

UK Nature Conservation and Landscape Agencies’* response to the European Commission’s public consultation

“Biofuel issues in the new legislation on the promotion of renewable energy”

***Joint Nature Conservation Committee
Scottish Natural Heritage
Countryside Council for Wales**

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1) HOW SHOULD A BIOFUEL SUSTAINABILITY SYSTEM BE DESIGNED?

QUESTION 1.1 *Do you think the "possible way forward" described above is feasible?*

We welcome the proposal to design an initial biofuel sustainability system.

We believe that a carefully planned and innovative (appropriate, proportionate, sustainable and suitably incentivised) policy framework designed to increase the role of biofuels in transport could deliver benefits to wider environmental objectives. But this requires any new legislative instrument on biofuels to be set in the context of existing environmental legislation and its related objectives and targets.

There are elements of the proposed initial design which should include further sophistication from the outset. Discouraging the conversion of land areas with ‘high biodiversity value’ is essential, but is too simplistic. Well-functioning and well-structured ecosystems are not simply isolated islands with high biodiversity; they require appropriate habitat matrices and management in the wider countryside. The Ecosystem Approach (see Annex 1) promoted by the Convention on Biological Diversity provides a framework for delivering the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. This should form the basis for any new renewables policy framework.

The proposed biofuels policy framework is not sufficiently coherent with other existing environmental policies and legislative instruments such as the Habitats Directive, the Water Framework Directive and the EC Biodiversity Communication and associated Action Plan. A more appropriate value for the EU biofuel target for transport fuels would relate to the amount of biofuel that can be produced sustainably, in accordance with European Council Conclusions in March 2007¹, by meeting well-designed sustainability criteria. These criteria must reflect whole

¹ Presidency Conclusions Brussels European Council (8/9 March 2007)
http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/93135.pdf

life-cycle carbon accounting. The relative environmental sustainability of biofuels production should be assessed against all other available renewable energy sources, in order to ensure the correct renewable energy options are developed.

Respecting the current world trade regulations, a voluntary system attached to national-level obligations, such as the UK's Renewable Transport Fuel Obligation², might be the most promising way forward. The EU should support and help develop a global mechanism to establish sustainable biomass production. International bodies such as the International Energy Agency or UN-Energy could play a role in developing and administering a globally sustainable biomass/biofuels market.

Specific comments on the three elements of the 'possible way forward'

- a) The directive should specify a modified and expanded list of 'sustainability criteria' that can be used to meet an appropriate EU biofuels target. The criteria must ensure a coherent assessment of sustainability principles, taking account of other environmental policies and legislative instruments. These sustainability criteria are equally relevant for biomass used for heating and cooling and in electricity generation.
- b) Any fiscal or financial incentives must be linked closely to environmental performance. Any internal financial support must be set at a level to ensure that growing and processing feedstock for biofuels in an environmentally unsustainable manner is uneconomic. Such a framework might also encourage overseas producers to meet the sustainability criteria, to qualify as legitimate biofuel sources for the EU market.
- c) Responsibility for ensuring sustainability should not be left to Member States alone. It must be a shared responsibility with the Commission or an independent 'watchdog'. Even with common criteria and evidence requirements, leaving responsibility solely with Member States would be likely to result in unacceptable disparities of application. This would be a particular risk with regard to imports from outside the EU.

Therefore it is essential for the Commission, or an independent (certification/accreditation) organisation, to ensure that standards, good practice and traceability (in particular for imports) are adhered to consistently across the EU.

The sustainability criteria and procedural requirements should be designed in such a way as to:

- Use existing agreed standards, which can be modified as appropriate (e.g. the UK Woodland Assurance Scheme, Good Agricultural and Environmental Condition (GEAC), the International Roundtable on Sustainable Palm Oil production, or the Better Sugarcane Initiative), and draw on existing regulatory frameworks such as the Convention on International Trade in Endangered Species³ and Forest Law Enforcement, Governance and Trade⁴.
- Establish minimum standards of evidence to ensure consistency of monitoring across all Member States.

² UK Department for Transport Renewable Transport Fuel Obligation
<http://www.dft.gov.uk/pgr/roads/environment/rtfo/?view=Standard>

³ Convention on International Trade in Endangered Species www.cites.org

⁴ Forest Law Enforcement, Governance and Trade <http://ec.europa.eu/environment/forests/flegt.htm>

- Adopt good practice, supported by the preparation of specific guidance, to ensure positive impacts are maximised and adverse impacts are avoided wherever possible.
- With regard to imports, establish guarantees based on accreditation standards as currently used successfully with fairtrade and organic products.
- Allow traceability of both biofuels and their feedstocks in a similar way to the forest industry or the fruit and vegetable chain. Mechanisms must be put in place to ensure it is possible to track the country or region of origin for biofuels, or feedstocks used for biofuels, independently from their use in other industrial/food processes (e.g. palm nuts or oil which are used in both food and fuel production).

QUESTION 1.2 *What do you think the administrative burden of an approach like the "possible way forward" would be?*

The enforcement of an appropriate sustainability assurance scheme will carry an administrative burden but as long as this is proportionate, it will be justified by the purpose. However, not only can this burden be shared, it can also be minimised by ensuring a high standard of evidence (as in Box 2) is achieved. A robust but proportionate checking system in Member States, in concert with the restriction on what will count towards national 'biofuel obligations', will act as a driver for producers to meet the sustainability criteria. This therefore effectively distributes the administrative burden to all stakeholders along the entire chain.

