Roundtable on Sustainable Biofuels

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

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

MEETING SUMMARY:
RSB SOUTHEASTERN USA STAKEHOLDER OUTREACH MEETING
JANUARY 28, 2009
RESEARCH TRIANGLE PARK, NORTH CAROLINA

Hosted by the Southern Growth Policies Board and the Southeast Agricultural & Forestry Energy Resources Alliance (SAFER)

Overview

On January 28, 2009 over 60 biofuels stakeholders from the southeastern United States from industry, academia, government and the NGO sectors came together in Research Triangle Park, North Carolina to discuss 'Version Zero' of the sustainability principles and criteria for biofuels released by the Roundtable on Sustainable Biofuels (RSB) on August, 2008.

After introductions the meeting began with a presentation by Dr. Tim Rials, Professor of the Department of Forestry at the University of Tennessee at Knoxville. Dr. Rials provided an overview of the biofuels potential for the Southeast, which he showed is likely to be based on forestry products and woody biomass as feedstocks. Dr. Rials also described the different technologies that may be used to convert woody biomass into liquid fuels, describing differences between the thermochemical and biochemical pathways for cellulosic ethanol production. Next, Barbara Bramble, Senior Program Advisor for International Affairs at the National Wildlife Federation and Chair of the RSB Steering Board, described the main concerns for biofuels expansion within the social and environmental rights community. She described the trade offs – such as rural development vs. significant fossil fuel substitution and the need to have high yields per acre vs. using marginal lands so as to not compete with food. Next, Matt Rudolf of the Roundtable on Sustainable Biofuels described the history of the RSB, the development of Version Zero, and gave an overview of the Principles and Criteria.

The majority of the rest of the day was spent with the participants divided into five working groups, in which they reviewed the social and environmental principles as elaborated in Version Zero. The first session was devoted to the environmental principles, including those principles regarding conservation of biodiversity, soil, water and air. All groups reviewed the same four principles, and

reported back on their work during a plenary session. During the second working group session participants reviewed those principles regarding community consultation, greenhouse gases, food security and economic efficiency and technology. Once again all groups covered the same topics and reported back on their work during a group session. Finally, the meeting concluded with a presentation by Sharyn Lie of the US EPA about the new US biofuels mandate, known as the Renewable Fuels Standard 2 (RFS2), and how their biofuels GHG calculations will determine which biofuels will qualify for the RFS2.

Conclusions

An important general point that came out of the meeting was that for the RSB standards to be relevant to the Southeast, they need to be applicable to the large forestry and woodlands resource that exists in the region. Because the principles appear to be more written for 1st generation biofuels, there was a concern that they might lack relevance in the Southeast. Related to that, it was noted that the Southeast has many small forestry landowners, so the RSB will need to find ways to integrate them, rather than working only with a small number of large landowners. Finally, numerous times we heard the need for clearer definitions, less ambiguity in the RSB language, and the need to reframe the principles with more positive language.

Following is a summary of the notes that were discussed by the numerous event participants, divided into a general section, and then into principle-specific sections. All comments from the different groups have been aggregated together so as to prevent any one comment from being attributed to one group or person.

OVERALL OBSERVATIONS ON VERSION ZERO

- There are a lot of areas where there is knowledge that is lacking, and **we need more research**, for instance **on the GHG issue**, before we can call the impacts detrimental.

- The RSB needs to **define a time frame** for all of the principles (ie. Improve an indicator within what time period) to **ensure long-term sustainability**.

- It is important to **separate the direct from the indirect effects**.

- There is a concern that the principles are **wedded to 1st generation biofuels**
  - Need flexibility for 2nd generation biofuels

- Participants **liked that the document attempted to push decisions down to the local level**, rather than up to the policy level, recognizing that indicators will be specific to local and regional areas.

- Participants liked that the document **recognized the evolutionary nature of sustainability criteria** and felt overall it was a well-written document.

- Participants felt that this could become something similar to the "**Energy Star**" of biofuels. Recognizing this **marketing idea of developing a consumer label.**

- There is a concern about "**regulatory creep**" as more principles and indicators are added the increased regulation and cost of compliance goes up.

