

1 Is the objective of promoting biofuels still valid?

Question 1.1: Is the objective of promoting biofuels still valid?

The 2003 Biofuels Directive identified three policy goals, justifying the use of biofuels in the road transport sector, namely:

1. The reduction of transport GHG emissions.
2. Security of Supply and reducing the transports sector's oil dependence.
3. Support for the rural / agricultural sectors.

The oil industry acknowledges that the use of biomass in transport can play a role in reducing GHG emissions. However it must be recognised that biofuels are not a cost-effective means of GHG emission abatement in comparison to the use of biomass in other sectors (i.e. power generation). In addition biomass is a limited resource for which there are competing demands, particularly for food crops.

Accordingly, if biofuels are to be used in road transport, then the focus must be on delivering enhanced and cost effective GHG emissions reductions. The following aspects should be considered:

1. Any legislation and tax-treatment to promote the use of biofuels should encourage those bio-components that deliver an enhanced and most cost-effective GHG avoidance potential and incentivise R&D. It should also recognize legitimate concerns expressed over environmental impact and sustainability of the cultivation of biofuel crops.
2. Studies carried out jointly with the Commission demonstrate that the EU cannot produce enough biofuels to meet current indicative targets of the Biofuels Directive. Therefore the current and any further ambitions will require unrestricted access to imports.
3. EUROPIA has analysed public available data, such as the IEEP/TNO/CAIR report and the JEC WtW study, showing that vehicle efficiency improvements are more cost effective than biofuels for reducing CO₂ from transport.

With regards to the goal of Security of Supply, biofuels do not significantly improve security of road fuel supply, in fact they have their own supply risks. The following aspects should be considered:

1. Security of Supply is enhanced by maintaining fungibility. Supply disruptions are more likely where low-volume non-fungible fuels are supplied. The use of biofuels as blend components in fungible gasoline and diesel supplies minimizes this risk.
2. Commission proposals place significant emphasis on the production of ethanol as gasoline component. Promotion of bio-ethanol will only add to Europe's already large surplus in motor gasoline. The objective to improve Security of Supply with biofuels will be achieved much better by producing bio-diesel.

2 Prospects for biofuels' market share in 2010

Question 2.1: With existing policies and measures, will biofuels achieve a market share of 5.75% in the EU by the end of 2010? (Please give reasons for your answer)

It is highly unlikely that the Biofuels Directive indicative target of 5.75% (energy content) will be met across all the EU countries by the end of 2010. The reasons are as follows:

- **EU Indigenous Biomass Availability**

While some individual countries might achieve or come close to achieving the 5.75% (energy content) target, current estimates indicate that across the EU as a whole that there is not sufficient biomass availability based on current crop and conversion technologies to achieve the 2010 target. For example the JEC WtW study estimates a maximum EU combined production of conventional bio-ethanol and conventional bio-diesel of 4.2% (energy content) of EU road fuels demand by 2012.

- **Lack of regulatory harmonization between Member States.**

Commonality of biofuel implementation mechanisms and administrative requirements between Member States is desirable to encourage the most effective use of biofuels, while not degrading the highly integrated and fungible nature of the European road transport fuel market.

However, currently there are wide ranges of varying regulatory approaches in place across the EU. There are significant differences in the tax incentives that are available, and the administrative requirements underlying the incentives. In addition, some markets have or are in the process of introducing biofuel obligations – here too there is a lack of consistency of approach.

Moreover, the regulatory mechanisms in place in some countries effectively discriminate against biofuels produced in other member states and biofuel imports. Given the limitations of EU indigenous biomass availability if current EU indicative biofuels targets are to be met the imports of bio-components must be facilitated and trade restrictions removed.

- **Technical limitations with current bio-components.**

Conventional biofuels, typically biodiesel (Fatty Acid Methyl Ether - FAME) and bio-ethanol have different properties than conventional gasoline and diesel, and care is needed in their use to avoid vehicle performance or compatibility problems. Currently, both ethanol and FAME are limited to a maximum of 5% volume in conventional gasoline and diesel respectively. In terms of energy content this equates to a ~3.3% (energy content) and ~4.3% (energy content) respectively. Increasing the limits must be consistent with maintaining the compatibility with the existing vehicle park.