The administrative burden will be further reduced if the Commission or independent watchdog invests early in ensuring high standards are achieved in the types of evidence quoted in Box 2, points 1-3, i.e. rigorous assessment, and where necessary strengthening, of: i) national schemes to measure greenhouse gas emission savings in production of biofuels; ii) voluntary international schemes preventing products being sourced where land use changes are detrimental to carbon storage and biodiversity; and iii) stringent criteria for achieving consistent and robust bilateral or multilateral agreements with third countries, such as ensuring strict national environmental governance structures, policies and plans.

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.

Response to the environmental sustainability criteria (Box 1)

General comment

The sustainability criteria should be widened to ensure they are comprehensive. Standards should include criteria for maintaining the soil resource and its quality, water quality, air quality (non-greenhouse gas emissions), landscape, and wider social and rural development, amongst others.

Sustainability criterion 1 – achieving a minimum level of greenhouse gas savings

We agree with the premise of ensuring greenhouse gas emissions from the production of biofuels to meet any legislative requirements must not exceed the savings made by reducing the use of petrol and diesel.

A 10% minimum threshold for greenhouse gas saving is not sufficient nor consistent with the results of other studies and reports, including the Commission's own Biofuels Progress Report⁵. A more ambitious threshold should be accompanied by a whole life-cycle carbon assessment that includes crop type, cultivation practice, processing methods, transportation costs and final exhaust emissions.

The Low Carbon Vehicle Partnership⁶ states that most feedstocks can deliver more than 50% greenhouse gas emission savings. The Biofuels Progress Report (January 2007) notes that first-generation biofuels, produced in Europe using the most economically attractive production method, result in greenhouse gas emission reductions of 35-50% on a well-to-wheel basis. Therefore the Commission must set the minimum greenhouse gas saving threshold as close to these levels as possible without compromising other aspects of sustainability.

It is essential to establish a mechanism to link greenhouse gas emission savings with the development of national biofuel obligations to ensure market preference for biofuels with the greatest greenhouse gas savings. A tiered incentive approach might be appropriate. This would also act to promote the necessary investment for the development and use of second-generation biofuels, which in general perform better than most, but not all, first-generation fuels.

'Default values' for different types of biofuel, at the feedstock level, should not be limited to the feedstock type. Additional values need to be set to ensure appropriate 'farm' management systems are in place (e.g. extensive systems with low fertiliser and pesticide inputs). Default values should be set at a conservative level to ensure that there is an incentive for accurate reporting by the industry that will establish a realistic picture of potential greenhouse gas emission savings.

The criterion must specify what is meant by 'biofuels suppliers', i.e. farmers/foresters, processors or the distribution network. If the greenhouse gas emission savings attributed to any consignment of biofuel are to be accurate and transparent, accurately recorded information is required for the whole production and delivery chain.

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

We agree with the premise underpinning this criterion. The Intergovernmental Panel on Climate Change guidelines for land use, land-use change and forestry⁷ provide a sound basis for identifying the components that should be included in the analysis of carbon stock changes.

Ecosystems with significant surface or below-ground (dead and living) biomass and soil carbon, which may become net emitters of carbon as a result of any land use or management change, should not be available for growing biofuel feedstocks. Equally, forests⁸ and other ecosystems

⁵ COM(2006) 845 final http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0845en01.doc

⁶ Low Carbon Vehicle Partnership <http://www.lowcvp.org.uk>

⁷ IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry <http://www.ipcc-nggip.iges.or.jp/public/gpplulucf/gpplulucf.htm> (land categories provide the framework for further sub-division by activity, management regime, climatic zone and ecosystem type as necessary to meet the needs of the methods for assessing carbon stock changes and greenhouse gas emissions and removals.)

⁸ From a biodiversity perspective, the most important forest/woodland types include well-established, ancient or virgin forests/woodlands. Natural and semi-natural native forests/woodland are usually of greatest value for biodiversity.

including wetlands (e.g. peatlands) and grasslands, which act as important carbon sinks (carrying out carbon sequestration), should not be available for biomass production.

We recognise the constraints to applying this criterion on a global scale. Satellite imagery or other Earth observation datasets could be used to monitor land use change at country down to regional or local levels, although this would be a large task to administer. Other alternatives include using national data on agricultural production, FAO data, US Department of Agriculture GIS maps and ecosystem maps from organisations such as the WWF. In the UK, the Department for Environment, Food and Rural Affairs is committed to setting up an ‘observatory’ to provide early and enhanced monitoring of how reform of the Common Agricultural Policy is driving changes at the farm level, including environmental impacts. This approach could be scaled up to operate at the EU level.

Defining land use alone is not adequate. The directive should also define how and what land uses and land management techniques are most likely to deliver increases in carbon stocks in different ecosystems. Land use types and management systems associated with this kind of biofuel feedstock production (such as short-rotation coppice) could be positively incentivised.

The directive should also aim to prevent the growth and sourcing of biofuel feedstocks from degraded land which retains the potential for restoration of its carbon sink properties, e.g. degraded peatlands/bogs or fragmented forest ecosystems.

Under footnote 6 on page 5 of the consultation document the ‘mass balance’ option should be deleted because an appropriate incentive/support scheme should ensure that unsustainably produced raw material/biofuel is not economically viable, making this option redundant.

Bilateral/multilateral agreements (Box 2, point 3) designed to establish sustainability standards with key producing countries should cover all biofuel production within the country to ensure unsustainably-produced biofuels are not channelled to destination countries with little regard for provenance and standards. Standards, such as those associated with the soya and palm oil round tables and the sustainable sugar initiative, should be prerequisites. In the case of agreements with newly emerging biofuel producers such as those in Africa, the same principles should apply, but should be linked to technical assistance to help develop the agricultural techniques etc. needed to deliver fuels to an appropriate standard.

