

## 1. How should a biofuel sustainability system be designed?

The Commission intends to bring forward a proposal for a simple incentive/support system for biofuels. Its objective is to further increase the greenhouse gas benefits of EU biofuel policy and to minimise environmental risks. The system could discourage:

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

It should avoid any discrimination between domestic production and imports and should not act as a barrier to trade. Its operation should be monitored with a view to making it more sophisticated in future.

A possible way forward

One option for the initial design of the scheme (before it is reviewed and steps are taken to make it more sophisticated) would be as follows:

- a) The legislation would list the "sustainability criteria" to be fulfilled by the biofuels that are used to fulfil the biofuels target. There could be three of these criteria (see box 1).
- b) Biofuels that failed to meet one of these criteria would not count towards national biofuel targets. They would not count towards national "biofuel obligations"<sup>4</sup>. 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 (see box 2).

### BOX 1

#### POSSIBLE ENVIRONMENTAL SUSTAINABILITY CRITERIA FOR BIOFUELS

Sustainability criterion 1 – achieving a minimum level of greenhouse gas savings  
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 a given amount of greenhouse gas savings (for example 10%). The directive would define 'default values' for net greenhouse gas savings from different types of biofuel. These could, for example, be based on the ranges given in the JRC/EUCAR/Concawe "well-to-wheel" study.<sup>5</sup> They would 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 a certain date (for example, the date of the Commission proposal).<sup>6</sup> These land uses would be those that are associated with high carbon stocks (for example, wetlands). IPCC guidelines<sup>7</sup> could be used to identify them. The directive would 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 a certain date (for example, the date of the Commission proposal). These land uses would be those that are associated with exceptional biodiversity. The directive would define the land uses in question.

#### Question 1.1:

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

**Sustainability is an important aspect in transition from fossil to biofuels. However GHG reduction is only one of the reasons for this transition. The ending sources of fossil fuels and reduction of dependency of fuel deliveries by certain countries and regions are at least of the same importance. Therefore the sustainability criteria may not block or slow down the difficult transition**

process. And the sustainability criteria should be either not set, or set on a minimal level and be easily achievable and without bureaucracy in order not to frustrate initiatives. Land use (sustainability criterion 2) or biodiversity (sustainability criterion 3) are issues by itself and should not be linked to achieving the transition from fossil to biofuels. Or otherwise also applied to other agricultural production.

The GHG reduction (criterion 1) is relevant, but should be set upon simple criteria that function more as guidelines than as criteria. Background is that it is already difficult enough to replace fossil fuels by biofuels, and that all bits and pieces of transition are welcome. Over time the criteria can be more strict and a time path should be welcome.

#### 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.)

It is in the opinion of E-Energy Market likely that the administrative burden will hamper the imports of biofuels from developing countries. The European industry may see this as positive, as it will give them protection against imports from developing countries. However if the target is to stimulate the use of biofuels, this is an effect that should be avoided.

It will also difficult to check on the land use without local investigations. The use of land is a typical regional or national responsibility and the transition from fossil to biofuels should not be abused for this.

Moreover criteria for land use may lead to an impulse to corruption in (developing) countries to give declarations and certificates that would prove 'correct and or desired' land use.

This is likely to occur in view of the interests at stake.

Administrative burden and bureaucracy also increase the costs of biofuels, and make it herewith less competitive in comparison to fossil fuels.

#### 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.

The way forward would be to set simple and easy to achieve criteria as minimum level for greenhouse gas savings until 2015 when we may expect the second generation of biofuels to be widely available. This will give room to initiatives and distribution/supply chains to develop itself without hampering and cost increasing bureaucracy. All focus should be on the transition from fossil to biofuels, and as little as possible other distracting targets should be included in legislation.

Differentiation to levels of reduction of GHG is too sophisticated at this early stage of the development of the market.

If land needs to be earmarked as sustainable or biodiversity needs

to be kept, then development plans, subsidies and local/national legislation should be used.

If the criteria would be applied to land use at all, then these would have to be applied to all agricultural products, and not to biofuels only. Otherwise it would lead to undesirable side effects such as food production on land with a high biodiversity to make room for the production of biofuels.

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?

Keep it simple (KISS method) and do not make it complicated, because otherwise only little will be achieved.

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?

No method should be used, sometimes we have to accept that undesirable side effects occur. Let's keep focused on the transition from fossil to biofuels, and leave the land use issue to regional/national legislation. If we try to combine this, the legislation becomes too complicated and loses effectiveness or creates side effects that can not be foreseen such as bureaucracy and corruption.

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?

To extend the criterion to land with a high biodiversity adjacent to land where agricultural production takes place is too complex and will be difficult to control. Also, it is a local/national responsibility to protect these areas with development plans and other methods and legislation.

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?

No opinion

## 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.

Land use is a regional/national policy, and biofuels directives should not try to interfere. Yearly reporting is the most that can be done. From the reporting development plans for European countries might be adjusted, or subsidies be given to earmark land use. In other countries this is not possible and goes beyond the goal of achieving a transition from fossil to biofuels.