- **Biofuels are Costly**

According to the Commission's own assessment EU biofuels would only become cost-competitive with sustained oil prices above ca. 90 €/bbl for bio-ethanol and above ca. 60 €/bbl for biodiesel.

The costs of today's biofuels exceed significantly those of the conventional fuels they are expected to replace. As a consequence, introduction of biofuels will cause the EU energy bill as well as food prices to increase.

Question 2.2: What are the main factors favouring the development of biofuel use in the EU? What are the main obstacles?

One key advantage that biofuels have over other alternative fuels/vehicle technologies is their ability to be blended (within certain limits) into conventional fuels and hence be compatible with the existing vehicle park. This enables biofuels to achieve material penetrations in the fuel pool, avoiding the time and cost associated with the introduction / penetration of alternative vehicle technologies into the existing vehicle park, and the need for an additional supply infra-structure.

To date in the EU both biodiesel and ETBE have exploited their compatibility with the existing supply infra-structure and vehicles to achieve material penetrations in the fuel pool of some countries.

With regards to the further development of biofuels and the introduction of future biofuels delivering enhanced GHG emission benefits the ability to retain this compatibility will be key. This will enable the penetration of biofuels delivering the most enhanced and cost-effective GHG emission reductions, independent of the time taken for new vehicle types to penetrate the vehicle park, and the need to install new supply infra-structure.

The current key obstacles to biofuel use have identified in the previous section. However, with regards to the future development of biofuels there are two aspects to be considered:

1. The need for research and development into biofuels, with the ability to deliver enhanced and cost effective GHG avoidance potential, and vehicle/fuel compatibility, while enabling a higher penetration into road fuels.
2. The requirement for regulatory mechanisms to promote those biofuels that deliver an enhanced and most cost-effective GHG avoidance potential.

3 Targets and support for biofuels

Question 3.1: Looking towards 2010, is the present European system of indicative targets and support for biofuels appropriate or does it need to be changed?

Biofuels in road transport remain a costly way of reducing GHG emissions in comparison with the potential for biomass use in other sectors, but where biofuels are to be used, then the focus must be on delivering enhanced and cost effective GHG emissions reductions.

The current system of member state regulatory mechanisms set in terms of gross energy content or volume does not encourage the most GHG efficient options.

Regulatory mechanisms should be framed recognizing the different energy and greenhouse gas savings possible with different biofuels, and provisions included to encourage innovation by improving production efficiency for existing biofuels or developing new and improved pathways. Regulatory mechanisms should not act as a barrier to future biofuel developments.

Specifically at a Member State level the following aspects should be considered:

Flexible mechanisms that use market forces to encourage competition will deliver the best efficiency within each national market. Mandated recipes requiring fixed amounts of biofuel in each litre should be avoided.

Targets should be framed over total road transport fuel volumes over a defined accounting period – a so-called pooled approach. Fuels suppliers should have the maximum flexibility in terms of the type of biofuel used, the timing and distribution across a market while meeting the overall target over the accounting period. Specific biofuels targets or quotas for gasoline and diesel should be avoided.

One potential approach is the use of biofuel obligations that involve the use of a tradable biofuel certificate or credit where the use of biofuel obligations is established. In this regard the ability to accumulate and trade biofuel credits between companies is a critical element for increasing the flexibility and efficiency of biofuel use.

Question 3.2: What are your views on the advantages and disadvantages of the (10) options described in section 3.2. of the paper?

Europa believes that the following general principles must be adhered to when considering appropriate policy instruments to promote the use of biofuels in road transport fuels:

- **“Level Playing Field” /Technology Neutral Approach**

The regulatory mechanism must apply equally across a market and its market participants – a “level playing field” approach. All participants in the fuels market should be subject to the same requirements. Flexible mechanisms that use market forces to encourage competition will deliver the best efficiency.