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

See responses to Question 1.5 and Question 1.6, which outline why sustainability criterion 3 should be significantly modified and why the term ‘exceptional biodiversity’ does not fit the purpose of protecting biodiversity from the growth of the global biofuels market.

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?*

Carbon stock differences between land uses should be taken into account under criterion 1. By using a whole carbon life-cycle assessment approach for criterion 1 to assess levels of greenhouse gas saving, sustainability criterion 2 could be considered as one integral part of that life-cycle assessment calculation. Any flux in carbon stocks in a particular land area as a result of growing

biofuel feedstocks should be included to get an accurate idea of the amount of greenhouse gas savings. Therefore these two criteria should sit closely together.

We recognise there are a number of difficulties involved in developing a methodology to calculate carbon stock changes. First, the uncertainty of how long any land area will be used for growing a particular biofuel feedstock. Second, choosing the scale for assessment and reporting. Third, changes in land use or management practices, e.g. from grassland to biofuel cropland, that would have a long-term carbon stock difference would need to be reported by the farmer/land owner. Resolution of some of these difficulties may be assisted by using scientifically accepted carbon stock values associated with particular habitats or agricultural systems.

QUESTION 1.5: *As described in the "possible way forward", criterion 3 focuses 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?*

Preventing land use for biofuels only in areas associated with exceptional biodiversity is unsustainable. Sustainability criterion 3 must be modified taking account of the following points.

Firstly, it is very difficult to define ‘exceptional biodiversity’ areas (although some suggestions are made in our response to question 1.6 below). Areas of exceptional biodiversity may not necessarily be defined as highly species diverse areas; they may include areas with rare or low-density species. Major biodiversity loss should not be assessed in terms of numbers of individuals or numbers of species.

Secondly, to infer that biodiversity will only be affected by the growth of biofuel feedstocks on land areas associated with ‘exceptional biodiversity’ is wrong. Areas of exceptional biodiversity (or biological elements of them) rely on less exceptional areas in the surrounding landscape to make them exceptional. These less exceptional areas are vital to the matrix of habitats and the movement of biodiversity (genes, species and habitats) across any landscape. The concept of managing and protecting biodiversity only by protecting isolated ‘islands of land’ is ecologically unsustainable. The new directive must not allow biofuel-producing countries, either in the EU or globally, the scope to convert large tracts of land, whilst only protecting isolated island areas.

The title for sustainability criterion 3 (‘avoiding major biodiversity loss from land use change’), is in itself incompatible with both the EU target agreed by the Heads of State and Government in Gothenburg and the global target decided by the Convention on Biological Diversity in the Hague⁹. The notion of avoiding ‘major’ biodiversity loss suggests that some biodiversity loss as a result of the increasing role of biofuels in energy markets is acceptable. It is not acceptable and is in complete discord with the high-level commitments mentioned above.

⁹ At the EU level, Heads of State and Government agreed in Gothenburg in 2001 to the ambitious target to ‘halt the decline [in the EU] in biodiversity by 2010’. At the global level, through Decision VI/26 of the Convention on Biological Diversity (The Hague, 2002), Parties (including those in the EU) committed themselves to ‘achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level’, and this target was subsequently endorsed by Heads of State and Government at the World Summit on Sustainable Development in Johannesburg in 2002.

New biofuels legislation must be wholly consistent with the aims, objectives and targets of the EC Habitats Directive¹⁰. The aim of the Habitats Directive is to contribute towards ensuring biodiversity through the conservation of natural habitats and wild fauna and flora of Community interest in the European Union, with measures taken designed to maintain them at, or restore them to, favourable conservation status (FCS).

Most critically, in relation to the proposal to protect only areas of exceptional biodiversity, achieving FCS requires measures to be taken to address the maintenance or restoration of habitats and non-bird species beyond the network of designated sites (Special Areas of Conservation). We strongly suggest that DG TREN discuss in detail the implications of its proposals for the Habitats Directive with DG Environment to ensure the necessary compatibility. There are similar 'wider countryside' liability safeguards set through the Environmental Liability Directive for birds of Community importance listed under the Birds Directive¹¹, as well as for the non-bird species and habitats under the Habitats Directive.

We believe the Commission Communication¹² and accompanying 'EU Action Plan to 2010 and Beyond'¹³ include a number of targets and actions that provide useful suggestions as to how the new biofuels framework should be set in the context of the 2010 biodiversity targets and commitments, related to both domestically and globally produced biofuels, e.g. the role of rural development measures to protect biodiversity in the wider countryside in the EU, and the role of increasing the amount of external assistance in bilateral agreements associated with biodiversity protection. Annex 2 provides more detailed examples of relevant targets and actions, along with some suggestions as to how DG TREN could consider using them to assist its developing thinking.

There are a number of other mechanisms and additional sustainability criteria that could contribute effectively to protection of the whole biodiversity resource:

- *Spatial planning*. Expanding biofuel production should be considered in the context of land use planning at a landscape/ecosystem-scale. Ecosystem-scale planning is required to ensure the continuation of ecosystems with good structure and function, for the inherent value of biodiversity as well as the long-term sustainable provision of ecosystem goods and services. This would be the basis of an additional sustainability criterion. Member States need to ensure an appropriate selection of cropping systems and feedstock types to suit local conditions and to ensure that new monocultures are at least 'effect-neutral' to

¹⁰ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, provides the legal framework for the management and protection of non-bird conservation in the European Union and is the means by which the European Community meets its obligations as a signatory to the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The Habitats Directive is therefore a key instrument in securing the European Community target to 'halt the decline [in the EU] in biodiversity by 2010'.

