

MEETING MINUTES

Meeting: Workshop Advanced biofuel producers
Date: 19 February 2014
Time: 09:00 - 12:00

Attendees: Carlo Hamelinck (chair, Ecofys), Hugo Valin (IIASA), Maarten van den Berg (E4tech).
Absent (ill): Daan Peters (Ecofys)
Heleen Koopal (BioMCN), Clemens Heikaus (Clariant), Elina Virtanen (UPM)

Minutes by: Maarten van den Berg, Carlo Hamelinck, Hugo Valin
Number of pages: 5

A consortium of Ecofys, IIASA and E4tech has been assigned by the European Commission to model feedstock-specific ILUC emission values associated with the consumption of conventional and advanced biofuels in the EU. The consortium uses the GLOBIOM model, developed by IIASA. Project results are expected by early 2015.

Using inputs received during the first round of stakeholder consultation meetings (held in November 2013) and through the ILUC@ecofys.com e-mail address, a long list of suggestions for improvements has been compiled. In January 2014 the improvements have been prioritised in consultation with the Advisory Committee and the Steering Group.

In this second stakeholder consultation round the consortium aims to obtain feedback on the [shortlist of improvements](#) to be implemented in the course of this project as well as on the draft [baseline, scenarios and sensitivity analysis](#). The consortium will try to address the feedback from this second consultation round and suggest a final shortlist and a final baseline, scenarios and sensitivity analysis to the Steering Group in the week commencing 10 March. After the final changes to GLOBIOM and final baseline and policy scenarios have been agreed upon, IIASA will update the GLOBIOM model and subsequently run the model and perform sensitivity analysis.

General points about the process and main questions/areas of interest to discuss today

- Stakeholder: How forestry feedstock and tall oil are dealt with in the model? How are processing residues and agricultural residues represented? What about alternative applications for (e.g. straw for animal bedding), would you consider ILUC for them? Would it be possible to have a more regional approach for agricultural residues?
 - Forestry residues and tall oil are not modelled but are included in the modelling baseline. Concerning agricultural residues we focus on *straw* [see below under *discussion on improvement 1*].
- Stakeholder: what would be the impact of having 2010 instead of 2000 for the baseline?

- IIASA: Using 2010 as a base year is not possible because the spatially explicit input datasets that we are using with GLOBIOM are not available for 2010. But we will check that the model (with a baseline starting in 2000) behaves in line with the data that are available for 2010. Note that the objective is not to represent the year 2010 but more a representative average situation around the year 2010. Some variables such as yield fluctuate significantly from one year to another and needs to be averaged.
- Stakeholder: can the data that are not available for 2010 have an important impact in the model?
 - IIASA: yes, possibly, e.g. forest cover in Brazil changed quite significantly. But when we do not have spatially explicit data, we have at least aggregated time series that allow us to check the evolution of the model on the period 2000-2010.
- Stakeholder: what is the date on which you base the feedstock prices?
 - IIASA: we take an average of 5 years around the year 2000. Price then evolve in the baseline depending on other exogenous parameters development.
- Stakeholder: what is the relevance of the feedstock prices for the ILUC?
 - IIASA: indirectly it influences where feedstock are sourced from. If vegetable oil demand in 2020 is higher, the model will source the additional oil from regions that can supply it at lowest marginal cost. It determines the production patterns.
- Stakeholder: why are you trying to predict LUC instead of just looking at historical patterns?
 - IIASA: it is the mandate of the Commission to look at the future impact of their biofuel policy. LUC patterns induced by biofuels cannot be observed in the past because historical developments mix all the drivers of land use change at the same time. The marginal LUC impact from the biofuel policy is different from the average LUC development. For instance, the fact that deforestation historically decreased on the period 2000-2010 in Brazil does not mean that biofuel policy leads to a deforestation decrease.
- Stakeholder: we are interested to see effects of regional price differentials.

Improvements

Improvement 1 [Improve the representation of agricultural residues]

- Stakeholder: how are agricultural residues treated on the demand side? There are huge price differences between regions.
 - IIASA: they are represented as co-product but the representation of agricultural residues (i.e. straw, other residues such as corn stover will not be looked at) will be refined during this project. Currently in the model more residues are produced than what is consumed. On the supply side, we need to determine if we assume proportional supply to crop production or if we allow for higher removal of residues, with a potential impact on yield.
- Stakeholder: In reality the yield will not be influenced by a higher removal of residues from the field, the farmer will not compromise on yield. Farmers know how much N on the field is needed and will adjust the amount of fertiliser applied. So it will not result in a land use change effect but in an intensification response.
 - Ecofys: wouldn't that be included in the direct effect of the biofuel? Stakeholders: that is exactly the point, that could induce a double counting if you add the associated emissions of fertilizers to the GHG emission balance. It would be

important for us to have transparency with respect to the assumptions on the 2G pathways. Stakeholder: are the RED values from LCAs accounted for in this project? IIASA: no, that is not part of the project. Ecofys: there is a fundamental difference between the LCA and the simulation approaches (modelling). IIASA: there can only be double counting if land conversion emissions calculated with LCA analyses are combined with our results. With GLOBIOM we calculate direct + indirect effects at the same time.

