Ensus Response to EU Commission Consultation on Indirect Land Use Change

Executive Summary

It is central to what was agreed in the RED that securing greenhouse gas savings from “good” biofuels is absolutely crucial. Without a significant contribution from biofuels, the 2020 targets will simply not be met, whatever progress is made on technologies that will yield benefits over the longer term.

2020 is a short time away. And currently investor confidence and hence investment in this sector is falling not rising. So the prospects for meeting the 2020 targets are actually becoming more fragile. In fact Europe is falling behind here. Virtually all stakeholders agree that there need to be transparent comprehensive measures of greenhouse gas savings from biofuels, including capture of indirect land use change (iluc) effects.

Work over the past two years has shown that the current methodologies for the precise calculation of iluc effects need more development. However, there is an urgent need to find a practical way to make progress now. Some stakeholders have been developing - and explaining – what can be achieved through use of co-products and through responsible cultivation methods. This is helpful in raising understanding and confidence in the sustainable biofuels

EU policy makers need now to take a view on the merits– and risks – of different types of biofuels, with the highest degrees of confidence that can be achieved now. There is a need for a risk-based approach. What can be said robustly is that cereal based biofuels, produced in the EU through defined pathways capable of independent audit, and assessed on a comprehensive methodology that takes co-products into account, offer very significant greenhouse gas savings. Some other biofuels may also meet this challenge. For these “good” biofuels, regulatory certainty and support needs to be reaffirmed to ensure that current investments move forward and further investment flows, such that there is a good prospect of meeting the 2020 targets

In parallel further work on methodologies should continue, to enable further assessment of the potential and risks posed by other biofuels.

Introduction

Ensus is running a world scale (>400m litres/yr of ethanol) wheat to ethanol biorefinery in the north east of England. The plant refines surplus animal feed wheat to bioethanol (representing about 70% of UK biofuel production and about 90% of the UK crop based biofuel), protein rich animal feed and CO2 for the food and beverage sector. Ensus is fully committed to delivering biofuels with a high carbon emissions saving, and in a totally sustainable manner.

Ensus agrees with the broad consensus that there are risks of indirect land use change effects (iLUC) from production of some biofuels, with potential impacts upon local environmental quality and biofuel lifecycle greenhouse balances. If the EU is to realise its ambition of creating a truly sustainable biofuel industry then biofuel policy must robustly deal with the iLUC issue. If this is achieved, it will create the necessary

confidence for renewed investment to meet the climate change goals in 2020 and beyond.

It is widely recognised that iLUC impacts vary depending on product pathways and the crops used in the production process. It is important that these differences are properly reflected in any EU response. However, there is currently no consensus on the modelling methods and model parameters that should be used to determine the GHG emissions from iLUC.

Q1) Do you consider that the analytical work referred to above, and/or other analytical work in this field, provides a good basis for determining how significant indirect land use change resulting from the production of biofuels is?

No, the work referred to above does not.

The work referred to above does not provide a good basis for determining the levels of iLUC from biofuels. There are several fundamental errors in the models used, which lead to an overestimate of the amount of iLUC caused by biofuel production. These are detailed in the attached note (entitled "Issues of concern with models for calculating GHG emissions from indirect land use change"). There is, however, other recent work that has been peer reviewed and which is based on sound science, and which does provide a reasonable basis for determining iLUC impacts. This is discussed below.

Ensus has been involved in the calculation of GHG emissions from iLUC since the debate began at the beginning of 2008. In a presentation to the UK Gallagher Review in April 2008 we pointed out that there were errors in the Searchinger work, because it did not properly account for the beneficial impacts of co-products and the effect of demand growth on yield growth. At the Paris iLUC workshop in January 2009 an Ensus presentation to modellers again pointed out the errors being made in agro-economic models in their treatment of high protein co-products and yield growth. This was followed in September 2009 with a widely circulated note on concerns with agro-economic models, including the treatment of co-products, yield growth and trade amongst other issues, which all tended to over-estimate the GHG effects of ILUC.