¹¹ Council Directive on the conservation of wild birds (79/409/EEC) http://europa.eu.int/eur-lex/en/consleg/pdf/1979/en_1979L0409_do_001.pdf

¹² COM(2006) 216 final 'Halting the loss of biodiversity by 2010 – and beyond. Sustaining ecosystem services for human well-being' http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0216en01.pdf

¹³ Sec(2006) 621 EU Action Plan to 2010 and beyond http://ec.europa.eu/environment/nature/biodiversity/current_biodiversity_policy/biodiversity_com_2006/pdf/sec_2006_621.pdf

biodiversity, nature conservation, landscape value, etc. This will help achieve protection of biodiversity in the wider countryside.

- *Cross-compliance*. At EU level, cross-compliance under EC Regulation 1782/2003¹⁴ is a useful lever for ensuring basic environmental protection on agricultural land by establishing minimum standards for land and environmental management. Farmers must meet a substantial set of Statutory Management Requirements to ensure Good Agricultural and Environmental Condition (GAEC) in order to receive in full their single farm payment.
- *Ecosystem Approach/Precautionary Principle/SEA/EIA*. The principles of the Ecosystem Approach (see Annex 1) and the Precautionary Principle should be adhered to. Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) procedures should be fully embedded to inform spatial planning decisions.
- *External assistance*. Preference (if not exclusivity) for bilateral and multilateral agreements should be given to exporting third countries that demonstrate high levels of biodiversity protection associated with robust national biodiversity governance structures.

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?*

As explained in our answer to Q1.5 (above), the supposition under sustainability criterion 3 that one can protect biodiversity by locating biofuel crops in one place, with biodiversity in another, is fundamentally flawed. Appropriate procedures need to be put in place to ensure that the biofuels 'revolution' does not diminish biodiversity globally nor the goods and services delivered from the associated ecosystems.

Preventing the loss of biodiversity from increasing biofuel production may be addressed through sustainability criterion 3 by ensuring appropriate governance structures and environmental safeguards are in place, and respected, in any particular country. However, no one governance process for biofuels can be appropriate for all situations. The directive must provide flexibility to allow governance processes to be adapted to different circumstances.

Biofuels should be grown first and foremost on existing agricultural land as opposed to expanding the agricultural land area at the expense of natural or semi-natural habitats, either directly or indirectly. The agricultural land resource must be used as efficiently as possible. Extensive production of biofuel feedstocks should be encouraged because, although yields will be lower, it will reduce the life-cycle carbon account and be environmentally more sustainable. Application of cross-compliance will encourage this within the EU, but not beyond, so an accreditation scheme should incentivise extensively produced biofuel feedstocks.

Habitats/ecosystems deemed critically important for global biodiversity should be identified as 'no-go' biofuel areas. A high level of scrutiny of biofuel crop choices, management practices etc. should be carried out in semi-natural areas to ensure that only biodiversity-neutral or biodiversity-positive choices are permitted to closely suit local conditions.

¹⁴Council Regulation 1782/2003

http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_270/l_27020031021en00010069.pdf

A possible alternative way forward?

It is vital to identify the critically important areas for biodiversity globally where the growing of biofuel feedstocks should not be permitted. However, while there is no universal system for informing this judgement, at EU level a legislative framework already exists for ensuring important Community-level biodiversity is protected. This should help the Commission's thinking in developing a more suitable sustainability criterion for biodiversity in the directive.

At EU level, Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), designated under the Habitats and Birds Directives respectively, form the Natura 2000 network of protected sites. These sites are designated to protect those areas containing significant examples of species and habitats of Community importance. Despite this, it would be incorrect to specify that the growing of all biofuel feedstocks in these protected sites should be prevented, because under particular local conditions and with careful selection of the crop type some positive (mainly species) biodiversity benefits may be possible. Stringent application of the precautionary principle, Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA), would be important prerequisites. A similar network of sites covering wider Europe also exists, known as the Emerald Network.

At the global level, there are a number of international protected area systems, with associated designated sites important for global biodiversity conservation. These are UNESCO's natural World Heritage Sites¹⁵ under the World Heritage Convention, Biosphere Reserves¹⁶ under UNESCO's Man and Biosphere Programme, and Ramsar sites¹⁷ (wetlands of international importance) under the Ramsar Convention on Wetlands. Additionally there are national protected area systems. Other systems which have identified globally-important biodiversity areas have been developed by non-governmental organisations. These include: Conservation International's Biodiversity Hotspots¹⁸, WWF's Global 200 Ecoregions¹⁹, Birdlife International's Important Bird Areas (IBAs)²⁰ and Endemic Bird Areas (EBAs)²¹, and Plantlife International's Important Plant Areas (IPAs)²².

Despite the existence of these site-based systems, they do not account for all biodiversity nor do they provide an easily useable framework for establishing a robust sustainability criterion on biodiversity. As a minimum, and in line with the precautionary principle, any biofuels sourced outside the EU (as well as produced domestically) should not contribute to biodiversity decline in these areas.

