Roundtable on Sustainable Biofuels

An initiative of the EPFL Energy Center

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Expert Advisory Group on GHGs

Minutes of the first virtual Expert Advisory Group Meeting

Present :
Bruce Dale, Michigan State University
Horst Fehrenbach on behalf of Guido Reinhardt, IFEU
Marcel Gauch on behalf of Rainer Zah, EMPA
Tourane Corbière, EPFL
Charlotte Opal, EPFL

Apologies:
Edgard Gnansounou, Rainer Zah (both sent comments)

Goals of this Expert Advisory Group

Questions: Is our goal to pick one pre-existing tool? To create a new tool? Or to accept several tools as reference values and make slight modifications/additions to each one to reflect our overall approach?

Discussion

- We need to include the tools that are already developed or in development. We should avoid developing new tools. We need very detailed experience in the use of existing tools (for instance in Holland, or the tool being developed in Germany). It is too early to judge whether one of the tool is really better – it is a matter of scope and objectives.

- Note that we need to distinguish between database & LCA software in the list of tools.

Decision:
The final product of the RSB goes in the direction of a meta-certification i.e. international recognition of national and other sustainability certification processes, so the same should be true for the GHG tools. We must develop guidelines of the acceptable national tools.

1. Key points/criteria for the future RSB GHG approach:

1. *The approach will be based on life cycle approach from well to wheel.*

   Discussion

   Well to wheel implies that utilization step is included. Due to the number of possibilities of uses (e.g. E5, E10, E15, E85, etc. in the case of bioethanol) and to the improving

performance of engines that are different from one country to the other, international comparisons will be quite difficult.

Decision:
A "well to tank" is suggested

2. *The unit will be: gCO2e/MJ gram of carbon dioxide equivalent per mega-joule of energy.*

   Discussion: There is no other option than this unit.

Decision:
Use this unit

3. *The approach will use a reference system: the greenhouse gas emissions along the biomass chain will be compared with a relevant standard fossil reference chain.*

   Concerning the reference system, it is crucial to apply the same methodology for assessing biofuels' system as for assessing fossil fuels systems.
   If the assessment method and the simplifications are the same for biofuels and fossil fuels, then it is equal if different biofuels are compared to each or if biofuels are compared to fossil fuels.

Decision:
Agreed with the original suggestion

4. *The approach will focus on those steps/inputs with the biggest impact on GHG emissions. Where emissions in one step represent a small part of overall emissions, or where they are similar amongst different feedstock and processing types, default values will be used.*
5. *The approach will focus on the impacts which vary from crop to crop or production method to production method – we want to create a tool that can compare different types of production to each other, and then that overall number to fossil fuel.*
6. *Default values will also be used when no data are available from particular links in the chain. The defaults value will be evaluated conservatively, and be as specific as necessary for various feedstocks, countries, processing technologies, etc. This will encourage process improvements. If an owner of biomass thinks he is performing better than the standard value, he will have to prove this with the aid of a predetermined methodology (and perhaps third-party verification). We hope to reduce the need for verification and monitoring, yet still incent producers to improve GHG performance.*

   Discussion points 4-6

- The group thinks that it makes sense to focus on those steps that have the biggest impact. There is a need of simplification but also a great need of clear justification for why certain steps are left out. One of the biggest challenges is how to simplify lifecycle methodology. In Germany, they tried to introduce a 'cutoff' criterion for insignificant things.
- There is agreement about the fact that it is necessary to focus on the variations from crop to crop and production method to production method.
- Default values are a big point if discussed in detail. The group agreed that there is a need for some default values to get things started and to get companies and stakeholders going quickly. There is a need of a lower benchmark that says where everybody starts. Conservative default value for starting makes sense.
- In Switzerland, they started now a project that goes in the same direction, called a 'quick-scan' tool, with a similar approach.