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, this is too complicated, will lead to undesirable side effects such as unnecessary bureaucracy and corruption in developing countries.

### 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)?

No opinion on the definition of the second generation of biofuels.

Possible way forward

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

For example,

CCUnder 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.

CCThe 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.

The costs of the second generation biofuels is expected to be lower as the feedstock used will be less costly, so there is no specific stimulation needed for the second generation biofuels. Also, if the second generation biofuels would be more expensive, then the first generation will be rightfully preferred by the market.

However, most studies show that the second generation will be lower in cost to produce, and will therefore automatically preferred by the market. So no special legislation is needed, it is just a matter of technology that needs some time to develop.

#### 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?

The GHG savings are important, but the ending fossil sources and the reduction of the dependency for energy deliveries from certain countries are at least as important. Therefore setting levels of GHG savings are too restricting.

Otherwise to achieve independency from some countries for the European energy supply, quota related to country of origin could be applied.

#### 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<sup>8</sup> (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?

B10 and diesel with higher percentages of biodiesel should be placed on the market in order to achieve the targets set. The legislation should include fiscal facilities to reduce the cost of biodiesel. The EN14214 standards should be adjusted to make a wider variety of feedstock suitable.

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.

<sup>8</sup> The term "biodiesel" in this section refers to the fuel also known as FAME

(Fatty Acid Methyl Ester).

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?

Legislation should take away all possible barriers that could hamper the use of biofuels in order to achieve the targets. All of the above mentioned options should be possible. Legislation is needed in the sense that standards for ethanol should be established with utmost priority preferably together with the USA and Brazil. The EN14214 should be replaced with a new standard together with the USA and Brazil. Herewith de facto world standards will be established and efficiencies will increase, leading to increased usage of biofuels.

Car and engine manufacturers should be forced and/or stimulated to make cars suitable for higher percentages of ethanol and biodiesel biofuels.

Question 4.3:

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

Legislation should take away all possible barriers that could hamper the use of biofuels in order to achieve the targets. Car and engine manufacturers should be forced and/or stimulated to make cars suitable for the alternative biofuels.

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.

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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?

The date will depend on how soon standardisation organisations can produce the relevant standards. Some engines are already suitable to use higher percentages, and therefore there is no need to wait too long.

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

#### 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)?<sup>9</sup>

In general we should keep focused on why we would like a transition from fossil to biofuels:

- reduction of the European dependency on certain countries and areas for the European energy supply
- ending supply of fossil fuels
- reduction of GHG worldwide

E-Energy Market sees criteria regarding GHG reduction and land use contributing to good purposes, but these should not hamper the transition towards biofuels. With the transition GHG will be reduced automatically, and the overall reduction might even be stronger if bureaucracy and complex certifications can be avoided.

The transition has been initiated by mainly the government. At some point in time, and the sooner the better, the market should be the driving force behind the transition. To reach that stadium barriers for an effective market should be removed, and both supply and demand side of the market should be actively present in the market.

The supply side including technology research, gets most attention and subsidies and production capacity is growing now. This stimulation has been and will for time being be necessary. With some exceptions, not so much stimuli have been given in Europe to the demand side of the biofuel market until now. Apart from mandatory percentages or when fiscal subsidies make biofuels cheaper, the use of biofuels seems to be disappointing low.

The reason for the lack of demand is:

- the higher cost of biofuels
- the long time it requires to change supply chains towards biofuels
- the long time it will take to have a large base of engines that can use 100 % biofuels and or higher blends with biofuels.

Stimulate the use of biofuels.

Therefore the use of biofuels should be stimulated through competitive prices in comparison to fossil fuels. Lower taxes (excise) for biofuels are crucial to reach competitiveness until fossil oil gets more expensive. This market pull will create pressure on engine manufacturers and oil companies to make the investments in engine technology and supply chains to meet the market demand.

These companies will make investments that create a return in the longer term, therefore it is necessary that the tax and excise reductions are also a long term commitment. A tax or excise reduction should therefore be based on:

- the difference between fossil oil prices and biofuel prices
- to make it affordable it should be budget neutral: the lower biofuel excise should be compensated by higher excise for fossil fuels.
- Blends should get a reduction or exemption of taxes/excises for the percentage that they contain biofuels.
- Valid for 10 years, herewith companies have more certainty to earn back investments

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Necessary condition for the increased use of biofuels.

Another way of stimulating the demand side of the market is to encourage the purchase of vehicles with engines suitable for the use of biofuels. This can be accomplished to apply reduced tax tariffs with purchase of such vehicles or engines. Because the replacement of vehicles and engines will take 10-15 years, the stimulus should start as soon as possible.

Legislation is often complicated and can blur the transparency of markets. And this transparency is often needed to attract new participants to a market. Therefore legislation should be kept simple, and this will stimulate the creation of an effective and responsive biofuel market.

E-EnergyMarket aims to make the market for biofuels transparent by matching the demand and supply side of the market at EEnergyMarket.com and herewith contributes to the transition from a fossil to a bio based energy supply. Herewith GHG will be reduced and Europe will be less dependent on a few countries for its energy.