- **Harmonisation of biofuel regulatory mechanisms**

Harmonisation of biofuel implementation mechanisms and administrative requirements between Member States is desirable to encourage the most effective use of biofuels, while maintaining the highly integrated and fungible nature of the European road transport fuel market.

- **Flexibility within each national market**

Flexible mechanisms that use market forces to encourage competition will deliver the best efficiency within each national market. Mandated recipes requiring fixed amounts of biofuel in each litre should be avoided.

Targets should be framed over total road transport fuel volumes over a defined accounting period. Fuels suppliers should have the maximum flexibility in terms of the type of biofuel used, the timing and distribution across a market while meeting the overall obligation over the accounting period. Specific biofuels targets or quotas for gasoline and diesel should be avoided.

One potential approach is the use of a tradable biofuel certificate or credit if a biofuel obligation is established. In this regard the ability to accumulate and trade biofuel credits between companies could enhance the flexibility and efficiency of biofuel use.

- **Stimulate innovation and encourage future developments**

Regulatory mechanisms should be framed recognising the different energy and greenhouse gas savings possible with different biofuels, and provisions included to encourage innovation by improving production efficiency for existing biofuels or developing new and improved pathways. Regulatory mechanisms should not act as a barrier to future biofuel developments.

- **Introduction of biofuels must not compromise fuel product quality**

Fuels need to be compatible with vehicle requirements. Conventional biofuels, typically ethanol and biodiesel have different properties than conventional gasoline and diesel, and care is needed in their use to avoid vehicle performance problems. As for conventional fuels, carefully formulated fuel specifications, set by the recognised standardisation bodies are needed to maintain fuel quality. Specifications and test methods are needed both for the biofuel component itself and for the finished fuel blend. Biofuel blends should comply with the same specifications and OEM recommendations as conventional motor fuels, to ensure that relevant emission standards are met and to avoid vehicle performance or compatibility problems. Harmonised gasoline and diesel fuel specifications must be respected, ensuring that the fungibility (exchangeability) of fuels is maintained.

- **Fungibility**

Regulatory mechanisms must respect the Europe's harmonised gasoline and diesel fuel specifications and hence ensure that the fungibility (exchangeability) of fuels is maintained, thereby minimising the exposure to supply disruptions and degradation in supply security.

- **Regulatory mechanisms must not discriminate between biofuel components and biofuel blends on the basis of their country of origin**

- **Regulatory measures should encourage biofuel pathways that deliver cost effective GHG emission benefits**

Biofuels remain a costly way of reducing GHG emissions, but where they are introduced regulatory measures should focus on encouraging options that enable enhanced and cost-effective GHG emission benefits, ensuring that any scheme to categorise the performance of biofuels is based on sound WtW principles and is both simple and transparent to manage.

Questionnaire: Review of EU biofuels directive

a) **Option A:** The biofuel directive is amended to fix targets for each MS. These targets are mandatory – that is, failure to achieve them automatically places the MS in breach of Community law.

No comment, because we believe this applies primarily to Member States

b) **Option B:** The system of fixing national indicative targets is retained. The biofuels directive amended to state explicitly that, once fixed by MS, these targets are mandatory.

No comment, because we believe this applies primarily to Member States

c) **Option C:** The system of fixing national indicative targets is retained. The biofuels directive is amended to define more precisely the circumstances under which these targets may differ from the reference value.

No comment, because we believe this applies primarily to Member States

d) **Option D:** The biofuels directive is amended to require MS to use biofuel obligations (requiring fuel suppliers to incorporate a given percentage of biofuel in the total amount of fuel they place on the market) as a tool to achieve national targets.

Option D (advantage): Flexible mechanisms that use market forces to encourage competition will deliver the best efficiency within each national market. Mandated recipes requiring fixed amounts of biofuel in each litre must be avoided.

Targets should be framed over total road transport fuel volumes over a defined accounting period. Fuels suppliers should have the maximum flexibility in terms of the type of biofuel used, the timing and distribution across a market while meeting the overall obligation over the accounting period. Specific biofuels targets or quotas for gasoline and diesel must be avoided.