Designing an effective biodiversity sustainability system for biofuels

Sustainable management and use of all ecosystems is paramount. The risks of unsustainable use include reduced biodiversity value and diminished carbon sequestration function, as well as deleterious effects on a wide range of other ecosystem goods and services that underpin human

¹⁵ UNESCO World Heritage <http://whc.unesco.org/en/about>

¹⁶ UNESCO MAB Biosphere Reserves <http://www.unesco.org/mab/BRs.shtml>

¹⁷ Ramsar Convention <http://www.ramsar.org>

¹⁸ Conservation International Biodiversity Hotspots <http://www.biodiversityhotspots.org/xp/Hotspots>

¹⁹ WWF Global 200 Ecoregions <http://www.worldwildlife.org/science/ecoregions/g200.cfm>

²⁰ Birdlife International IBAs <http://www.birdlife.org/action/science/sites/index.html>

²¹ Birdlife International EBAs http://www.birdlife.org/action/science/endemic_bird_areas/index.html

²² Plantlife International IPAs <http://www.plantlife.org.uk/international/plantlife-ipas.html>

well-being. Typically, tropical rainforests, wetlands (notably peatlands) and grasslands are especially vulnerable.

There is an urgent need to develop a sustainability system that ensures biodiversity is not diminished globally, covering all land cover or land use types. The Commission might consider the following suggestions as elements of a system to be integrated in the directive that would account for locally and globally important biodiversity protection.

A simple hierarchy of different habitat types could be used to inform decision making as to where biofuels should optimally be grown to prevent any biodiversity loss, e.g.:

1. cultivated agricultural areas (most favoured option)
2. non-native habitats
3. secondary/semi-natural native habitat or uncultivated land
4. pristine/virgin native habitat (least favoured option)

Initially, it should be assessed whether all biofuel feedstocks could be sustainably grown within existing cultivated areas. Only if this does not prove to be an adequate land area would other habitat types be considered for biofuel production. Other sustainable biofuel cropping options which deliver biodiversity benefits in other habitat types should always be considered.

Further sustainability safeguards could be achieved through a hierarchical approach to prioritising support for particular sources of biomass (starting with the highest priority):

1. Biomass from existing waste sources
2. Biomass from sources where harvesting will lead to a clear net benefit to biodiversity, natural resources and landscape quality
3. Sources where harvesting will have a net neutral impact on biodiversity, natural resources and landscape quality
4. Sources where biomass harvesting may cause a short-term negative impact on the natural environment but this is clearly outweighed by the long-term benefits of tackling climate change

In addition, it may be necessary to specify localities where biomass harvesting would be unacceptable because of the long-term/irreversible impacts on the natural environment. This approach would maximise efficiency of use of existing biomass, minimising land take and maximising potential for biodiversity benefit.

The measures listed above should be fully integrated into a robust biodiversity governance process that creates a best-practice incentives scheme to prevent damage to biodiversity from biofuels. This governance process should also include consideration of the following:

Governance checks:

- proof that appropriate Strategic Environmental Assessment (SEA) and/or Environmental Impact Assessment (EIA) has been carried out (in the EU), or the equivalent overseas
- adherence to the principles of the Ecosystem Approach and Precautionary Principle
- sourcing of biofuels where national environmental legislation is robust, and where biodiversity considerations are suitably integrated into cross-sectoral planning
- biofuels not counter to EU policies and legislation, e.g. appropriate application of mechanisms such as cross-compliance and agri-environment measures (EU only)
- respect for local environmental legislation and regulations

- use of integrated spatial planning and strengthening ecological networks (e.g. coherence, connectivity and integrity of Natura 2000 network)

Site-specific checks:

- assessment of the appropriate feedstock type (crop), management practice etc. in a given location
- effective selection of crop mix
- appropriate mitigation/remediation/restoration measures where there is unavoidable damage
- sourced from extensive systems (e.g. low pesticides input)
- effective consideration of landscape
- prevention of fragmentation of habitats
- encourage/maintain carbon sequestration of the ecosystem (above- and below-ground biomass, soil carbon) through effective management
- avoid deforestation
- protection of not only biodiversity, but also the abiotic ecosystem components (nutrients, water, soil carbon etc.) which deliver biodiversity and ecosystem goods and services which are important for human well-being
- protection of seasonally important land areas for transient species, e.g. for those (at least partially) land-dependent species listed under the Convention on Migratory Species ²³
- avoidance of areas of degraded habitat of importance for habitat restoration

As noted in response to Q1.5, the Commission's 'EU Action Plan to 2010 and Beyond' includes a comprehensive plan of priority actions towards specified time-bound targets, that provide a great deal of scope for identifying key safeguards that must be fulfilled in order to prevent any deleterious impacts of biofuels on biodiversity.

2) HOW SHOULD OVERALL EFFECTS ON LAND USE BE MONITORED?

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.*

Section 2 is very unclear. There does not seem to be any clear reason to maintain a distinction between direct and indirect effects of biofuels on land use. The sustainability criteria will be equally valid for any indirect effects on land.

All land used for biofuel crops must meet the final sustainability criteria. Biofuel feedstocks should firstly be grown, as far as possible, using currently available arable or forestry land. Only if this land is inadequate in area should other land use types additionally be converted for growing biofuels, whilst ensuring the sustainability criteria are fully met. Many of the principles set out in the response to Q1.6 are equally valid here. Additionally, such decisions must be made in the context of comparative sustainability assessment, by looking at all the alternatives for producing energy from all renewables. If the EU 10% biofuels target cannot be unachieved in a sustainable way, or is inappropriately set within the full context of renewable targets, it should be revised.