- It is important to **give perspective on negative impacts**, for instance if one is worse than another, developing a way to **compare those trade-offs**.

- The RSB should **adopt a value statement** that explains why companies should adopt it.

- Question as to whether LEED building certification would be a good model to follow (incorporates the use of a point system).
    - Need for clarification - Are these minimum standards or are they "Gold" standards

- The **principles do not address efficiency of fuel use in transportation** (where does the concept of sustainability begin and end?)

- During implementation fossil fuels should be used as a baseline for comparison. If the benchmark is fossil fuels, make sure the benchmark is measured properly.

- Baselines should be much better than status quo but widely attainable

- The standards are very broad as written.

- The RSB should consider the energy needs of the local community.

- PREAMBLE to whole document that endorses the Earth Charter would be good:
  1st principle: Promotion of closed loop
  2nd: Appropriate size
  3rd: Localism
  4th: Diversity
  5th: Acknowledge fossil fuel impact on total market (leveling playing field)

- It will be difficult for the RSB to get widespread buy-in without government support

GENERAL SOUTHERN USA ISSUES

- The **biggest strengths in the South are in WOOD and forest residue.**

- **Increasing issues with availability of water and competition for land** as the South (NC specifically) has very high population growth.

- Also, the **southern United States has a lot of small farmers and forest owners**, so it is going to be **difficult to monitor and coordinate all of these different farmers to come into compliance**. Large landowners are much easier to monitor.

- Southern farmers have a history of working with long-term contracts, which is ideal for biofuel producers.

- Feeling that it is important to work within other standards – Comment that Version Zero has **greatest strength as a Meta-standard**

GENERAL QUESTIONS

- Biofuels are only one product of the crop that is being used (for instance with corn you also get DDGs), so how do you divide the impacts for the other products from the crops?

- Regarding implementation, how do we decide what level constitutes a negative impact?

- How do these standards impact other industries (wood products for instance) that may be used for other products.

- What does "legitimately contested" mean in principle 12?

Principle 2: CONSULTATION

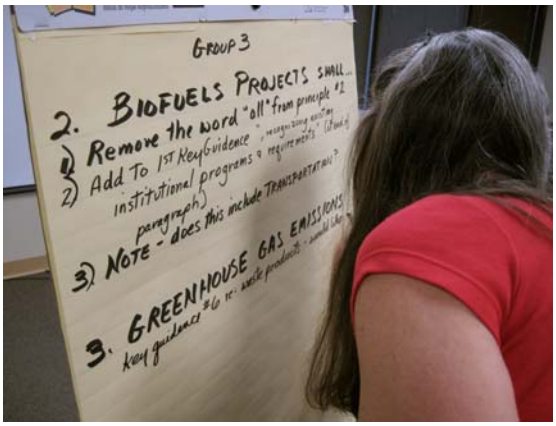
GENERAL

- Consultative and "participatory" is very onerous and cumbersome.
- Difference in this principle between small ag producers and biofuels production plant. It is going to be **harder for small farmers to go through the consultative process than an industrial plant**.
- From a biofuels production perspective, there are already regulations in place that require consultation.
- Remove the word "all" from Principle 2.
- "Must have an **overall benefit to all parties" – unrealistic**
- Issues need to be heard
- Scale needs to be addressed
    - Quantify "large" vs. "small"

- Diff. processes will be defined differently (cellulose vs. biodiesel)

CRITERIA

- 2b – There needs to be a system of monitoring **and reporting.** Simply monitoring is not good enough.
- 2e – It will be **nearly impossible to reach consensus** (two groups emphasized this):
  - In some cases consensus is unattainable
  - Difficulty could drive away some from RSB certification
  - Consensus must be defined (what percentage of dissent is okay?)
  - Must **balance protecting proprietary company information** with community education.
  - Add to 1st Key Guidance "recognizing existing institutional programs and requirement" (at end of paragraph)



QUESTIONS RAISED

- Are the impacts from transportation of the feedstocks and biofuels included in the consultation?
- Who are all "relevant stakeholders?"