One potential approach is the use of a tradable biofuel certificate or credit if a biofuel obligation is established. In this regard the ability to accumulate and trade biofuel credits between companies could enhance the flexibility and efficiency of biofuel use.

This approach has a number of advantages:

- Encourages the use of available biofuel supply in the most cost effective manner.
- Facilitates the penetration of future/advanced bio-components by removing the risk that action will be constrained to a particular fuel or bio-component.
- Enhances the market's robustness to bio-component supply disruption.

Targets must be set at a realistic level in line with biofuel availability and consistent with fuel standards.

Questionnaire: Review of EU biofuels directive

Option D (disadvantage): By their nature such schemes are complex and need careful design if they are to be successful.

Penalties for non-compliance to an obligation should be transparent, fair, and closely linked to the incremental price of the bio-component versus conventional fuel.

e) Option E: A biofuel obligation is imposed at Community level on each fuel supplier.

Option E (advantage): A biofuel obligation operating at a Community level could offer additional advantages to a MS biofuel obligation, particularly in the areas of enhanced flexibility, and a consistency of regulatory approach facilitating the development of a fully developed European biofuel market.

However such an approach would also bring with it additional areas of complexity and at this stage it is not clear whether such an approach could be achieved versus, for example, a system of obligations at a Member State level.

Option E (disadvantage):

f) Option E: The fuel quality directive is amended to permit MS to impose mandates on fuel suppliers (laying down a minimum proportion of biofuel to be contained in each litre of fuel sold). There the comment should be made that without EU harmonisation of the minimum proportion, this risks to create a serious internal market barrier.

Option F (advantage):

Option F (disadvantage): Such an approach must be avoided, as it entails a number of significant risks and disadvantages, namely:

- Significantly increases the market's exposure to biofuel supply disruptions, and hence price volatility.
- A piecemeal approach by Member States in this area would conflict with the EU harmonised product specifications and potentially significantly disrupt the current trade flows within Europe and the fungibility of the gasoline and diesel market. Such a system of "boutique fuels" would significantly increase the market's exposure to supply disruptions.
- There is a risk of strong linkage of such a mandate to specific bio-components/production routes, and hence a barrier to new biofuels developments.
- Risk of a lack of linkage between the mandated level and engine/fuel requirements.
- If the mandate is applied like a specification (i.e. at the point of sale), this would require tracking of the bio-component content to the point of sale. This would be an administratively intensive challenge. In addition there would be a requirement to harmonise the system/process across Europe.

Questionnaire: Review of EU biofuels directive

g) Option G: The fuel quality directive is amended to require all fuel sold in the EU to contain minimum proportions of biofuel (a European mandate).

Option G (advantage):

Option G (disadvantage): While a European mandate would avoid the issue, as identified above, of a conflict with EU product harmonisation and the Security of Supply implications associated with the loss of European gasoline and diesel fungibility, there still remain a number of significant risks and disadvantages, namely:

- There is currently not sufficient biofuel available on a sufficiently balanced geographic basis across the EU to support a mandate at a meaningful level.
- Technical considerations would make it very difficult for some markets to comply with such a mandate – for example FAME's cold flow properties exclude its use in Arctic Diesel.
- It would significantly increase the market's exposure to biofuel supply disruptions, and hence price volatility.
- There is a risk of strong linkage of such a mandate to specific bio-components/production routes, and hence a barrier to new biofuels developments.
- Risk of a lack of linkage between the mandated level and engine/fuel requirements.
- If the mandate applied like a specification (i.e. at the point of sale), this would require tracking of the bio-component content tracking to the point of sale. This would be an administratively intensive challenge. In addition there would be a requirement to harmonise the system/process across Europe.

h) Option H: The Commission attempts to negotiate with the oil and vehicle industries a voluntary agreement to achieve the 5.75% reference value.