- Stakeholder: if the price of a feedstock spikes in one region, would the model be able to account for that and show a low/zero ILUC for that crop?
 - IIASA: in a simulation approach, we are not using allocation method to distribute the land use change effects, so a higher price for the crop does not induce a higher share allocated to the crop rather than the straw. What determines ILUC effect in a simulation model is the impact of increasing the demand for straw. The most likely effect is to increase straw price and to reduce the price of the crop.
- How do you take into account differences across regions?
 - We have trade constraints on residues in the model. For agricultural residues there is a strong regional effect. This could be explored further. One approach would be to make clear in the report that there are strong regional differences in ILUC for this feedstock. Stakeholder: would you then suggest having certification on regional level? IIASA: it's too early to elaborate on that. Stakeholder: how is the trade within the regions accounted for? IIASA: we don't have transportation costs within regions. It is an improvement that has been raised by stakeholders but because it would require a lot of (non-available) data and work it did not make it to the short list.
- Stakeholder: how are processing residues accounted for in general? In the same way as glycerine and tall oil?
 - Ecofys: they are not in the model, which means that we cannot say anything about their ILUC impacts. The ILUC impact of such residues is usually expected to be lower, but given that they are not covered by the model we cannot say anything about them. Stakeholder: in the proposal from the EC there are residues listed (as advanced biofuels, meaning that they have no ILUC) but at the same time it is acknowledged that there is a substitution effect. But the proposal does not state that they are considered ILUC-free feedstock either, so the question "what is the ILUC effect of those feedstock?" will come up sooner or later. Ecofys: we agree but it is outside the scope of this project to include other feedstocks than the conventional feedstocks. Stakeholder: would it be possible to include their volumes in the model without specifically modelling their ILUC? Ecofys: they can potentially be added to the mix when we will make assumption on the future composition of the mandate.
- Stakeholder: for definition of residues you could perhaps make use of the waste directive. Asking the question whether or not the product is produced intentionally should be the first step. If it is, then it is a co-product, if not, it is a waste. Currently it is not clear how the definition of the different residues is determined, that should be clarified.
 - IIASA: from a modelling perspective, a product is considered as a "waste" if it is in oversupply, i.e. there is no demand to meet a part of the supply. In such case, the market price of the product falls to zero. This definition is different from your assumption.

- It is important to decide which co-products are included in the model because it can have an impact on the ILUC of some other feedstocks. For instance, for biodiesel, glycerine can substitute with something else when it is used.
- Stakeholder: If you use a waste material then it does not have an ILUC factor. The way the residues are dealt with in the model should not lead to penalising a process that recycles some waste. Be clear about the definitions.
 - Ecofys: we will discuss internally how we can best deal with this.

Improvement 9 [Forest regrowth and reversion time]

- Stakeholder: what would be the impact of this improvement on the results?
 - IIASA: it relates to carbon stock accumulation on abandoned land. If it reverts there will be more carbon stored.

Improvement 24 [Separate representation of Argentina, Indonesia and Malaysia]

- Stakeholder: can you, by splitting out Argentina, derive a regional Argentinian ILUC factor that can be used to steer policy?
- Stakeholder: it could be a very powerful tool for policy makers if you have an ILUC spread per region.
 - Ecofys: yes, but that would be also too complex. This project is aimed at estimating ILUC of feedstock consumption in the EU. We have to think about the way we present the import contribution to ILUC in the results of the report.

Improvement 35 [Conventional and advanced biofuel production conversion coefficients to refine]

- Stakeholder: does the type of technology matter or is it only about transformation coefficients?
 - IIASA: ILUC will be influenced by the latter. Stakeholder: so assumed costs and conversion efficiencies matter? IIASA: Yes. Cost can play a role to determine what region produce the biofuel.
- Stakeholder: will the conversion coefficients be constant over time?
 - IIASA: For the time being they are fixed as a default assumption. But the plan is to best represent the real technological development and we expect stakeholder input on this matter.

Baseline and scenarios

- Stakeholder: what would be the effect of introducing ILUC accounting as a shock, could that be an interesting proposition?
 - Ecofys: in all scenarios we apply a shock compared to the baseline.
 - we have an ILUC policy scenario that takes this indirectly into account, by assuming crop based biofuel are capped at 5%.
- Stakeholder: you have a scenario which assumes that crop based biofuel are capped at 5% (B1), why not 6% or 7%?
 - IIASA: this is still a proposal, but the number of scenario has to be kept reasonable and the Steering Group will define what the priorities should be.

Sensitivity analysis

Not discussed

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- Stakeholder: improvements 34 [Refine oilseed crushing coefficients] and 35 [Conventional and advanced biofuel production conversion coefficients to refine] are important to us and we would like to have transparency on the assumptions taken.
- Stakeholder: furthermore, on improvement 1 [Improve the representation of agricultural residues], we would like to know how that is implemented: how do you anticipate the regional dimension of agricultural residue impacts and the role of price differences on ILUC; and how do you distinguish between direct and indirect GHG impacts (if use of agricultural residue is compensated by higher fertiliser use).
- Stakeholder: I would like to have an overview of different definitions of forestry products and how their carbon accounting is taken into account.
 - IIASA: will send you the link to definitions used by IPCC (chapter 4, forest).
- Stakeholder: how is the time component of C-stocks accounted for?
 - IIASA: in GLOBIOM we keep carbon stock constant for managed forest under a given management because we consider that forest is sustainably managed. For unmanaged forest including carbon accumulation for forests would require information on forest age. For a fully mature forest (like primary forest), the carbon stock can be assumed pretty stable. Ecofys: we will make more details available online about forestry.
- Stakeholder: having detailed information on incorporation of substitution patterns in the model would be very valuable too. Stakeholder: what is the assumed use of different feedstock? This would need to be clarified.