

INTRODUCTION

1. Our members are suppliers of biofuel, feedstocks, small and medium scale renewable transport fuel developers, and strong supporters of the need to address climate change in all energy sectors, and welcome the opportunity to respond to the consultation.
2. Our over-arching view is that, while transport biofuels are certainly more expensive than other forms of carbon saving, there are as yet no adequate alternatives that can readily address the increasing carbon emissions from the transport sector.
3. Moreover, home produced and processed biofuels can offer hard pressed farmers alternative markets and improve local economies, whilst still saving carbon.
4. We have been particularly interested in the work undertaken in the UK by Dr Nigel Mortimer at North Energy Associates, who has undertaken work for the UK Government both when at Sheffield Hallam University Rural Research Unit, and more recently in private practice. This is summarised in terms of per hectare benefits from growing biofuels in UK conditions in Annex II to *Climate Change and the European Countryside*, (Climatic Research Unit, University of East Anglia, Country Land and Business Association, and European Landowners Organisation, 2007). Dr Mortimer's latest paper we have seen was given to the UK Agricultural Economics Society on 31 January 2007, and is available for download at http://www.aes.ac.uk/documents/events_tmp/1day07/NigelMortimer.pdf
5. His work demonstrates that the processing of first generation biofuels accounts for some 50% of the carbon footprint. We thus regard it as fundamentally important to incentivise the best practicable environmental option both for the production of the feedstock and the processing to fuels.
6. In the UK, the Low Carbon Vehicle Partnership (LowCVP) has developed a carbon accounting model, and this is in discussion with our EU partners.
7. We quote from the LowCVP Bioethanol well to wheel report¹ below:-

"All of the Models considered generate net fossil energy savings. The worst performing scenario (Model a) uses 0.9GJ of fossil fuel to produce 1 GJ of bioethanol. Some Models actually save more fossil energy than is contained in the produced ethanol as a result of the large energy saving attached to electricity production. The Green House Gases (GHG) savings follow a similar pattern, but are reduced because of the GHG emissions in farming, principally the N2O emissions.

10. In reaching the above conclusions the study has highlighted the significance of several key factors: Firstly, by-product use and the associated credits are essential to the environmental performance of the bioethanol facility. This is not surprising for an integrated bio-refinery, which produces both electricity and liquid biofuel. The Combined Heat and Power (CHP) scheme selected and the use to which the Distillers' Dark Grains and Solubles (DDGS) is put are very important. Finally, because the production of bioethanol is energy-intensive, the use of renewable fuel

¹ <http://www.lowcvp.org.uk/assets/viewpoints/Biofuels%20WTW%20final%20report.pdf>

(straw) to power the ethanol facility would be a very positive step if economically feasible.

*11. An analysis was conducted on cost to assess the relative ranking of the scenarios with regard to 'cost of reducing GHG emissions'. The data presented follow a simplified economic model, and are not meant to be used for financial decisions. The cost of CO2 avoided appears to be lowest for Model b21. Use of DDGS as fuel generates higher energy and GHG savings, but delivers less economic return than use as animal feed. **It may not be commercially viable to invest in the enhanced carbon savings unless more value can be gained from the additional environmental benefit.** This aspect, including the cost of GHG reduction relative to other measures in the transport sector or other sectors, requires further study and is beyond the remit of this report.*

12. This study highlights that the way in which fuels are produced has a significant impact on energy balance, GHG emissions and costs. Regulators should consider fuel production processes as well as final fuel properties when deciding policy for future fuels. In particular

– Incorporation of CHP into the ethanol plant significantly improves energy and GHG balances
– Use of straw as an energy source further improves energy and GHG savings
– Use of DDGS as energy for power generation rather than as animal feed gives much greater energy and GHG savings (although it is unlikely to be the most economic option)"

8. The level of GHG from EU feedstock production varies but within relatively small limits in conventional agriculture.
9. Second generation processes are not yet economic, but when available will reduce the feedstock costs by allowing feedstocks with lower GHG loadings.
10. The body of work undertaken by Nigel Mortimer and the LowCVP underpins our response to the consultation.
11. We suggest that demanding biofuels at any cost will be a self defeating policy, and are not convinced that the motorist will forgive the Commission if EU biofuels policy increases the cost of motoring and at the same time incentivises the destruction of virgin rainforest and increases GHG emissions.

We set out below our responses to the detailed questions

BACKGROUND

1. How should a biofuel sustainability system be designed?

We welcome the Commission's proposal for a simple incentive/support system for biofuels and shares the objective to further increase the greenhouse gas benefits of EU biofuel policy and to minimise environmental risks.