Principle 3: GREENHOUSE GAS EMISSIONS

GENERAL

- In the main principle-Change the word "reducing" to "offsetting." "offsetting GHG emissions as compared to fossil fuels"
- What benchmark will be used to compare biofuels to fossil fuels? There needs to be a clear methodology for developing the benchmark.
- Why is it necessary that biofuels "*improve*" GHG emissions as compared to fossil fuels? – If they have additional benefits, can **the GHG balance** just be **no worse than fossil fuels**? Additional benefits include national security, economic security, etc…
- Kyoto Protocol work may help during RSB implementation stage
- The fossil fuel equivalent **benchmark is a moving target**, because as **fossil fuels become more scarce,** it will take **more and more energy to get to that fuel**. Need to look at what has yet to be extracted (digging deeper, more wells).

- Some felt that the RSB should define "significantly reduce;" but others felt there was some validity to leaving nebulous
    - Very difficult to quantify in widely-accepted way

QUESTIONS RAISED

- **How is "waste" defined?** Certain "wastes and residues" contribute to the environmental health of the soil, even if they have no economic value. **(Many groups mentioned this).**
- How do we determine the 'indirect land use' changes?

CRITERIA

- 3b – Two opinions: There should be a quick and easy method to determine LCA of GHG emissions. There is also a need for a feedstock-specific LCA.
- 3b – Clarity needed on the **LCA tools**
- 3c - Language is unclear; explain more succinctly
- 3b,3c.- Important to look at what EPA is doing today
- 3e – Principle is broad and acceptable, but how will it be quantified?
- 3e – Too vague. Clarity on key guidance is needed.

Principle 5: RURAL AND SOCIAL DEVELOPMENT

GENERAL

- Why the language about *indigenous people*? Strike that language.

Principle 6: FOOD SECURITY

GENERAL

- Definitions will be very important for this principle.
- Rewrite the principle to be **more positive**: "Biofuel production shall sustain and enhance food security"
- RSB needs to **define "Food Security**" for particular geographical locations.
- Food security is **more critical for the developing world** than in industrialized countries.
- Without knowing the details (implementation metrics), it is very hard to assess this principle.
- Add language about 2nd & 3rd generation feedstocks

- There should be a **cut-off date from when lands can be considered degraded**, so that there is no incentive for a company to degrade lands themselves in order to get the RSB certificate.
- It would be good to **reframe the criteria into positive suggestions**: for example, how to put fuel crops into rotation with food crops, replenishment of the soils.
- Food security may mean using a crop that can be used for **both food and fuel**.
- Food security varies depending on where you are in the world.
- This is a huge issue - it is difficult to pinpoint what role biofuels has. "Food Security" is part of an integrated system, and there is a need to fix larger markets.
- Avoids prescribing an answer to how to "minimize negative impacts on food security."

CRITERIA

- Add a criterion 6c- *Biofuel production will promote increased land* p*roductivity to sustain food supply and meet the new fuel needs.*
- Having a policy incentive for one preference (waste feedstocks) over another can create problems.

QUESTIONS RAISED

- How will producers comply with these standards?
- How will these standards be determined locally vs. globally?
- How do you measure the impact of biofuels on food security?

Principle 7: CONSERVATION OF BIODIVERSITY

GENERAL

- Ecological services should be ***promoted***; not just preserved
- Implementation should **quantify how to mitigate a "negative impact"**
- "Minimize impact" is nebulous, and **ambiguous wording isn't meaningful.**
- 7a. The entire system of **HCV areas should be analyzed for a net-positive (e.g. spatial tradeoffs) impact on the local or regional system.** Need key guidance for policy implementation.
- 7b. Impacts of invasive species and using local species of bioenergy crops should be considered
- 7e. When possible, bioenergy cropping systems should be used to promote regenerative design – Back to the "net positive systematic design."