7. *Direct certification tool based on RSB GHG approach versus indirect incentives:*

Discussion:
The IFEU calculations & approach regarding indirect land use changes could be used as an example of tackling land use. It seems very complicated to take indirect effects into a calculation methodology. It is very difficult to get a science-based approach to indirect effects.
The group doesn't think that strong simplifications for the indirect effects can be made – for instance to make a country list and to say that for this country we don't worry about leakage effects. This point will also be addressed as far as possible it in the 'quick-scan' tool.

Decision:
Tackling indirect effects deserves its own discussion – probably its own session/discussion. It will be put in the agenda.

2. Adequate methodological simplification:

Discussion:

- The simplifications proposed are inspired by the UK and NL approach, but if one takes a standard LCA approach, one might not need to make these simplifications.
- If we go for simplifications, then the infrastructure production can be left out as it accounts for maximum 10% of the impact compared to the production process itself, and even less in the overall chain.
- There is agreement about the list of chosen GHGs. The cutoff criterion of 1% is good as well.
- In the majority of studies that have been done, these emissions don't have much impact. You don't get a lot of additional value from adding many of these points.
- But note that in a standard LCA, even small impacts are included. Sometimes one can be surprised that traces have a bigger impact on a lifecycle than expected. If you have a strong and complete database, you calculate the whole chain and the whole range of potential GHG's.

In conclusion, if we have enough data to avoid simplification, then it is great. But these minor elements probably won't have a strong impact on the result.

3. Basis for a methodology comparison:

Discussion:

- Distinction has to be made between Databases (e.g. ecoinvent) and LCA evaluation tools.
- The presented questions are useful. The software in itself is not so important. Transparency and documentation are crucial, as well as simplicity of presentation.
- One of the challenges is to ensure that the tool is not used for manipulation and giving figures that are not verifiable in the end. So the questions of how the software is made and how far it is possible to implement own data are central.
- These are important criteria but other criteria might arise when you start to compare tools.

Decision:
The idea of having a table on the internet is good and helps to have a fair, open, transparent way to compare evaluation tools. The table will be open on both side (column and rows) so that any new criteria or method can be added. There will be a place for user input, so that people who use these tools can give their opinions on how well they work.

At the beginning and for a limited time it will be accessible just to the experts.

4. Summary of feedback about the draft principle tackling GHG issues:

Discussion:

- In general, the RSB principles are very similar to the principles mentioned in Germany.
- The GHG principle is not strong convenient enough: "lower GHG emissions" should be replaced by "**significantly lower GHG emissions**" because reduction of GHG emissions is the main advantage expected from biofuels while they can show few weaknesses compared to fossil fuels such as land use and loss of biodiversity. Positive global ecological balance requires that the GHG emissions reduction is significant in order to outrank the potential environmental burdens.

- However, the way that processes develop is that they get better over time. Fossil fuel processing is pretty much at its peak – but biofuels have a way to go. Saying 'significantly' better might restrict biofuels and not give them a chance to develop and improve their processes. It is would be a pity to shut the door on promising biofuels because they fall within a band of error that is not significantly better than fossil fuels.

Decision:
The solution is maybe to define 'significantly' more specifically.

More generally:
It is interesting that GMOs are mentioned – it may be one of the most challenging aspects, especially with soy and corn. Most other principles try to ignore it, but that is not a good solution. It is good not to have a too expanded list, but one that focuses on the most important schemes – more details can go in the criteria.

5. Next meeting and agenda:

Dates to be "doodled": September 17th, 18th or 21st.

New timeline:

	2007								2008		
	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March
Constitution of Expert Advisory Group											
Expert Advisory Group meetings/conf calls											
Choice of the methodology for GHG assessment:											
1) Inventory and comparisons of the existing LCA tools/methodologies											
2) Identify the main points in the life cycle that contribute the most to GHG emissions											
3) How to tackle indirect effects/ the question of allocation											
4) Address GHG emissions from land use changes											
Draft overall recommendation GHG elements of draft standard											
Devise recommendations for governance structure to continually update GHG tool (Phase Two)											