Yet most of the modelling work published by the Commission still has the same fundamental errors in the models, which overestimate the GHG emissions from iLUC, in particular for bioethanol from cereals. Unfortunately parts of the Commission have continued to support these unscientific models and to publish their results, despite these models making erroneous assumptions, lacking transparency, and lacking a credible scientific basis.

Ensus has contributed to a growing body of scientific literature that now recognises and underpins the beneficial land use change impact of co-products and incremental yield increases. In December 2009 two peer reviewed scientific papers by Ensus were published, detailing how to credit biofuel co-products and model increased yield growth with increased demand. In 2010, ADAS published a peer-reviewed scientific paper describing in detail a methodology for calculating the land use credit derived from EU bioethanol co-products.

Recent peer reviewed, journal published work by E4tech, sponsored by the UK Department for Transport [1], also provides a sound scientific basis for estimating the iLUC impact of biofuel feedstock consumption. This analytical work avoids nearly all the problems identified in the DGTREN review of the economic models referred to above.

This body of work shows that when bioethanol is produced from cereals such as wheat, and the co-products are used for animal feed, any potential iLUC impact can be minimised and production of such biofuels can in fact result in a positive iLUC impact.

Q2) On the basis of the available evidence, do you think that EU action is needed to address indirect land use change?

From our work, drawing on available scientific evidence, we do not believe that indirect land use change represents a material risk arising from the production of bioethanol from cereals as long as the co-products are used for animal feed. These results have been confirmed by E4tech model results.

A robust EU response is needed to recognise the low iLUC risk of bioethanol from EU cereal feedstocks to give investors the confidence to expand this highly sustainable biofuel industry.

Q3) If action is to be taken ……..is it possible to draw sufficiently reliable conclusions on whether indirect land use change impacts of biofuels vary according to

- **Feedstock type**
- **Geographical location**
- **Land management**

Indirect land use impacts for biofuels used in the EU are primarily determined by feedstock type and the use of the co-products. This is because the feedstock type is the major determinant of nearly all the factors that cause higher or lower ILUC.
These factors are:

- The land use change effects of the biofuel co-products
- The proportion of the increase in demand for a feedstock that is met by yield increases v land area increases
- Whether the extra land requirement will be met from utilising recently abandoned land or by land use change from natural vegetation
- The type of natural vegetation and hence the carbon stock of the land that is converted to meet increased demand.

With regard to geographical location, cereals used for biorefining in the EU are grown in the local market where they are used. Any increase in demand will primarily be met by increased growth within the country or local region. When considering iLUC implications, there is therefore only a need to consider production in that region. Put another way, for biofuel from EU cereals, the iLUC impact will relate to cultivation in the EU.

[1] Available at http://www.dft.gov.uk/pgr/roads/environment/research/biofuels/

Land management has substantial environmental benefits but is mainly an issue for direct land use change. It is only relevant to indirect land use change for land management changes at an international scale. It is assumed that any biofuel supplier who can identify the land used and hence determine the direct land use change for a consignment of biofuel will not also incur an ILUC penalty. It may well be possible to reduce direct land use change impacts by good land management practices, but this is not an ILUC issue.

Q4) Based on your responses to the above questions, what course of action do you think is appropriate.

From the work that Ensus has done, supported by the UK Government's work by E4 Tech, it is clear to us that the iLUC impact of cereal based biofuels in the EU is positive and production of these biofuels should be encouraged.

Any EU proposed way forward should be robust and support the further development and investment in EU based cereal based biorefining as part of its response. An important test for the EU's policy response to iLUC should be whether the proposed approach gives sufficient confidence to investors to put further money into the sector.

Whatever measures are taken to encourage or discourage the use of selected biofuels, they must be based on robust analysis.

Biofuel producers should be incentivised to take the right action - for example, in the case of cereal biorefining by using co-products for animal feed rather than energy generation. Biofuel producers that take such measures should be allowed to use peer-reviewed models to substantiate their iLUC impact. Such a methodology would then be fully consistent with existing methods for determining the overall GHG emissions of different biofuels.