WEAKNESS OF VERSION ZERO

- Lack of research on variety of biocrops that have negative and positive influence. A lot of what came out of the discussion was to take both the positive and negative impacts of crops. We don't know the positive or negative for the principle.
- Multiple groups felt the need for **specific language to address wetland areas** under these criteria.
- We need **more research on mitigating impacts.**

- One aspect of Principle 7 not addressed is **reclamation**
- **Vagueness of negativity** – sometimes there are two impacts on the soil, and one may be less harmful than another, and there is a need to **distinguish between the less harmful of the impacts**.

STRENGTH OF VERSION ZERO

- **Provides a guideline and direction** to move towards. There is feeling that it **needs to be on a national and international level.**

QUESTIONS RAISED:

- What/who **defines** an **HCV area**, **buffer zone, ecological corridor, biological conservation area**?
- Is there a way to **quantify** an **HCV area with a tax incentive** for the land owner? (ie. What is the financial incentive for a landowner to preserve their land?
- **Clarification** on **implementation** is needed.

Principle 8: SOIL

GENERAL

- (Principle): Remove the words "seek to"
- **Rewrite principle** as follows: "Biofuel production shall promote practices that improve soil health and minimize degradation."
- Principle 8 should **address pesticides and synthetic fertilizers**.
- The **principle is too negative.** Instead of saying what you shouldn't do to prevent soil degradation, it should indicate what should be done to maintain or improve soil quality.
- Principle 8 **does not address anything underneath the soil** (the flora and fauna that live in the soil).
- Improve vs. not degrade: bar too high?
- Wording could be **clearer on promoting conservation**
- Make sure standards are **clear and attainable**
- We need a better **understanding of organic material removal**.

CRITERIA

- 8a - There was a feeling that **the discussion of residual products just focused on agrarian products**, but since the southeast has significant wood biomass resources, we shouldn't limit that criteria to agrarian agriculture, but be sure to include forestry.

- 8a - Add the following sentence: The use of agrarian residual products, including lignocellulosic material, must not be at the expense of other essential functions for the maintenance of soil organic matter (e.g. compost, mulch).
- 8a - Who determines the optimal level? Suggestion to **take out "optimal level"** language (3/5 groups had this suggestion). Replace the phrase "optimal level" with "improve."
- 8a - **Baseline should be identified based on prior impact**. Starting conditions and potential for remediation must be considered when defining "optimal"
- 8b - The **key guidance should include all *biocides*, including both pesticides and herbicides**. No-till agriculture can have a negative impact on soil health when it uses petrochemical herbicides.
- 8c - **Net impact of waste redirection should be assessed** to identify and target pollutants. (e.g. what is the "trade-off" of redirecting biosolids from fertilizer use to biofuels use?)

QUESTIONS RAISED:

- Should this document set priorities?
- Should it favor particular technologies or approaches?
- How do you define a baseline?
- What scales do you use for time and space?
- Can we accept temporary theoretical soil degradation for a confirmed GHG benefit?
- Which pesticides are acceptable and how is that decided?

Principle 9: WATER

GENERAL

- Concern that most of the language in **the water principle appears to address conversion**, but **not the growing of the crop** (how much water, effect on water sources, etc…)
- Suggestion to include biofuels production **and distribution** in language**.**
- Principle **needs to address people** that can be impacted **downstream**.
- Suggestion for **language addressing access across properties**
- **Water quality is under-addressed in the key guidance** (whereas quantity is addressed).
- How should we address crops that do not require fresh water?
- There is a **concern about the cost** of an environmental impact assessment.
- "Shall not deplete water resources" is huge and **very hard to meet**

        - Insert “materially” before deplete (qualify wording to say **no significant negative impact**)
- (Principle) – Suggestion: **replace "optimize" with "maintain and improve"** making this principle stronger.
- (Principle) - Should **include language encouraging efficient fertilizer use** because of its impact on water quality