The indirect effects of biomass production in the EU could be taken into account through cross-compliance schemes. Additionally, in response to the 2003 reform of the Common Agricultural Policy, the UK government launched an Agricultural Change and Environmental Observatory

²³ Convention on International Trade in Endangered Species <http://www.cms.int>

Programme²⁴ to identify environmental risks from a changing agricultural sector. The cornerstone of this programme is an observatory to monitor and analyse:

- current and future farm-level changes in patterns and practices
- the baseline assessment of environmental impacts of agriculture
- links between the changes observed in farming patterns and practices and observed environmental changes, both beneficial and detrimental
- future environmental changes on the basis of observed or intended behavioural changes by farmers or other land managers and the causal links to environmental impacts

A similar programme could be set up at EU level to monitor the indirect effects and land use changes of biomass production.

The development of second-generation feedstocks and processing technologies will also minimise any indirect land use effects because of the reduced amount of land required for these feedstocks (increased efficiency of energy production and CO₂ emissions mitigation potential) compared to first-generation feedstocks.

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

Indirect effects will probably be impossible to measure at an individual consignment level. However, it is probably unnecessary to measure them at anything other than the producer country level because it is at this level that changes in land use, including the clearance of further land for agriculture due to 'land leakage', will be decided and governed. Producer country laws and policies governing land use change should provide an indicator, backed up by measures of effectiveness and assessments of illegal activity, of whether indirect land use change is likely to be a problem at that scale. This information can then be made a part of bilateral engagement as well as easily being built into country-specific criteria.

Again, as noted earlier, there must be an ultimate saturation point to sustainable land use. If there is not enough land, and the 10% biofuels target cannot be met by fully adhering to the sustainability criteria, then other energy alternatives must fill the gap to meet greenhouse gas reduction targets. Land used for biofuels should only be the land area that can meet the sustainability criteria.

3) HOW SHOULD THE USE OF SECOND-GENERATION BIOFUELS BE ENCOURAGED?

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")?*

²⁴ Defra Observatory Programme <http://www.defra.gov.uk/farm/policy/observatory/background.htm>

- 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)?*

Second-generation biofuels should be defined by both a) and b), ensuring an all-encompassing overview of the 'well to wheel' process. An additional criterion should be an assurance that second-generation biofuels attain a certain level of greenhouse gas emission reduction, whilst fully meeting sustainability criterion 3 whereby biodiversity, landscape etc. are protected by a minimum standard. There should also be associated land area efficiency savings.

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.*

Under national biofuel obligations, the relative value of credits between first- and second-generation biofuels (and indeed within first- and second-generation biofuels) should be based on the specific greenhouse gas savings, with some level of weighting towards second-generation due to the additional sustainability benefits these feedstocks and technologies bring (e.g. efficiency of land use, better energy returns, water use efficiency, reduced soil impact/pesticide use).

Development of second-generation biofuel technologies should be supported by sufficient resources from the 7th Research Framework and other investment.

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?*

As stated in the response to Q3.2, the rewarding of biofuels should be based on the merits of attaining higher greenhouse gas emission savings and overall sustainability considerations. The overall sustainability criteria and targets outlined above should be the main mechanism to incentivise such new biofuels into the market and should be linked with appropriate funding. This would encourage second-generation biofuels, as well as retaining those first-generation biofuels with clear carbon savings and minimum environmental impacts.

A tiered incentive system may be appropriate, e.g.:

1. second-generation biofuels delivering a suite of benefits, including for greenhouse gas emissions, land use and biodiversity (best case scenario)
2. second-generation biofuels delivering greenhouse gas emission benefits only
3. first-generation biofuels delivering a suite of benefits, including for greenhouse gas emissions, land use and biodiversity
4. first-generation biofuels delivering greenhouse gas emission benefits only (worst case scenario – should not be incentivised at all)

Careful consideration as to what are the best options should be undertaken on a case-by-case basis against the sustainability criteria, notably between the middle two options given above.

In the short term, the provision of EU-assisted capital grant schemes (e.g. for smaller producers looking to develop high-quality biofuels and to support research and development into innovative approaches) would be an advantage.

4) WHAT FURTHER ACTION IS NEEDED TO MAKE IT POSSIBLE TO ACHIEVE A 10% BIOFUEL SHARE?

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?*

The level of blending of biodiesel (and bioethanol) should be constrained by the amount that can be produced and sourced within the context of full sustainability.

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

Research needs to be undertaken to assess the likely environmental impacts of a wider roll-out of bioethanol and biodiesel used in high blends. This should look to provide evidence on the added land use implications and determine if it will be possible to achieve the use (and how much) of these higher blends whilst respecting the sustainability criteria. In this context, global land use change and environmental risks increase because of the likely scenario that more biofuel imports will be required, where the ability to ensure that biofuels are produced sustainably diminishes.

QUESTION 4.3: *Should the legislation include measures to encourage the use of biomethane, methanol and DME in transport? If so, what?*

The legislation should incentivise the appropriate range of biofuels depending on their full life-cycle greenhouse gas savings and other sustainability benefits, set in the context of maximising efficiency from all renewable sources of energy.

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?

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

Any review date in the legislation should be determined with the goal of assessing the effectiveness of measures set out to meet the 10% target, taking into consideration the ability to meet this against the full suite of sustainability criteria. For example, the review should assess whether measures to ensure full policy coherence are being used to base judgements as to the sustainability merits of any biofuel consignment, or whether evolving technology is appropriately contributing to reducing transport CO₂ emissions. The appropriateness of the target should also be reviewed in the context of full sustainability and other renewable energy alternatives.

Transport biofuels policy also must be judged against the alternative uses of biomass energy in non-transport sectors, i.e. electricity generation, and heating and cooling. For example, other technologies, such as Combined Heat and Power distributed through local supply networks, are likely to be more energy-efficient and may be a more appropriate use of some energy derived from biomass. It does not matter how we achieve our climate goals, as long as they are achieved in a sustainable way.

