



Briefing: Biofuels and indirect land use change (ILUC)

The European Parliament's Environment Committee is due to discuss progress on the Commission's impact assessment on indirect land use change (ILUC) impacts of EU biofuels policy during the week of 23-25 May 2011.

We call on MEPs to ensure that the Commission meets the deadline (which it has postponed to July 2011) and publishes a proposal that addresses ILUC with specific ILUC factors for different types of biofuels (option 4 in the impact assessment).

What is ILUC?

When agricultural land for food or feed production is turned over to growing biofuel crops, agriculture has to expand elsewhere. This often results in new clearance of forest and other ecosystems, particularly in tropical regions in the developing world. Worldwide greenhouse gas (GHG) emissions from clearing new land can be significant and may outweigh any GHG savings from the use of biofuels. The land clearance also damages biodiversity and threatens local community land rights.

Numerous scientific studies have warned about the unintended climate consequences of ILUC associated with increased demand for biofuels, and the need to address it by changing existing biofuel policies.¹

Addressing climate change is given as the primary aim and justification for public policies supporting biofuels; it is therefore essential that this issue is properly addressed by EU decision-makers.

¹ For more on the science of ILUC, see T&E briefing:
http://www.transportenvironment.org/Publications/prep_hand_out/lid:522.

Summary of current situation

At the insistence of the European Parliament during the negotiations on the Renewable Energy (RED) and Fuel Quality (FQD) Directives, the Commission was required to publish a proposal to address the ILUC impacts of biofuels by the end of 2010 (art. 19.6 of the RED). The Commission's own studies (and numerous other studies from respected international scientists and institutions) show that ILUC impacts are significant and could considerably affect the greenhouse gas (GHG) emissions balance of biofuels.

A study conducted by the UK Institute for the European Environmental Policy (IEEP) on the impacts of Member States' plans to increase the use of biofuels until 2020 (first published in November 2010) shows that when ILUC is taken into account, Europe's biofuels will be on average 81 to 167% worse for the climate than fossil fuels they are intended to replace, unless the policy changes. For more detail see also later section 'How substantial is ILUC due to EU biofuels policy?' <http://goo.gl/Nql8X>

A study on indirect land use change for the EP Environment Committee, published earlier this year said: "Assuming current bioenergy and land use policy in the EU to remain unchanged until 2020, the order of magnitude of possible ILUC-related GHG emissions could nearly negate GHG savings from fossil fuels substituted by biofuels from dedicated energy crops." <http://goo.gl/St6N8>

All of those studies lead to the following conclusion: if policy does not change, biofuels overall will be worse for the climate than fossil fuels.

Despite the studies and its legislative mandate, the Commission has so far only published a short report (in December 2010) delaying the process until July 2011. It is currently drafting a full impact assessment on ILUC and evaluating four options to address it in a proposal by July 2011.

In January 2011 the Environment Committee published a report stating that: "*current scientific knowledge allows deriving a valid quantitative approximation for GHG emissions from ILUC effects which can be differentiated for various biofuels.*" "*It is recommended to define a robust ILUC factor, and to develop it further in the next years together with the international scientific community, especially activities in the USA, and of the Global Bioenergy Partnership (GBEP).*"

EU policy background

In December 2008, the European Union adopted the Renewable Energy Directive (RED) and the revised Fuel Quality Directive (FQD), which both contain targets that will drive the increased use of biofuels. Biofuels policy also contains a set of sustainability criteria and a GHG calculation methodology for biofuels.

Biofuels receiving public and financial support must reduce emissions by 35% compared to fossil fuels (rising to 50% in 2017). **However, GHG emissions from ILUC are not accounted for in the sustainability criteria, leading to a critical loophole.**

Including ILUC in the accounting was the main political demand of the European Parliament and a number of Member States when the biofuels policy was adopted. For this reason, article 19.6 was included in the RED (and repeated in the FQD), giving the Commission a legislative mandate by the end of the year 2010 to prepare a report and, if appropriate, a proposal on how to address and minimize ILUC impacts.

To prepare this report, the Commission financed four studies on ILUC and concluded two public consultations. The studies show that ILUC impacts are substantial and could outweigh the GHG savings of biofuels. On 22 December 2010 the Commission published a short report, in which it said that it is further studying four options in an impact assessment, which will be finalized by July 2011.²

How substantial is ILUC due to EU biofuels policy?

Probably the most realistic illustration of the likely impacts on land use change and GHG emissions due to planned biofuels expansion is the recent report by the Institute for the European Environment Policy (IEEP) entitled *Anticipated Indirect Land Use Change Associated with Expanded Use of Biofuels and Bioliquids in the EU*.³

Based on the information provided in the 27 National Renewable Energy Action Plans (NREAPs) submitted by EU Member States, and the figures from the Joint Research Centre study for the European Commission,⁴ the main conclusions reveal that:

- Europe is set to significantly increase biofuel use by 2020 when biofuels will provide 8.8% of total energy in transport – with 92% coming from food crops;
- An additional demand for these fuels is anticipated to lead to between 4.7 and 7.9 million ha of land use change, which is an area approximately equivalent to on the lower end: the entire area of the Netherlands to on the upper bound this is equivalent to an area the size of the Republic of Ireland.
- When land use change is taken into account, biofuels will emit an extra 50 to 83 million tonnes of GHG emissions per year – the equivalent to an extra 14 to 29 million cars on Europe's roads by 2020; and
- Unless EU policy changes, the extra biofuels that Europe will use over the next decade will be on average 81 to 167% worse for the climate than fossil fuels when ILUC is taken into account.

The results of this report clearly show that ILUC has to be addressed or the policy will actually lead to increased GHG emissions and other irreversible consequences, such as deforestation, conversion of other natural ecosystems, and loss of biodiversity.

² The Commission's report is available at: http://ec.europa.eu/energy/renewables/biofuels/doc/land-use-change/com_2010_811_report_en.pdf.

³ IEEP study is available at: http://www.ieep.eu/assets/786/Analysis_of_ILUC_Based_on_the_National_Renewable_Energy_Action_Plans.pdf

⁴ JRC report is available at: http://ec.europa.eu/energy/renewables/consultations/doc/public_consultation_iluc/study_4_iluc_modelling_comparison.pdf

The solutions

In light of the research on likely ILUC impacts and the existing legislative mandate, the Commission should publish a proposal that would **account for the full climate impact of biofuels, including the emissions resulting from indirect land use change**. The policy should be fixed by **introducing robust precautionary and feedstock-specific 'ILUC factors'** that reflect emissions from indirect land use change for different types of biofuels, including various types of second generation biofuels. It will be important that the Commission review these factors periodically, revising them as necessary in order to reflect the best available scientific evidence.

Although attaining exact estimates of emissions associated with ILUC is subject to the normal variation found in any modeling, there is a general agreement among scientists that **"it would be far less scientifically credible to ignore the effects of land use changes altogether than it is to use the best approach available to assess these known emissions sources"** (US Environmental Protection Agency 2009). In fact, taking no action would be the equivalent to concluding that ILUC has zero impact, which is untenable. In the US, indirect impacts are already taken into account in California's Low Carbon Fuels Standard and Renewable Fuels Standard II, which applies through federal legislation.

The practical effect of introducing ILUC factors is to promote biofuels that use little or no land and effectively reduce GHG emissions compared to fossil fuels. This would ensure that the original policy objective for EU biofuels policy – to mitigate climate change – can be upheld.

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