

Indirect Land Use Change Impacts of Biofuels - Consultation

The Netherlands' response – October 2010

The production of biofuels and bioliquids¹ can cause indirect land use change (ILUC) , leading to additional greenhouse gas (GHG) emissions and reduce biodiversity. The Netherlands welcomes the Commission's consultation on this complex issue.

The Netherlands wishes to emphasise that ILUC is not associated exclusively with biofuel production, but can also result from the use of new land for the production of crops, livestock farming, urbanisation and to some extent even fossil fuel production. And all *indirect* land use changes caused by biofuel production are connected with *direct* changes of other forms of land use, such as food or feed production.

The reason for focusing specifically on ILUC caused by biofuel production is that, unlike other forms of land use, the market for biofuel feedstocks is created by governments, and in the EU still depends on government policy. One of the primary objectives of EU biofuels policy is to reduce GHG emissions in the transport sector. In order to ensure that this objective will be achieved, the Netherlands strongly advocates factoring in both direct and indirect emissions when measuring biofuels' GHG performance. It is vital that ILUC is minimised and its magnitude mapped for each biofuel crop.

Policy efforts must focus on increasing the use of biofuels with little to zero ILUC risk.² In view of the growing volume of the biofuels market, it is important that measures to address ILUC are taken shortly. This will also offer opportunities for improving sustainability and efficiency in the agriculture sector as a whole.

- question 1 -

The Netherlands appreciates the Commission's initiative to order studies of ILUC, resulting in four reports. The main focus of the four studies is on quantifying the amount of hectares of additional land use and GHG emissions caused indirectly by an increased use of biofuels. Besides additional GHG emissions, ILUC also has other effects, for instance on biodiversity and food prices. The Netherlands would like these effects to be further investigated.

Two general conclusions can be drawn from the studies. Firstly, all modelling studies carried out show that ILUC does occur and that its magnitude is significant. Secondly, the various models yield very different outcomes in terms of both the magnitude of the effect and where the effect occurs. At the moment it is therefore not possible to quantify ILUC-related emissions with great certainty and precision. The outcomes of the models depend on various assumptions. The JRC-IE study

¹ In this paper, the term 'biofuels' applies to both biofuels and bioliquids, as defined in Article 2 (h) and (i) of the Renewable Energy Directive (2009/28/EC).

² In this paper, references to 'low ILUC risk' should be taken to mean 'little to zero ILUC risk'.

shows that, even when similar baseline scenarios are used, the models outcomes still vary because of different assumptions on how global markets function. It is therefore important that modelling work will be further refined, based partly on careful monitoring by the Commission. Clearly, the effectiveness of EU biofuels policy in reducing GHG emissions can only be proven if all GHG emissions related to biofuel production are mapped as accurately as possible.

To this end, the Netherlands believes the Commission should arrange for a research team, headed by the JRC, to improve existing agro-economic models. They should build on realistic, standardised assumptions and a baseline scenario based on reliable statistical data. These assumptions should be published and made available to all interested parties within and outside the EU, and evaluated regularly. The models used by the JRC should also capture emissions due to foregone sequestration and converting wetlands and peat lands, as this has not been done sufficiently to date. Equilibrium models should model all major feedstocks used in the EU. More work is also needed on accurate estimates of total land use and carbon stocks, and on charting the role of agricultural area expansion in deforestation. The JRC should organise regular stakeholder meetings to discuss progress in modelling work. The goal would be to ultimately select one of the existing internationally used agro-economic equilibrium models for EU policymaking purposes.

- question 2 -

The Netherlands believes that additional EU action is needed and calls on the Commission to introduce a legislative proposal on ILUC shortly, as provided for by the Renewable Energy and Fuel Quality Directives. These directives should be amended in order to prevent the continued use of and support for certain categories of biofuels which in a few years will be considered unsustainable and form an obstacle to increased sustainability (lock-in effects).

The quantification studies at hand show that crop-based biofuel production leads to ILUC and thus to substantial additional GHG emissions. Since the main objective of EU biofuels policy is to reduce GHG emissions, both direct and ILUC-related emissions need to be factored in when measuring biofuels' GHG performance. The results of the current studies underscore the need for action very shortly, with the notion that ILUC policy can be further refined when improved modelling becomes available.

- question 3 -

It is certainly possible to distinguish between biofuels with a low ILUC risk and other biofuels. The results of the current modelling studies mentioned above, however, do not allow for definite conclusions about differences in ILUC-related emissions between feedstocks. For the time being, the difference between low and high risk of ILUC depends on whether or not the biofuel is derived from a food or feed crop and if so, whether additional land was used. Biofuels derived from organic waste, for example, have low ILUC risk. When food or feed crops are used to produce biofuel, the ILUC risk depends on whether or not this leads to an expansion of the agricultural area. ILUC risk is low if, for example, yield per hectare can be increased in a sustainable way. Under question 4,

we define biofuels with a low ILUC risk in more detail. The Netherlands believes that ILUC should be addressed through measures aimed at the large-scale adoption of these low-risk biofuels.