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)?*

As a market-based mechanism, taxation has the potential to provide a flexible, effective and efficient instrument for achieving European sustainable development policy objectives, including in the biofuels sector. Currently, there are numerous market failures in energy markets, whereby prices for different energy sources do not reflect the external costs and benefits associated with their use. Tax policies can play a role in correcting these market failures in a cost-effective way by using market signals to develop incentives for more sustainable outcomes.

However, it is critical to ensure that the incentives resulting from taxation policy do indeed reflect the true environmental and social costs and benefits of alternative energy uses. In other words, taxation incentives must promote those biofuels that are most sustainable. In this regard, promotion of the development of second-generation biofuels is the most sustainable option for Europe (also see response to Q3.3). Taxation policy must therefore create strong incentives to pursue technological innovation and achieve dynamic climate change mitigation and energy use efficiency.

Furthermore, any use of taxation in the promotion of biofuels will need to be supported by a clear regulatory framework, and other appropriate policy instruments, to ensure that truly sustainable outcomes are achieved.

ANNEX 1: The Ecosystem Approach

The European Community and its Member States are parties to the Convention on Biological Diversity. They have adopted (Decision V/6) the Ecosystem Approach as the primary framework for action under the Convention. The Ecosystem Approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It is a method of working towards sustainable development where this is based on the maintenance of fully functioning ecosystems. The core concept of the approach lies in integrating and managing the range of demands we place on the environment, such that it can indefinitely support essential services and provide benefits for all without deterioration to the natural environment.

JNCC has worked with the secretariat to the Convention on developing and operationalising the Ecosystem Approach and we are happy to have further dialogue with DG TREN over what role this concept could play in the formulation of policy.

ANNEX 2: Selected targets and actions outlined in EU Biodiversity Action Plan

The following table lists a selection of objectives, targets and actions outlined in the ‘EU Action Plan to 2010 and Beyond’ that could potentially be impacted upon by the forthcoming directive on biofuels. In the interests of mainstreaming biodiversity (and wider environmental) considerations into other sectoral policies and plans, the new directive should not compromise the EU’s ability to achieve the targets contained in the Action Plan, and could usefully use some of these ideas and principles in developing appropriate sustainability criteria and traceability controls.

POLICY AREA 1: BIODIVERSITY AND THE EU	
OBJECTIVE 1: TO SAFEGUARD THE EU'S MOST IMPORTANT HABITATS AND SPECIES	
Target 1.1	Natura 2000 network established, safeguarded, designated and under effective conservation management by 2010, 2012 in marine environment.
Action 1.1.4	Strengthen effectiveness of Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) in informing decision-making (<i>inter alia</i> : take stock of effectiveness, produce guidance, tighten legal requirements as appropriate) so as to prevent, minimise and mitigate damages to Natura 2000 sites [2006 onwards].
Action 1.1.5	Ensure full and timely application of the Environmental Liability Directive (ELD) as it applies to protected species and natural habitats (as defined under the directive), including preventive measures and remedial actions, as appropriate [2006 onwards].
<i>Recommendation: The environmental directives provide an effective framework for a minimum standard of biodiversity and environmental conservation. Developing biofuels policy in concert with these directives will ensure a coherence of land-use policies for the environment.</i>	
OBJECTIVE 2: TO CONSERVE AND RESTORE BIODIVERSITY AND ECOSYSTEM SERVICES IN THE WIDER EU COUNTRYSIDE	
Target 2.1	Member States have optimised use of opportunities under agricultural, rural development and forest policy to benefit biodiversity 2007-2013.
Action 2.1.2	Apply Rural Development measures in the next programming period [2007-2013] to optimise long-term benefits for biodiversity – in particular for Natura 2000 areas and for other ‘high nature value’ farm and forest areas.
Action 2.1.3	Define criteria and identify [2006-07] high-nature-value farmland and forest areas (including the Natura 2000 network) threatened with loss of biodiversity (with particular attention to extensive farming and forest/woodland systems at risk of intensification or abandonment, or already abandoned), and design and implement measures to maintain and/or restore conservation status [2007 onwards].
<i>Recommendation: A well-designed biofuel production regime should take due regard of these goals. The target about optimisation is especially relevant, and should be seen in parallel with the issue of CO₂ replacement optimisation.</i>	
POLICY AREA 2: THE EU AND GLOBAL BIODIVERSITY	
OBJECTIVE 6: TO SUBSTANTIALLY STRENGTHEN EFFECTIVENESS OF INTERNATIONAL GOVERNANCE FOR BIODIVERSITY AND ECOSYSTEM SERVICES.	
Target 6.1	International governance for biodiversity substantially more effective in delivering positive biodiversity outcomes by 2010.