CRITERIA

- 9a - In some cases “normal and existing customary water rights” may be unfair or unjust. There is concern about this document protecting those rights if those water rights were set forth before the population was so large and there was a need for increased agricultural activity.
- 9b - Add “**reuse and recycle water where possible**”
- 9c - **Strength**- key guidance last paragraph
    - There is a need for the consideration of the most appropriate crops for the area, looking specifically at water use.
    - Draws attention to water use and value of water resources
    - Opportunity/weakness – improve “customary” and “formal” water rights
- 9c - Specifically include the following language: **fossil water, sensitive waterways, and wetland depletion.**
- 9c – Need to address a site study for large scale water uses.
- 9d - Include specific **language regarding non-point source pollutants**. Include **overuse of phosphorus-rich fertilizers**.
- 9d - Include language for non-chemical pesticides as pollutants, e.g. fertilizers. This principle should **address phosphorus-related hypoxia zones.**

QUESTIONS RAISED

- Whether the environmental analysis might affect decisions about where to site a project if it is going to be a big water user.
- How do you **define the pollutants and define the sources**?
- How can a small farmer comply with #9?
    - Could assistance be provided?
    - Don’t keep out the small farmer

SOUTHEAST USA-SPECIFIC ISSUES:

- **Wetlands** – The southeast has very rich **wetland ecosystems** that should be protected. Maintaining and enhancing quality of estuaries and coastal areas is very important.
- The Southeastern USA relevance for the water principle is the highly fragmented forest and woodlands.
- **Risk** – That **some crops**, such as switchgrass**, might pose a fire hazard**, and that should perhaps be addressed.

Principle 10: AIR

GENERAL

- **More positive language: Rather than limit** alternative open burning, it would be good if the RSB could **offer alternatives to open burning.**
- Clear **definition of air quality is needed**. Air pollution is more than just particulates and this concept should be added to the key guidance.
- One group felt that wording on open air burning was okay. Burning regulations should focus on direct worker health.
- Residues can be burned for productive use. Add **language that producers should seek to use residues more productively** (burn as fuel).
- Could have issues with unlevel playing field (lower costs for countries with lower standards), but these standards should help to level that.
- Use the term "biofuels supply chain" to incorporate the feedstock production to the tank.
- Some native species such as switchgrass depend on occasional burning to invigorate them; however, this cause safety/liability issues.
- However with biofuel production, switchgrass is harvested so biomass doesn't build up.
- The Southeast has an advantage because the most efficient species are native to this region.

CRITERIA

- 10a - **Include "transportation"** in key guidance.
- 10b – Make this criteria stronger by **prohibiting open burning**. It would be good to **offer alternative strategies to open burning**.
  - Sugar cane burning must be taken into account for GHG calculations.
- 10c - transportation of feedstock factored in; as well as transportation of finished fuel.
- Add Key Guidance 10c on transportation, for example: **Transportation emissions may be minimized through strategically placed production facilities**.
- Concern regarding specificity: The **key guidance on principle 10 is too specific** and doesn't incorporate all pollution sources. The P&C mostly just address agricultural air pollution sources, such as pesticides, etc., but it should address all types of air pollution sources, e.g. smoke stack emissions.

QUESTIONS

- What impact will the smokestack emissions from biofuels production have?

Principle 11: ECONOMIC EFFICIENCY, TECHNOLOGY, AND CONTINUOUS IMPROVEMENT

GENERAL

- Cost effectiveness does not have anything to do with sustainability. Economic viability is different from cost effectiveness. What is the goal of this principle?
- **Strike most** of this principle, but **leave language about energy balance and GMO regulations**.
- Regarding energy balance, **specify renewable vs. fossil fuel in energy balance criteria**.
- The second sentence of the principle is very vague and could be interpreted in many different ways. The words "must" and "all" should probably be removed.
- Push on **efficiencies of handling biomass** (collection, distribution), transportation and logistics issues will factor into the efficiency or plant operations and GHG emissions and must be counted.
- Efficiency of a company may be decided by public resistance (if a company has local buy-in they can spend more time running their business, and be more efficient.)