Voluntary agreements are not appropriate policy mechanisms to support the introduction of biofuels for the following reasons:

- To be effective a voluntary agreement would require the effective participation of all participants in the European gasoline and diesel supply chain, since non-participants would be competitively advantaged in terms of cost of product.
- The structure of the European oil market is significantly disaggregated compared to other sectors such as the European auto-manufacturers, consisting as it does of a large number of medium or small sized fuel suppliers as well as the oil majors. Therefore, achieving full and effective participation would be difficult, leading to significant levels of non-compliance with the voluntary agreement. Given the competitive implications, this would drive other participants towards non-compliance.

i) Option I: All fuel is labelled to show the proportion of biofuel it contains. (At present, only fuel with biofuel content above 5% has to be labelled)

It should be recognised that the current objective behind road transport fuel labelling is to inform the end-customer to ensure that the vehicle is being fuelled with the appropriate fuel and so to prevent misfuelling.

Revising the labelling of EN228 gasoline and EN590 diesel to show the exact proportion of biofuel it contains, is at the current stage of the EU biofuel market impracticable to administer at the point of sale. It should be recognised that even in those markets where material volumes of biofuel are already added to gasoline and diesel this cannot be assured on a consistent batch by batch basis for a number of reasons:

1. Specification seasonality or other operational constraints.
2. Variance in bio-component supply availability.
3. The commingling of product from a number of supply sources with varying bio-component contents. This includes commingling as a result of terminal and pipeline operations.

If biofuel components are included in fuels within the limits allowed by EN228 and EN590, no further labelling is needed. To impose a labelling requirement on such fuels would be a de-facto per litre mandate, and negate the principle of flexibility. Labelling of other biofuel blends is desirable to ensure users know they are purchasing a fuel that may not be compatible with their vehicle.

j) Option J: A campaign is organised to inform consumers of the benefits of biofuels.

In addition to the comments made in previous section, Europaia would support a more broadly based information campaign that included facts for and against biofuels, together with other areas where it is possible to tackle CO₂ transport emissions, namely vehicle efficiency, driver behaviour and demand side management. Any campaign should be organised in a way that all relevant stakeholder participate in the communication.

Question 3.3: How should the option(s) you favour be put into practice?

Europaia believes that the following general principles must be adhered to when considering appropriate policy instruments to promote the use of biofuels in road transport fuels:

▪ **“Level Playing Field/Technology Neutral Approach”**

The regulatory mechanism must apply equally across a market and its market participants – a “level playing field” approach. All participants in the fuels market should be subject to the same requirements. Flexible mechanisms that use market forces to encourage competition will deliver the best efficiency.

▪ **Harmonisation of biofuel regulatory mechanisms**

Harmonisation of biofuel implementation mechanisms and administrative requirements between Member States is desirable to encourage the most effective use of biofuels, while maintaining the highly integrated and fungible nature of the European road transport fuel market.

- **Flexibility within each national market**

Flexible mechanisms that use market forces to encourage competition will deliver the best efficiency within each national market. Mandated recipes requiring fixed amounts of biofuel in each litre should be avoided.

Targets should be framed over total road transport fuel volumes over a defined accounting period. Fuels suppliers should have the maximum flexibility in terms of the type of biofuel used, the timing and distribution across a market while meeting the overall obligation over the accounting period. Specific biofuels targets or quotas for gasoline and diesel should be avoided.

One potential approach is the use of a tradable biofuel certificate or credit if a biofuel obligation is established. In this regard the ability to accumulate and trade biofuel credits between companies could enhance the flexibility and efficiency of biofuel use.

- **Stimulate innovation and encourage future developments**

Regulatory mechanisms should be framed recognising the different energy and greenhouse gas savings possible with different biofuels, and provisions included to encourage innovation by improving production efficiency for existing biofuels or developing new and improved pathways. Regulatory mechanisms should not act as a barrier to future biofuel developments.

- **Introduction of biofuels must not compromise fuel product quality**

Fuels need to be compatible with vehicle requirements. Conventional biofuels, typically ethanol and biodiesel have different properties than conventional gasoline and diesel, and care is needed in their use to avoid vehicle performance problems. As for conventional fuels, carefully formulated fuel specifications, set by the recognised standardisation bodies are needed to maintain fuel quality. Specifications and test methods are needed both for the biofuel component itself and for the finished fuel blend. Biofuel blends should comply with the same specifications and OEM recommendations as conventional motor fuels, to ensure that relevant emission standards are met and to avoid vehicle performance or compatibility problems. Harmonised gasoline and diesel fuel specifications must be respected, ensuring that the fungibility (exchangeability) of fuels is maintained.