Action 6.1.2	Enhance integration of biodiversity into global processes with important impacts on biodiversity such as sustainable development and the Millennium Development Goals, trade and climate change [2006 onwards].
<i>Recommendation: An EU traceability regime that underpins a responsible EU approach to sourcing biofuel and its feedstocks from non-EU countries would become a global lead in sustainability commodity trade and support Community negotiating efforts in a range of international fora.</i>	
OBJECTIVE 7: TO SUBSTANTIALLY STRENGTHEN BIODIVERSITY IN EXTERNAL ASSISTANCE	
Target 7.1	Financial resources flowing annually to projects directly benefiting biodiversity has substantially increased in real terms (for period 2006-2010 compared with period 2000-2005; and again for period 2011-2013).
Action 7.1.2	Allocate adequate resources in Country and Regional Strategy Programmes wherever biodiversity identified as a key issue in country/regional environmental profiles [2006 onwards].
Action 7.1.3	Enhance MS funds earmarked for biodiversity (in line with European Consensus on Development Cooperation) in MS bilateral development cooperation programmes in support of implementation of the CBD, Millennium Development Goals and other programmes relevant for biodiversity in developing countries [2006 onwards].
<i>Recommendation: An EU traceability regime could be used as a way of facilitating well-informed transfer of external assistance.</i>	
OBJECTIVE 8: TO SUBSTANTIALLY REDUCE THE IMPACT OF INTERNATIONAL TRADE ON GLOBAL BIODIVERSITY AND ECOSYSTEM SERVICES.	
Target 8.1	Impact on biodiversity of EU trade significantly reduced by 2010 and again by 2013.
Action 8.1.1	Identify major impacts of trade on third countries' and EU biodiversity and adopt measures to significantly reduce (in case of negative impacts) and/or enhance (in case of positive impacts) these impacts [by 2010]. This will in particular be done in the context of the Commission's trade-related Sustainability Impact Assessment (SIA) Programme, that covers a number of sectoral studies (e.g., agriculture, forests and forest products as well as fisheries), in the context of multilateral (WTO, ongoing negotiations on the Doha Development Agenda) and/or regional/bilateral free trade agreements (e.g. EPAs with ACP countries).
Action 8.1.2	Foster links between the WTO agreements and biodiversity related international agreements, and ensure biodiversity taken into account as a Non-Trade Concern, in order to identify and put in place key measures to reduce the ecological impact of globalisation in line with the precautionary principle and with the commitment made in the context of the WTO's Doha Development Agenda to promote the objective of sustainable development (paragraph 6 of the Doha Declaration) and to enhance the mutual supportiveness of trade and environment (paragraph 31) [2006 onwards].
Action 8.1.4	Maximise the proportion of EU consumption of wood products deriving from sustainable sources [by 2010].
Action 8.1.5	In the context of action 8.1.1, identify EU non-wood imports driving deforestation in third countries (particularly in the context of trade related SIAs, notably on agricultural products) and adopt and implement measures to prevent, minimise and/or mitigate this deforestation [by 2010].

Action 8.1.6	Put in place bilateral agreements between EU and major timber exporting countries with aim to support forest law enforcement, governance and trade (FLEGT) [2006 onwards].
<i>Recommendation: If the EU ensures it maximises the sustainability of its own biofuel production and develops a system of ensuring sustainable procurement from outside the Union, then any new biofuels policy will make a significant contribution to achieving these targets.</i>	
POLICY AREA 3: BIODIVERSITY AND CLIMATE CHANGE	
OBJECTIVE 9: TO SUPPORT BIODIVERSITY ADAPTATION TO CLIMATE CHANGE.	
Target 9.3	Climate change adaptation or mitigation measures from 2006 onwards delivering biodiversity benefits, and any negative impacts on biodiversity prevented or minimised, from 2006 onwards.
Action 9.3.1	All climate change adaptation and mitigation measures assessed to prevent negative impacts or, where prevention not possible, to minimise, mitigate and/or compensate for negative impacts and, wherever possible, provide positive benefits to biodiversity [2006 onwards].
Action 9.3.2	Ensure that implementation of the EU Biomass Action Plan takes due account in assessments, where relevant, of impacts on biodiversity, in particularly on high-nature-value farmland and forests, in order to achieve ecological sustainability of biomass production [2006 onwards].
<i>Recommendation: These three targets provide DGTREN with the raison d'être for its desire to develop a sustainable biofuel policy. As they have College support they presumably give DGTREN strong actual and moral guidance.</i>	
POLICY AREA 4: THE KNOWLEDGE BASE	
OBJECTIVE 10: TO SUBSTANTIALLY STRENGTHEN THE KNOWLEDGE BASE FOR CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY, IN THE EU AND GLOBALLY.	
Target 10.1	Research findings on biodiversity and ecosystem services have substantially advanced our ability to ensure conservation and sustainable use by 2010 and again by 2013.
Action 10.1.4	Enhance research on most significant pressures on biodiversity, develop and test prevention and mitigation options [2006 onwards].
<i>Recommendation: There are gaps in our knowledge that make some decisions about biofuel sustainability difficult. A research component to any package of proposals should be targeted at filling these gaps in the light of the above targets.</i>	
SUPPORTING MEASURE 1: ENSURING ADEQUATE FINANCING FOR BIODIVERSITY.	
Target 2.1	Adequate funding provided for Natura 2000, biodiversity outside Natura 2000 in EU, biodiversity in external assistance and biodiversity research, inventory and monitoring 2007-2013.
Action 2.1.2	Strengthen understanding and communication of the values of natural capital and of ecosystem services, and the taking into account of these values in the policy framework, expand incentives for people to safeguard biodiversity [2006 onwards].
Target 2.2	New policies benefit biodiversity and ecosystem services, and their negative impact on biodiversity and ecosystem services prevented or minimised, from 2006 onwards.

Action 2.2.2	Screen all new legislative and policy proposals at EU and MS levels for potential significant impacts on biodiversity in general and on ecosystem goods and services in particular, and ensure effective treatment of biodiversity concerns in policy impact assessments, in particular to ensure the maintenance of ecosystem goods and services [2006 onwards].
<i>Recommendation: Action 2.1.2 is critical to setting any biofuels policy in context. 2.2.2 is DGTREN's justification for a sustainability assessment of its policies with reference to ecosystem services and goods.</i>	