CRITERIA

- 11a – regarding "public support" – **Biofuels is an emerging industry and should be supported during infancy**. 5-7 years to stand on its own (be viable) should be the goal.
- Key guidance #1- add "long-term" to economically viable
- 11b – Remove the word "hectare" as productivity should be just generally improved.
- 11c - Regarding information on the use of technology being "fully available": Be careful to not promote technology that is so proprietary that only very large producers can use it. Promote technologies for small producers. Reward open-sourcing of technology.
- 11c - Rewrite to read: *Information on the use of technologies "that might pose a hazard to people or the environment" along the biofuel value chain…*
- Reword 11d – *…use along the value chain shall continuously improve environmental and social performance to minimize the risk* of damages to the environment and people.
- 11d – Language is ambiguous and **needs to be clarified.**
- 11e – In addition to GM, there is a **need to monitor the use of fast growing and/or invasive plants**
- 11f - Delete 'used in contained systems only.' Replace with "must be adequately contained to prevent release into the environment."
- 11f - "Microorganisms" too broad a term

QUESTIONS RAISED

- What is "input use"
- Policy issues impact viability – time?
- **Be mindful of fossil fuel incentives** - Fossil fuels get incentives and public support, so why shouldn't biofuels?

MEETING PARTICIPANTS

First Name	Last Name	Organization
Bob	Armantrout	Central Carolina Community College
Camille	Armantrout	Abundance Foundation
Philip	Badger	Southern States Energy Board
Ron	Barmore	Range Fuels
Frank	Bell	Bio Oil AS
William	Berry	NC Tree Farm Program
Bill	Berry	NC Tree Farm Program
John	Bonitz	Southern Alliance for Clean Energy
Kathy	Boyer	TCC
Sam	Brake	Biofuels Center of North Carolina
Barbara	Bramble	National Wildlife Federation
Cynthia	Bryant	Novozymes North America
Rachel	Burton	National Biodiesel Board/STF
John	Calcagni	US EPA
Mark	Conlon	Biofuels Center of NC
Chelsea	Conover	NC Solar Center
Kristen	Corachini	Environmental Defense Fund
Rich	Creger	Institute for Emerging Issues
Virginia	Dale	Oak Ridge National Laboratory
Rich	Deming	Metrolina Biofuels
Randy	Dilinger	Foothills Bioenergies
Marc	Dreyfors	Bull City Biofuels
Lyle	Estill	Piedmont Biofuels
Jeremy	Ferrell	Appalachian State University Biofuels Program
Ron	Fish	NC Dept of Agriculture
Leif	Forer	NC Biodiesel Association
Anne	Galamb	NC DENR - DAQ
John	Ganzi	Environment and Finance Enterprise
Nic	George	NC Solar Center
Nathan	Hall	Piedmont Biofuels
Joe	James	South Carolina Biomass Council
Tim	Johnson	US EPA
Mike	Jones	MAE Farm Meats
Morgan	Josey Glover	Greensboro News and Record
Keith	Kline	Oak Ridge National Laboratory
Bob	Leker	NC State Energy Office
Bob	Leker	NC State Energy Office
Sharyn	Lie	EPA
Simon	Lobdell	President, PBC
Will	Mackin	Jadora LLC
Mike	Madden	US EPA
Andy	McMahan	Central Carolina Community College
Charity	Pennock	SAFER Alliance
Stephen	Piccot	Southern Research
Allen	Powell	Southeast Diesel Collaborative
Tim	Rials	UT Knoxville Office of Bioenergy Programs
Linda	Rimer	US EPA
Michael	Roberts	Piedmont Biofuels
Matt	Rudolf	Roundtable on Sustainable Biofuels

Tim	Shea	Fort Bragg
Paul	Sherman	NC Farm Bureau
Norm	Smit	Biofuels Center of North Carolina
Terry	Stone	Syngenta
Kim	Swanson	
Kim	Tungate	NC Solar Center
Elizabeth	Willett	Commercial and Sustainable Business Development, Mars Symbioscience
Charles	Young	Fort Bragg
		Department of Agriculture & Resource Economics
Kelly	Zering	North Carolina State University