- question 4 -

A. The Netherlands considers this option unacceptable because, based on the arguments given under 2, corrective action to minimise ILUC is needed shortly. Also, ILUC should continue to be monitored closely so that policy can be finetuned in the future.

B. See answer to C, below.

C. ILUC factors

In the opinion of the Netherlands, the assessment of biofuels' GHG performance should be based on all the GHG emissions related to their production. Not doing so would jeopardise the achievement of the main objective of EU biofuels policy – GHG emission reduction. One option would be to include ILUC factors in GHG emission calculations.

The Netherlands is in favour of introducing differentiated, crop-specific ILUC factors shortly. At this moment however, on the basis of the current quantification studies it is not yet possible to establishing crop-specific or otherwise differentiated ILUC factors .

The Netherlands urges that no later than December 2014 the values for crop-specific factors will be established on the basis of improved modelling work by the research group led by the JRC as mentioned above. The level of the factors should be reviewed every two years.

At this moment it is possible to introduce a temporary, uniform ILUC factor based on a risk management approach. Most modelling studies – that model ILUC as an outcome of a marginal increase in crop production for biofuels – put the additional emissions of land use change in the range of 15 to 220 g CO₂ eq/MJ (see GTAP and FAPRI, JRC-IE, Fig. 23, p. 100). At the same time, the results of the IFPRI study, carried out for the Commission, show a range of ILUC per feedstock of just (16-79 g CO₂ eq/MJ, see Table 12, p. 65). The EPA work shows within the US context a value of 8 grams for one feedstock with most values much higher.

In the opinion of the Netherlands, a temporary, uniform ILUC factor should be set at the lower end of the range, for example 16 g CO₂ eq/MJ. This factor and the crop-specific factors would not apply to biofuels with low ILUC risk, which would be allocated an ILUC factor of zero:

1. Biofuels derived from feedstocks that do not require additional land use, such as waste, residues, non-food lignocellulosic material, lignocellulosic material produced from waste, residues or from by-products, and possibly algae;³

³ If not be produced on land that is also suitable for agricultural cultivation. Algae produced in open water or on marginal lands would be considered as low ILUC risk, and no ILUC-factor would apply.

2. Biofuels derived from additionally produced raw materials. Additional production does not require the conversion of land with a pre-existing use. This must be backed by evidence, and verified. This category includes:
- a. biomass cultivation on unused land, such as improved severely degraded land,⁴ and cultivation on marginal and fallow land without any loss of existing ecosystem services;⁵
 - b. biomass resulting from increasing yields beyond those of the 'business as usual' scenario;⁵
 - c. biomass resulting from integrating existing agricultural production (including cattle raising) with biofuel feedstock production, in which existing production levels are maintained without expanding the area under cultivation.⁵

Promoting these categories of biofuels dovetails with the principle of cascading within the concept of a biobased economy.

The impact of ILUC can also be reduced by using the by-products arising from biofuel production. For instance when by-products are used as animal feed, less land is needed to produce fodder. The quantification studies have already factored in this effect and it would probably be sufficiently accounted for in a temporary, low ILUC factor, such as 16 grams.

Subtarget for energy sources with low ILUC risk

The Netherlands asks the Commission to consider introducing a secondary target for all energy sources with low ILUC risk in addition to a temporary, uniform ILUC factor of for example 16 grams for biofuels. This would mean that a certain proportion of the transport sector's target of 10% renewable energy by 2020⁶ would have to be filled in with renewables with a low ILUC risk, including the two categories of biofuel described above,⁷ renewable electricity and hydrogen fuel. The Commission would need to investigate the pros and cons of such a measure. Such a subtarget would create an extra incentive for individual producers to produce biofuels with low ILUC risk.

D. In the opinion of the Netherlands, the grandfathering clause provided for under Article 19 (6) of the Renewable Energy Directive offers sufficient protection for investments already undertaken in the biofuels sector. There is some confusion, however, with regard to the minimum GHG emission savings of 45% to be realised under this clause in the year 2017, because according to Article 17(2) of the Directive, in 2017 the minimum GHG emission savings from the use of biofuels must be at least 50%. In other words, two GHG emission requirements would be in effect at the same time. The Netherlands proposes correcting this unintended and undesirable effect by giving Article 17(2), 2nd paragraph, precedence over Article 19(6).

⁴ Pursuant to Directive 2009/28/EC, Annex V, part C, paragraph 8.

⁵ Examples may be found in: 'Mitigating indirect effects of biofuel production. Case studies and methodology', Ecofys, 2009.

⁶ Laid down in Article 3 (4) of Directive 2009/28/EC.

⁷ These categories include biofuels that count twice, pursuant to Article 21 (2) of the Renewable Energy Directive (2009/28/EC).