

The logo for Greenpeace, featuring the word "GREENPEACE" in a bold, green, sans-serif font.The logo for Oxfam, consisting of a stylized human figure inside a circle, followed by the word "Oxfam" in a bold, black, sans-serif font.

**Friends of  
the Earth**

## **Media Brief – Gallagher Review to be published early July**

### **What is the Gallagher Review of Biofuels?**

The Gallagher Review is a major study commissioned by the UK Government on the 'indirect' or 'displacement' impacts of biofuels on carbon emissions from land use change and on food security. It is being conducted by the Renewable Fuels Agency - a new body set up to administer UK biofuel policy. This briefing describes what biofuels are, explains the difference between direct and indirect impacts of biofuels and the implications for biofuels policies in the UK and EU.

### **What are biofuels?**

The remit of the UK Government-commissioned study is transport fuel, and so this briefing will use the term 'biofuel' only to describe liquid transport fuels from biological origins. In practical terms, and with current technology, this means biodiesel derived from vegetable oil, and ethanol derived from crops containing carbohydrate such as wheat, sugar cane, maize etc. Confusingly, the term 'biofuel' can be used to describe all fuel of biological origin, whether solid, liquid or gas – but not so in this briefing.

### **What are the differences between direct and indirect impacts of biofuels?**

#### **Direct Impacts**

Major concerns have already been expressed about the direct impacts of biofuels by scientists and NGOs – in particular the role of biofuels in driving-up food prices and pushing agriculture into critical carbon sinks and biodiversity rich habitats, such as rainforests, grasslands and wetlands.

The principal justification for UK policies that promote biofuels is mitigation against climate change. Approximately a fifth of greenhouse gas emissions are as a result of deforestation. Forest destruction, especially in tropical areas such as the peatlands of Indonesia, releases enormous quantities of CO<sub>2</sub>. The damage that arises from clearing peatland for biofuel crops dwarfs the CO<sub>2</sub> savings from biofuels, and risks other well-documented impacts such as biodiversity loss and social conflicts.

Scientific studies suggest that it will take well over 400 years of biofuel use to pay back the CO<sub>2</sub> released in the initial process of clearing Indonesian peatland forest to grow the biofuel crop.<sup>1</sup> This is a direct impact – rainforest is being cleared to grow biofuel. In theory this can be managed through standards which stipulate that biofuels may not be grown on previously-deforested land for example, and therefore should already be integrated into the full life-cycle assessments of biofuels.

The UK Government has made an attempt to estimate and integrate these ‘direct’ land use change emissions into the carbon intensity calculation that biofuel companies need to submit under the reporting system of the Renewable Transport Fuel Obligation (RTFO). However, this attempt is fundamentally flawed because biofuel companies are allowed to report zero emissions from land use change if data on previous land use is “unavailable”. In Europe, the draft Renewable Energy Directive proposes to only take account of these land use emissions where companies provide their own quantitative data, and this is not mandatory.

So these direct impacts can be challenging to calculate but - at least conceptually - it is possible to address them through stringent standards and good monitoring, even if the proposed systems are not yet adequate.

Added to these considerations, however, is the question of ‘indirect’ or ‘displacement’ land use change and its wider impacts upon global food security. The UK Government commissioned the ‘Gallagher Review’ to look at these indirect impacts, which are harder to measure and manage but potentially even more important than direct impacts.

### **‘Indirect’ or ‘Displacement’ Impacts of biofuels**

This is the focus of the Gallagher Review. The indirect impacts of biofuel cultivation occur far from where the biofuel is grown. They arise through the markets in agricultural commodities, and the policies that shape those markets. Recent evidence indicates that even where biofuels are grown on land already in cultivation, farmland is displaced into other areas, destroying natural habitats that are valuable carbon stores.

It is clear that any additional pressure on limited land resources has the potential to drive further agricultural clearance of forests (and other habitats) and to drive up food prices. The Gallagher Review set out to examine the evidence that biofuel policies in the UK and the EU are having, or are likely to have, such negative impacts; and on what scale.

For example, the vast majority of European biodiesel is made from rapeseed oil. The direct impacts of this may be limited if it is cultivated on European cropland,

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<sup>1</sup> Fargione et al, Published Online February 7, 2008 Science [doi:10.1126/science.1152747](https://doi.org/10.1126/science.1152747)

thousands of miles from the nearest tropical peatland forest.<sup>2</sup> But as we divert more and more rapeseed crop into fuel, European industry is buying increasing supplies of edible oils from overseas – including palm oil, imports of which doubled between 2000 and 2006 and are set to double again by 2012.

By 2020, Oxfam has estimated that EU biodiesel demand will require the EU to import over 10 billion more litres of foreign edible oils – more than double current levels. The expansion in global cropland to meet this additional demand will entail indirect emissions, particularly if that expansion is into critical carbon sinks such as peatlands, permanent grasslands or rainforest – and the cost is not just in greenhouse gases but also in terms of the loss of vital wildlife habitats and species, and forest people's homes and livelihoods around the world.

Biofuels also represent a significant and rapidly growing new source of demand for principal food crops – the OECD estimates that in the last two years, biofuels accounted for about 60% of the increase in consumption of grains and oilseeds. The impact of this is a rise in global food prices – for example escalating demand for corn due to the US ethanol programme has affected international commodity markets, pushing the prices of other grains and edible oils higher as consumers switch to alternatives and farmers stop growing other crops in order to grow corn.

