “**waste and byproducts**” **should be removed from criteria wording**. Since air and water emissions from processing units can also impact soil health.
- 8c – Suggestion from group to expand the **definition of waste products to include products from both the farm and the factory**.

QUESTIONS RAISED

- **How are we going to actually monitor soil impacts?** It is **much easier in the United States where you have vertically integrated biofuels production** to set up the auditing and make sure each step in the value chain is meeting the standards. There are **large global differences in the size of farms** (e.g. 1000s of acres in the United States vs. <100 acres/farm in China). In China aggregators collect product from small-scale producers. How will the RSB monitor these small producers?

Principle 9: WATER

GENERAL

- Water use & impact at processing and refining stages should definitely be addressed (as opposed to just at the farm level).
- The **efficiency of water use should be considered**; for instance, how much water per yield of biofuels would be an important measure for the RSB to consider.
- The absolute **prohibition of using irrigated crops in water-stressed areas might not be appropriate** – would take out production in large areas of the western United States – these have high biomass production potential.
- The **true cost of water use should be considered**, for instance biofuels projects should be limited to areas where the water needs can be paid for without public subsidy.
- **Agricultural runoff should be managed** as well as possible.
- Change ‘formal **and** customary’ to ‘formal **or** customary’ water rights – since they can sometimes conflict (e.g. in Canadian oil sands) – this also comes up in criteria 9a.
- There is a need to **quantify soil improvement**, and not use the word ‘optimize’.
- Not appropriate to exclude irrigation – could we incorporate mitigation effects?
- Question as to whether ‘...not violate existing formal and customary water rights’ includes **access to water**. If not, it should be explicitly included in this principle.
- Discussion as to how to address areas that are not easily measured or defined (e.g. in-stream use, water flow, access to waterways, etc...). Suggestion to **require that the**

project must meet the **'public trust doctrine'** to capture some of these grey areas not explicitly addressed in Version Zero.

- It is **important to re-evaluate the definition of 'water-stressed regions'** over time because of climate change.

CRITERIA

- 9b – The **water management plan should incorporate climate change modeling** so that projects can better project future water availability. (Where sufficient data is available).
- 9b – **Key guidance is needed** on what a 'water management plan' entails.
- 9c – **Include both direct and indirect water depletion impacts.** 'Biofuels production shall not directly or indirectly deplete surface or groundwater resources.' An example of an indirect effect would be if you changed the vegetation, which could impact groundwater production, flow and capture.
- 9c – **add 'without mitigation' to water stressed areas** – in certain situations, you may be able to have production in these areas, but would need mitigation plan.
- 9c – define 'crop' in the document – **does the word 'crop' apply to aquaculture?** Biomass can be grown in water.
- 9c – One group felt that the **wording in the key guidance is better than the criteria** itself. Any biofuel production will use and therefore deplete surface and groundwater resources, unless you're using a full water residue feedstock. Key guidance – defines depletion of resource as not impairing daily water needs of a community and steering away from water-intensive feedstocks in water-stressed areas. Having **more specific definitions of resource depletion is important.**
- 9c key guidance – **Change 'must' to 'should';** so...'water-intensive biofuel crops **should** not be established in water-stressed areas'. This was discussed because in the California context because there are landowners that have rights to water (in a water stressed region) and are applying those rights to agricultural production. Might not be appropriate to disqualify these producers.
- **9d – 'optimal' and 'adequate' – what are the definitions? Very ambiguous wording.**

QUESTIONS RAISED

- Should the RSB be monitoring the regional effects of water sourcing, or just local impacts?
- How do you separate small producers' impact when they are sharing a watershed or water resource?

Principle 11: ECONOMIC EFFICIENCY, TECHNOLOGY, AND CONTINUOUS IMPROVEMENT

GENERAL

- Question as to **whether this should be a major principle of the document**. What is the utility?
- **Difficult to determine whether the use of a technology shows a commitment to ‘continuous improvement’** and how would you certify that a producer is committed to that?
- **Remove the first sentence of the principle** (cost effective way) – this seems inherent & market-driven. Better to look at long-term viability, or mention subsidies explicitly if that is what this is trying to address (**two groups suggest this**).
- The term **‘cost effectiveness’ does not belong**. Not relevant to sustainability principles.
- Spirit of the document seems to be more in 11a. The RSB should add to the key guidance on 11a that projects should be economically viable without distortive public support, except when there are externalities and/or subsidies for competing fossil fuels. Fossil fuels are heavily subsidized and have public support.
- Need to **define ‘distorted public policy’** – is this trade policy? Infrastructure pipelines, or CSP that promote specific farming practices?
- **Cost-effectiveness seems to contradict some of the other principles**, so perhaps the RSB should indicate that projects need to be economically viable within the acceptable constraints of the other principles.

CRITERIA

- 11a – Remove the reference to ‘distortionary factors’ from this criteria.
- 11b – Replace ‘demonstrate a commitment to’ with ‘seek’ continuous improvement along the entire supply chain. This should be a whole systems continuous improvement, not just energy balance.
- 11e – ambiguity in the way that this is worded – either pro- or anti-GMO sides could appropriate this language. There is an important **need for the RSB to be VERY clear about their stance towards GMOs** so that there is no misinterpretation.
- 11e – Suggestion to strike entirely – should not allow GMOs in a sustainability standard.
- 11f – This statement is unclear. **Change ‘biofuel processing’ to ‘refining’** if that is what is meant.

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