We agree the system should discourage:

- the conversion of land with high biodiversity value for the purpose of cultivating biofuel feedstocks;
- the use of environmentally harmful systems for biofuel production.

We agree the system should avoid any discrimination between domestic production and imports and should not act as a barrier to trade and that its' operation should be monitored with a view to making it more sophisticated in future.

However, given the overarching importance of climate change to the interests of Europe's countryside and farming and forestry industries, we regard the question of securing carbon standards in international trading mechanisms (particularly the WTO) as fundamentally important to the agenda.

The WTO has not yet ruled on carbon standards in the context of restraints on trade, and provided the same standards are applied to both EU production and imports, we regard the potential for challenge to be low. We would in any case regard the defence of carbon accounting standards as fundamental to any energy policy that seeks to address climate change, and would argue that the Commission should be prepared to lead on the wider agenda by imposing standards at the outset.

We agree that the way forward should be based on the proposals set out in the consultation as follows:

- a) The legislation should list the "sustainability criteria" to be fulfilled by the biofuels that are used to fulfil the biofuels target.
- b) Biofuels that failed to meet one of these criteria should not count towards national biofuel targets. They should not count towards national "biofuel obligations". They would not be eligible for tax reductions and similar types of financial support.
- c) Member States would be responsible for ensuring that the criteria were respected. The legislation would set out some procedural requirements (for example on reporting, verification and monitoring). The legislation would define types of evidence that Member States would have to accept as evidence that the sustainability criteria were fulfilled.

WE RECOMMEND THE FOLLOWING ENVIRONMENTAL SUSTAINABILITY CRITERIA FOR BIOFUELS

Sustainability criterion 1 – achieving a minimum level of greenhouse gas savings of at least 50% using a whole life cycle basis of calculation, including emissions from land use change

Biofuels used to fulfil the requirements of the legislation should not emit more greenhouse gases in production than they save by avoiding the use of petrol or diesel – or (to give a safety margin) should achieve at least 50% greenhouse gas savings

The directive should define 'default values' for net greenhouse gas savings from different types of biofuel.

They should cover greenhouse gases in general, not just carbon dioxide.

Biofuel suppliers could choose to use these default values, or to provide more precise information on the savings from their particular production process.

Sustainability criterion 2 – avoiding major reduction in carbon stocks through land use change

Biofuels used to fulfil the requirements of the directive should not use raw material from land that was in certain land uses before 1990 – the start date of the Kyoto period. These land uses would be those that are associated with high carbon stocks and should include both wetlands and tropical rainforest.

The directive should define the land uses in question.

Sustainability criterion 3 – avoiding major biodiversity loss from land use change

Biofuels used to fulfil the requirements of the directive should not use raw material from land that was in certain land uses before 1990 (again adopting the Kyoto calculation date). These land uses would be those that are associated with exceptional biodiversity, and in an EU context would include sites designated as Natura 2000 sites

The directive should define the land uses in question.

THE TYPES OF EVIDENCE REQUIRED TO DEMONSTRATE ENVIRONMENTAL SUSTAINABILITY CRITERIA

1. Some EU Member States and other countries are developing national schemes to measure greenhouse gas impacts. Once accredited for EU use through a comitology process, these would be evidence of greenhouse gas emissions in production (for sustainability criterion 1). The same approach could apply to international schemes that may be developed.

2. There are voluntary, international schemes setting standards for the production of agricultural and forest products. Some include requirements that would prevent land use change of the types described by criteria 2 and/or 3. Once accredited for EU use through a comitology process, these would be evidence that these criteria have been respected.

3. We are also strongly concerned by the irreversible effects of intensive energy crops production caused by massive afforestation, and are hence calling for the respect of environmental standards such as cross compliance or agro-environmental schemes for exports from third countries such as Brazil.

The European Community could negotiate bilateral or multilateral agreements with third countries, confirming that these countries have in place procedures to ensure that the types of land use change described by criteria 2 and/or 3 do not happen. The existence of such an agreement would be evidence that these criteria have been respected.

4. In the absence of these types of evidence, it would be for Member States to determine how to verify the fulfilment of the criteria. The directive could lay down minimum requirements for how this should be done.

This option is put forward as a starting point for discussion and to give an indication of how a system could work in practice.

GENERAL QUESTIONS

Question 1.1: Do you think the "possible way forward" described above is feasible?

Yes, we agree the proposed way forward, subject to our comments above.