These indirect effects are far removed from the production of the biofuel crops themselves. Even if UK fuel retailers and refiners choose not to purchase biofuels made from tropical plants like palm or soya oil, increased demand for biofuels will still have knock-on effects that could impact on sensitive habitats.

### **Are indirect impacts significant?**

Recent papers in *Science* have indicated that if these negative indirect effects are included in calculations regarding the emissions reductions coming from biofuel crops then these crops can actually be significantly worse for the climate than the fossil fuels they replace<sup>3</sup>. According to these calculations, biofuels are literally worse than useless in tackling climate change.

Oxfam has estimated that expansion in oil palm plantations in Indonesia to replace some of the edible oils diverted into EU biodiesel as described above could trigger the release of between 3.1 and 4.6 billion tonnes of CO<sub>2</sub> – about 50 to 70 times the savings in annual emissions the European Commission hopes to be achieving from biofuels by 2020.

Meanwhile global food prices have nearly doubled in the last three years – this is hitting poor people the hardest, who typically spend 50-80% of their incomes on food. The World Bank has estimated that over 100 million people have fallen into poverty as a result. The IMF, the World Bank and the UN have identified biofuels as a significant driver of this food price inflation.

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<sup>2</sup> Note however that if permanent fallow or setaside is ploughed up to plant such crops, the emissions from this direct land-use change can significantly alter the 'carbon intensity' of the resulting biodiesel

<sup>3</sup> Searchinger et al, Published Online February 7, 2008 *Science* [doi:10.1126/science.1151861](https://doi.org/10.1126/science.1151861) ;  
Fargione et al, Published Online February 7, 2008 *Science* [doi:10.1126/science.1152747](https://doi.org/10.1126/science.1152747)

## **Why does this matter now?**

The EU is proposing a target for renewable transport fuels (in practice, biofuels) of 10% of all energy used in road transport by 2020. Current usage is small by comparison, so this would lead to a huge increase in demand for biofuels. The targets will be discussed in European Parliament Committees in early July, and ministers may even agree the target in the autumn. If indirect effects are not properly dealt with in assessing the scale of future biofuel use in Europe, this huge demand for biofuels could end up accelerating climate change and worsening global poverty.

When the UK and other Member States originally committed themselves to the 10% target, it was on the condition that it could be met 'sustainably'. The outcomes of Gallagher are crucial to understanding if this is possible.

## **What needs to happen?**

There must be a moratorium on targets, subsidies and tax breaks for biofuels consumption until it is clear that we can obtain genuinely good biofuels – at a sustainable level - rather than something that initially looked good on paper. The Gallagher Review is expected to conclude that indirect impacts cannot be predicted with confidence but that the risks are too great not to invest more in fully understanding them before imposing further biofuel targets.

The Gallagher Review is a UK Government-commissioned review; Gordon Brown must lead the debate in Europe in order to ensure the development of genuine sustainability criteria, stopping the 10% target passing into legislation ensuring that the speed and scale of biofuel supply in the EU is commensurate with our understanding of its impacts on the poor, the climate and the wider environment.

Sustainability criteria for biofuels and biomass should be introduced urgently and must include the need to ensure that use of the fuel leads to real greenhouse gas emissions reductions, taking indirect impacts into account. No biomass or biofuel should come from a source linked to the conversion of forests or other areas of 'High Conservation Value', such as wetlands or peatlands.

The UK in particular has legislation which obliges transport fuel suppliers to use biofuels at a proportion of 5% by volume by 2010, rising from 2.5% in 2008. These targets must also be suspended.

## **A better view of bioenergy – not just biofuels**

Bioenergy (which includes biofuels, biomass and biogas) and the land upon which it is grown are precious resources. It has a crucial role to play in the renewable energy mix, but must be used sensibly and produced sustainably if this is to be achieved. There is no point in using a biofuel if it does more harm than good, so we need a positive approach that maximizes the benefits of using bioenergy, while guaranteeing that it only ever comes from sustainable sources in ways that align with the objectives of truly sustainable land management – for the benefit of people, of wildlife, of our natural resources and the climate.

Firstly, Government should establish a sustainable bioenergy policy that prioritises the use of biomass for highly efficient combined heat and power plants so that the maximum amount of energy from the fuel is turned into useful clean heat and electricity which can deliver much better carbon savings than the use of the same land for conventional biofuel.

Secondly, if biofuels themselves are used, they must be subject to strong sustainability criteria and the best available understanding of their impacts, including indirect ones, must be used to direct policy and practice.

Efforts to develop new and truly sustainable bioenergy sources for heating and electricity must be stepped up and more support given to maximizing the use of biowaste sources from agriculture, food waste or sewage for example, which can be turned into sustainable biogas. Future bioenergy technologies, from algal anaerobic digestion also needs research and development support for potential future use in heat and electricity generation. Transport biofuels may feature in this research.

### **Alternative means of reducing emissions from transport**

Many biofuels are not tackling climate change effectively, and bring with them significant environmental and social risks. There are, however, other means of reducing transport emissions without these negative side-effects which we must develop and encourage now. Delivering a sustainable low-carbon transport system means taking a new direction in transport policy and improving vehicle efficiency while encouraging public transport and better driving habits. These are all more efficient ways of tackling climate change without the huge sustainability question marks that surround many of today's commercial biofuels.

### **Contact**

Greenpeace – James Turner 020 7 865 8255  
Friends of the Earth – Kenneth Richter 07944 009201  
Oxfam – Amy Barry, 01865 472313 or 07980 664397  
RSPB – Cath Harris 01767 693554 or 07739 921464