ProjektZentrum Berlin
Neue Promenade 6
10178 Berlin

20 September 2012

To: Dacian Ciolos
CC: Georg Haeusler, Jose Manuel Silva Rodriguez

Re: iLUC factors in the Renewable Energy and Fuel Quality Directives

Dear Commissioner Dacian Ciolos,

I am writing with regard to the ongoing discussion about the possibilities for dealing with indirect land use change in the Renewable Energy Directive (RED) and Fuel Quality Directive (FQD), in particular the option to introduce 'iLUC factors' based on the results of modelling by the International Food Policy Research Institute (IFPRI) using the MIRAGE model. I would like to draw your attention to a new peer reviewed paper from the ICCT, just published in the journal *Global Change Biology: Bioenergy*, that demonstrates that introducing iLUC factors in the RED and FQD would be an effective policy intervention, and maximise the carbon savings from European biofuels policy.

In the paper, *'A model-based quantitative assessment of the carbon benefits of introducing iLUC factors in the European Renewable Energy Directive'*[1], we find that the IFPRI MIRAGE modelling represents the best available scientific evidence for the likely magnitude of iLUC caused by a European biofuel mandate. While there is always some degree of uncertainty in any modelling results, basing a policy proposal for iLUC factors on the IFPRI MIRAGE modelling would be consistent with the requirement in the Renewable Energy Directive to "Analyse, on the basis of best available scientific evidence, ... the inclusion of a factor for indirect land use changes in the calculation of greenhouse gas emissions".

We have shown that without iLUC factors, we would expect only marginal overall carbon savings from expanding crop-based biofuels in Europe. These savings would have an expected cost of over 2,500 € per tonne of carbon dioxide[2], with a significant risk that there would actually be a net emissions increase. In particular, biodiesel will probably deliver no carbon savings whatsoever. In contrast, we show that introducing iLUC factors could improve the average carbon saving offered by crop-based biofuels by 50 percentage points, making it likely that the 50% carbon saving required by the RED and FQD sustainability criteria would really be achieved.

We are aware that there has been concern expressed by representatives of the European biodiesel and farming industries about the possibility of introducing iLUC factors, and that it has been argued that the MIRAGE results are not an adequate basis for legislation. We dispute this conclusion – the 2011 IFPRI-MIRAGE study by David Laborde is a strong piece of work, and the conclusions are robust and well supported by the literature. I attach

[1] http://onlinelibrary.wiley.com/doi/10.1111/j.1757-1707.2012.01207.x/abstract

[2] ICCT Working Paper 2011-9 'Indirect land use change in Europe: Considering the policy options' http://www.theicct.org/indirect-land-use-change-europe-considering-policy-options

as an annex to this letter a short discussion of some of the common criticisms levelled at MIRAGE.

In conclusion, the science of indirect land use change is logically sound and adequately well developed to justify regulation. Introducing iLUC factors in European biofuels legislation would be an effective and appropriate response to this science. The compromise policy proposal reported by the Reuters news agency on Monday 10 September, in which as an alternative to introducing iLUC factors in the Renewable Energy Directive the contribution to the target from food based biofuels would be capped at 5%, would also be a reasonable approach to guaranteeing that the policy delivers real benefits. In contrast, the option of raising the carbon saving threshold outlined in previous Commission consultation documents would not address the fundamental problem, and by excluding iLUC from the carbon accounting would allow a significant and misleading overstatement of the benefits of biofuels policy.

Please feel free to contact us if you would like any further explanation of these comments and our paper, to be provided with copies of any of our other research into indirect land use change or to arrange a personal briefing,

Yours sincerely,

International Council on Clean Transportation

http://www.theicct.org/spotlight/indirect-land-use-change-iluc

icct
THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

Annex: answers to common criticisms of the IFPRI study

The arguments used against MIRAGE-IFPRI study have focused in particular on four contentions.

1. That MIRAGE does not distinguish between direct and indirect land use change;
2. That MIRAGE does not represent the sustainability criteria in the Renewable Energy Directive;
3. That MIRAGE does not model the oilseed sector well;
4. That MIRAGE contains uncertainties.