Question 1.2: What do you think the administrative burden of an approach like the "possible way forward" would be? (If possible, please quantify your answer.)

We recognise that a requirement to demonstrate the criteria puts a cost on biofuel producers, and suggests the best way to minimise that cost is to adopt default values based on existing EU farming practice, such as the UK "Red Tractor" assurance scheme. However, without assurance on carbon savings, there is no point in developing biofuels, and both grower and processor would have to be subject to basic certification. Certain extant assurance schemes may be suitable for adaptation to this role

Question 1.3 Please give your general comments on the "possible way forward", and on how it could be implemented. Does it give an adequate level of assurance that biofuels will be sustainably produced?

If you think the problem should be tackled in a different way, please say how, giving details of the procedures that would be used.

We agree the possible way forward and is satisfied that, provided a minimum saving of 50% on a life cycle basis is adopted from the outset, including land use changes, that the implementation proposed is adequate.

Question 1.4: Carbon stock differences between land uses would be taken into account under criterion 2. Should they also be taken into account under criterion 1? If so, what method should be used to determine how the land in question would have been used if it had not been used to produce raw material for biofuels?

We regard GHG savings as fundamental to the question of support for biofuels, and thus insist that land use changes should feature under the first criteria. This is because the breaking up of permanent pasture, or the deforestation of tropical rain and other forests is a very large net emitter of greenhouse gases, and should always be taken into account if related to the production of the feedstock.

If the land use change is internalised into the calculation, the question of alternative use does not arise: the change to be measured is between land use in 1990 and the land use in biofuel feedstock production.

Question 1.5: As described in the "possible way forward", criterion 3 focusses on land uses associated with exceptional biodiversity. Should the criterion be extended to apply to land that is adjacent to land uses associated with exceptional biodiversity? If so, why? How could this land be defined?

No, we do not agree that adjacent land should be included. We regard the term "adjacent" as causing un-necessary confusion, as it wants certainty. In an EU context, growing biofuel feedstocks will not have adverse effects on adjacent land that is designated.

Question 1.6: How could the term "exceptional biodiversity" (in criterion 3) be defined in a way that is scientifically based, transparent and non-discriminatory?

We suggest that the scientific basis for the designation of Natura 2000 sites is suitable, and that other areas so protected should be subject to the same rigorous approach. Internationally, the Bern Convention, Ramsar sites and IUCN will be relevant.

2. How should overall effects on land use be monitored?

The problem

Two of the sustainability criteria in the "possible way forward" in section 1 relate to the direct conversion of land for biofuel production from other uses.

Increased demand for biofuels is also likely to have an indirect effect on land use, leading to an increase in the total amount of land devoted to forestry and crop production.

This land use change will be associated with greenhouse gas savings from biofuel use. It will have other environmental effects. These could be positive or negative. The environmental effect of using land that would otherwise have been used for an out-of-

town housing development is different from the effect of using land that would have been a biodiverse habitat.

It seems clear that these indirect effects cannot be linked to individual consignments of biofuel. But they should still be monitored.

Possible way forward

The legislation could ask the Commission to report regularly on:

- how land use would have developed if biofuel use had remained constant;
- how land use has in fact developed; and
- the estimated effect on overall land use of increasing biofuel use.

Question 2.1: Please give your comments on the "possible way forward" described above. If you think the problem should be tackled in a different way, please say how.

We regard the above approach as reasonable.

Question 2.2: Do you think it is possible to link indirect land use effects to individual consignments of biofuel? If so, please say how.

No, we do not believe that indirect land use can easily be linked to individual consignments of biofuel, but are concerned that direct links between land use change on the land where the crop is grown are captured in the whole life cycle basis GHG analysis. Where a country exporting biofuels was found to be doing so at the expense of direct or indirect land-use change, it would therefore potentially disqualify all exported biofuels from the country in question from counting towards targets. In that case, certification of individual estates might be still possible on the basis of individual whole-estate carbon audit combined with labelling and traceability.

3. How should the use of second-generation biofuels be encouraged?

The Commission intends to bring forward a proposal to encourage the production and use of second-generation biofuels.

Question 3.1: How should second-generation biofuels be defined? Should the definition be based on:

- a) the type of raw materials from which biofuels are made (for example, "biofuel from cellulosic material")?
- b) the type of technology used to produce the biofuel (for example, "biofuels produced using a production technique that is capable of handling cellulosic material")?
- c) other criteria (please give details)?