I consider the first two of these arguments to be spurious. It is correct that MIRAGE does not distinguish direct from indirect land use change, but this is irrelevant. The analysis of indirect land use change is a question of comparing a possible future without biofuels (the baseline) to a possible future with biofuels, and identifying the change in land use between the two. The identification of a land use change as 'direct' or not is unimportant – the climate does not care whether the palm oil from a freshly deforested plantation goes directly to a biodiesel plant or is used indirectly to replace rapeseed oil taken from the food market. Similarly, while it is broadly correct that the sustainability criteria from the Renewable Energy Directive are not modelled[3], this also is irrelevant to the quality of the results. As noted by Frank et al. (2012) in their paper *'How effective are the sustainability criteria accompanying the European Union 2020 biofuel targets?'*, the sustainability criteria will be leaky, allowing the cherry-picking of compliant feedstock for delivery to biofuel plants while non-compliant feedstock is sold to the food market. While the introduction of a more comprehensive chain of custody for biofuels is an important step towards sustainability, the criteria on their own are unlikely to have any significant effect on net global land use change – and hence there is no need to consider them when modelling iLUC emissions. To put it simply, trying to use these arguments to discredit IFPRI-MIRAGE suggests a failure to understand how iLUC and ILUC modelling works.

While the first two arguments have no merit whatsoever, the third is at least relevant, as the biodiesel iLUC results do rely on having a reasonable modelling approach for the oilseeds sector. Our new paper notes that rather than being inadequate, MIRAGE actually compares favourably to other modelling approaches (including the GTAP approach already used for regulation in California) in its treatment of the oilseed/oil meal/vegetable oil complex. Particular attention has been drawn to the oil yields from rapeseed crushing used in MIRAGE. While it seems possible that a higher crushing yield than used in MIRAGE is justified by the most up to date data, making a slight adjustment to the parameter would not change the fundamental conclusion that rapeseed biodiesel does not represent a good climate change mitigation strategy. More generally, it is inevitable that in a model based on many hundreds and thousands of inputs there will be some that could be updated, but finding on contestable value is not a good reason to discount the results. There are other parameters that could be changed to reflect more up to date data that would increase the iLUC factor results – for instance, the ICCT has shown that peat decomposition emissions are currently substantially underestimated by IFPRI-MIRAGE. If these peat emissions were corrected, this would likely balance out any reduction in iLUC results caused by increasing the crushing yields. The IFPRI-MIRAGE work has

[3] In fact, the carbon saving threshold of 50% is represented in the results

already been updated once to reflect stakeholder input and modelling advances. In due course, it will be appropriate to update these results again, but the recognition that the science is advancing is not a reason to ignore it or for regulatory inaction.

Finally, as regards the general point that MIRAGE contains uncertainties, this is true – but then all economic modelling contains uncertainties. For effective policy, and more specifically to meet the requirements for a proposal on iLUC laid out in the Directives, it is necessary to deal with uncertainty and make decisions based on the best available evidence. Our new paper shows that when we recognise and deal with the uncertainty in iLUC results, it is rational to expect iLUC factors to be an effective policy intervention. It is revealing that even a review of MIRAGE *commissioned by the European Biodiesel Board itself*[4] concluded that:

> *"The MIRAGE model by IFPRI used to address land use change caused by the European biofuel mandate represents a sophisticated modelling approach in the field of CGE modelling. It uses up-to-date data inputs and (a) new methodological way to treat land and land use emissions on a global scale. The studies from 2010 and 2011 both transparently report the assumptions made and critical parameters chosen",* and further that *"For all biodiesel options, taking into account by-product allocation or not, the typical well-to-wheel values of the EU-RED plus land use change emission values from the Laborde's Monte Carlo Simulation lead to higher emissions than the required 35% emission savings. These results are robust."*[5]

In conclusion, while it is legitimate and constructive to discuss areas in which the IFPRI-MIRAGE model could be enhanced for future modelling, none of the criticisms we have seen constitute an adequate reason to dismiss the science or to believe that iLUC factors would be an inappropriate policy intervention.

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[4] The Kiel Institute for the World Economy: 'Review of IFPRI study "Assessing the Land Use Change Consequences of European Biofuel policies and its uncertainties"'. http://www.ebb-eu.org/EBBpressreleases/Review_iLUC_IfW_final.pdf

[5] Ibid, see page 19

[redacted]

From: HAEUSLER Georg (CAB-CIOLOS)
Sent: 21 September 2012 09:31
To: CAB CIOLOS ARCHIVES
Subject: FW: iLUC factors in the Renewable Energy and Fuel Quality Directives (letter)
Attachments: ICCT letter to Commissioner Ciolos.pdf

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Subject: iLUC factors in the Renewable Energy and Fuel Quality Directives (letter)

Dear Commissioner Ciolos,

I attach a letter from the International Council on Clean Transportation (ICCT) on the question of indirect land use change in European biofuels policy.

The ICCT is an independent nonprofit organization founded to provide first-rate, unbiased research and technical and scientific analysis to environmental regulators globally. Our mission is to improve the environmental performance and energy efficiency of road, marine, and air transportation, in order to benefit public health and mitigate climate change.

Yours,

[redacted]

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