We suggest that "second generation" biofuels may include wider feedstocks than cellulosic material, and it would be a mistake to define them solely in this way. For example, we have had notice of research projects in the USA based around alga into ethanol, and given that such technologies offer significant outputs of biofuel from very small areas of land, we would regard them equally as "second generation".

Possible way forward

The legislation could require Member States to give an advantage to second-generation biofuels in their support systems.

For example,

- Under national biofuel obligations, second-generation biofuels would count extra (for example, double) – this would mean that an obligation to achieve a 2% share of first generation biofuels could be fulfilled, instead, with a 1% share of second-generation.

- The legislation would confirm that second-generation biofuels may receive higher subsidies than first-generation biofuels (subject to Community state aid rules and applicable Community tax legislation).

Question 3.2: Please give your comments on the "possible way forward" described above. If you think the problem should be tackled in a different way, please say how.

As suggested above, we argue the Commission should, from the outset require that in order to qualify for certificates, producers should provide self certified GHG audits on a whole life cycle basis to show not less than 50% GHG saving. When land use change emissions are taken into account, it is certain that unsustainable biofuels grown on former rain forest land could not qualify.

From 2010, certificates should be limited to fuels that can demonstrate at least a 50% whole life cycle greenhouse gas saving, using robust but practical accounting formulae, but which include the emissions of any land use change on the land the crop is grown on since 1990. Where producers can demonstrate a 100% saving, they should be awarded two certificates, and the same prorata for savings between 50 and 100%. The energy balance of the entire process, including the export of renewable energy from the production facility, should be included. (see Professor Nigel Mortimer's paper on biofuel GHG and energy balances delivered to the Agricultural Economics Society on 31 January 2007, mentioned above.)

The UK is considering this option (set out in the box below) and we suggest the Biofuel Directive ought to incentivise (and certainly not deny) this approach.

The Commission should note the conclusions drawn by Professor Mortimer, that it is perfectly feasible to improve the carbon balance of "first generation" biofuels to beyond 100% savings, and ensure that policy incentivises sustainable biofuel processing from the outset. At the same time, the Commission should permit for support for R&D and demonstration of "second generation" biofuel processing.

Obligation level expressed as an amount of carbon to be saved through the use of renewable transport fuels, for example issuing different amounts of certificates for every unit of renewable transport fuel according to amount of carbon saved	Greater certainty of carbon saving. Good incentives for use of those fuels delivering highest level of carbon saving (including "second generation" biofuels).	Complex. Depends on robust carbon saving methodologies being agreed and accepted internationally, otherwise WTO risks. May penalise EU producers. May be inconsistent with EU Biofuel Directive. Might have to recognise the fact that not all fossil fuels are equal in terms of their carbon footprint.
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Question 3.3 Should second-generation biofuels only be able to benefit from these advantages if they also achieve a defined level of greenhouse gas savings?

We answer yes.

4. What further action is needed to make it possible to achieve a 10% biofuel share?

The problem

The proposed target for biofuels is a 10% share, by energy content, in 2020. The easiest way to get biofuels into the market is by blending them directly with ordinary fuel and using them in low blends in ordinary vehicles. The most widely available biofuels today are ethanol (replacing petrol) and biodiesel (replacing diesel) - although other petrol and diesel replacers exist. The fuel quality directive (directive 98/70/EC) limits the direct blending of ethanol in petrol to 5% by volume. This equates to 3.4% by energy content. The diesel standard (EN590) limits the direct blending of biodiesel in diesel to 5% by volume. This equates to 4.4% by energy content. If the 10% (energy content) target is to be met mainly by direct blending of ethanol and biodiesel, these limits will need to be changed. They will also need to be changed if the existing 5.75% (energy content) target for 2010 is to be met mainly by direct blending of these fuels.

The current situation

As a first step, the Commission has proposed amending the fuel quality directive to increase the maximum blending of ethanol in petrol to 10% by volume (6.8% by energy content). This proposal is under consideration by the Council and the European Parliament. The Commission has given the European Committee on Standardisation (CEN) a mandate to amend the diesel standard to allow a 10% biodiesel blend (8.8% by energy content). This process may take a long time – perhaps 4 years – and may not lead to widespread availability of fuel containing 10% biodiesel.

Question 4.1: Should the legislation include measures to ensure that diesel containing 10% biodiesel (by volume) can be placed on the market, and is in fact placed on the market?

We answer yes.

Other options for solving the problem

Even if the changes described in the last section come to fruition, they will not be enough for the 10% target to be met – if it is to be met mainly by direct blending of ethanol and biodiesel.

The target could be met through other means than the direct blending of ethanol and biodiesel:

1. More ethanol can be added to petrol in the form of the fuel additive ETBE. However, limits on ETBE blending in the fuel quality directive mean that even with maximum use of ETBE, the 10% target will not be reached.
2. Ethanol and biodiesel can be used in high blends – 85% or 95% ethanol, 100% biodiesel, for example – outside the scope of the fuel quality directive and the diesel standard. However, unlike low blends, these fuels need specialised vehicles and distribution systems.
3. Other biofuels that can be used are biomethane (made from biogas), methanol (made from biomass-based synthesis gas) and dimethyl ether (DME). However, these fuels also need specialised vehicles and distribution systems.
4. New types of biofuel or ways of using them could avoid the blending constraints in the fuel quality directive and the diesel standard. An example is the second-generation biofuel "BTL" ("Biomass-to-liquid" or Fischer-Tropsch diesel). However, it is not certain when or if these fuels and technologies will come onto the market on a wide scale.

Question 4.2: Should the legislation include measures to encourage the use of ethanol and biodiesel in high blends? If so, what?

We answer yes: E85 should be supported through grant aid for petrol retailing facilities, together with zero cost road fund licences , and concessions on congestion charging, as well as a proportionate level of certificates for the biofuel content.

In addition, we suggest that 100% biofuel and recovered vegetable oil based biofuel should not be subject to road fuel duty when used in specially converted vehicles and in off road situations as Straight Vegetable Oil.

Question 4.3:

Should the legislation include measures to encourage the use of biomethane, methanol and DME in transport? If so, what?

We suggest that the Swedish adoption of Biogas for public transport should be encouraged.

Possible way forward

If none of these methods can be relied on to ensure that the target will be met, it will be necessary to allow a further increase in the share of ethanol that can be blended in ordinary petrol – up to 20%, for example – and perhaps also to allow a further increase in the share of biodiesel that can be blended in ordinary diesel – up to 15%, for example.

For manufacturers to take these requirements into account in designing the vehicles that will be on the roads in 2020, a decision should be made soon.

Question 4.5: Should the legislation ask the Commission to review, by a given date, whether it is possible to be confident that the 10% target can be achieved through:

- a) rules that allow 10% blending by volume of ethanol in ordinary petrol, plus
 - b) rules that allow 10% blending by volume of biodiesel in ordinary diesel, plus
 - c) the four options listed under 'other options for solving the problem';
- If so, what should the date be?**

We suggest the date should be as soon as reasonably possible, but in any case no later than 2012.

If the review were to conclude that the target is unlikely to be met, what action should the Commission take?

We suggest the Commission should consider taking powers to require vehicle manufacturers to deliver vehicles capable of using higher blends of biofuels.

Question 4.6: More generally, what role should taxation play in the promotion of biofuels (considering different situations such as low blends, high blends and second-generation biofuels)?

In general there is need for a progressive tax role in the development of biofuels, and greater harmonisation between member states. For example, the differential between mineral diesel and biodiesel in the UK is too small to give an adequate incentive in the face of established fossil fuel technology with long-developed economies of scale, whereas in Germany there is much greater encouragement. Consequently much of the UK oilseed rape crop is processed in Germany instead of the UK.

We have a number of small scale biofuel producers amongst our members, who when questioned said that they would go out of business were the existing fuel taxation concessions replaced by National Obligations. It is not simply a question of the uncertain value of certificates awarded under obligation methodologies (though that is certainly an issue) but also that of cashflow, registration costs, and the relative market power of the parties trading in certificates.

We suggest that one option to secure the ongoing and wholly sustainable valuable recycling of used vegetable oils as biofuels, and the equally valuable work done by those producing 100% straight vegetable oils would be to continue to permit fuel taxation concessions for small scale biodiesel producers and those processing waste cooking oils.

It is suggested that producers making more than 450,000 litres pa should not be permitted this option.

Thus for a very modest additional cost by way of fuel duty forgone, the unintended consequences of tipping many thousands of litres of used cooking oil into landfill, and the equally wasteful cost of stranding investment already made by SME biofuel producers would be avoided.

Tax concessions also have a role on promotion of R&D for second generation and high blend biofuels. The Swedish example is noted as being particularly successful in this regard.

We strongly support the Commission's position encouraging Member States to develop a policy and regulatory framework through certificates, fiscal incentives and/or incorporations obligations. Special efforts are necessary to bring about broad market access for second generation biofuels/biogas, namely through standardization. It is crucial to promote information campaigns aimed at raising awareness of the biofuels potential within the civil society, from biomass producers to users.