- **Fungibility**

Regulatory mechanisms must respect the Europe's harmonised gasoline and diesel fuel specifications and hence ensure that the compatibility of fuels is maintained, thereby minimising the exposure to supply disruptions and degradation in supply security.

- **Regulatory mechanisms must not discriminate between biofuel components and biofuel blends on the basis of their country of origin**

- **Regulatory measures should encourage biofuel pathways that deliver cost effective GHG emission benefits**

Biofuels remain a costly way of reducing GHG emissions, but where they are introduced regulatory measures should focus on encouraging options that enable enhanced and cost-effective GHG emission benefits, ensuring that any scheme to categorise the performance of biofuels is based on sound WtW principles and is both simple and transparent to manage.

Questionnaire: Review of EU biofuels directive

Question 3.4: Should other options than those in section 3.2. be considered?

Confirmation should be given that biofuels added to non-road fuels qualify under the biofuels directive targets.

Question 3.5: If your preferred option(s) would have implications for granting tax reductions/exemptions for biofuels, e.g. if these fiscal measures had to be prohibited, would that change your answer?

In principle where there is a biofuel obligation there is no need for a tax incentive. However, where changes are made there should be a period of managed transition between the tax reduction/exemption and the obligation.

Irrespective of the existence of an obligation or incentive there is the need for regulatory mechanisms promoting those biofuel options delivering enhanced/cost effective GHG emission reductions.

Question 3.6: Should MS be able to provide tax reductions/exemptions and lay down biofuels obligations at the same time – or should it be “one or the other”?

In principle where there is a biofuel obligation there is no need for a tax incentive. However, where changes are made there should be a period of managed transition between the tax reduction/exemption and the obligation.

4 Certification of biofuels

Question 4.1: Should there be a system – e.g. a system of certificates – to ensure that biofuels have been made from raw materials whose cultivation meets the minimum environmental standards?
If so,

a) What should be addressed in the standards?

Biofuel certification should focus primarily on quantifying the WtW GHG emissions of bio-pathways/biofuels and hence provide a basis under which biofuels offering enhanced/cost effective GHG emission reduction can be promoted within biofuel regulatory mechanisms.

Such scheme should have the following characteristics:

- The GHG emission performance of a biofuel /biofuel pathway should be based on sound and consistent Well to Wheel principles.
- The data/basis of the WtW calculation for a biofuel/biofuel pathway should be transparent and auditable.
- Any supplier not willing or able to provide the necessary information to enable a reliable WtW assessment should be given a default ranking for the bio-component concerned.
- The GHG emission ranking should not be exclusive to indigenously produced bio-component. There must be an ability to assess and rank imported bio-components as well.
- The GHG emission performance ranking for a biofuel/biofuel pathway can then be used for example to link incentives or the award of certificates under a certificate based biofuel obligation scheme to promote biofuels offering the greatest/most cost effective GHG emission benefit.

Legitimate concerns over environmental impact and sustainability of the cultivation of biofuel crops should be recognized.

b) How should the system work? Are there good models to draw on?

The experience of the Biofuel Assurance Scheme currently being developed by the UK's Low Carbon Vehicle Partnership should be taken into account when evaluating appropriate models. Any model must be both simple and transparent to manage.

c) Should the biofuels directive be amended so that only biofuels which comply with environmental sustainability count towards its targets?

Legitimate concerns over environmental impact and sustainability of the cultivation of biofuel crops should be recognized.

Question 4.2: Should a wider system of certificates be introduced, indicating the GHG and/or security of supply impact of each type of biofuel?
If so,

a) How should this certification system work?

As stated in the response to question 4.1, biofuel certification schemes should focus primarily on quantifying the WtW GHG emissions of bio-pathways/biofuels. The Biofuel Assurance Scheme currently been developed by the UK's Low Carbon Vehicle Partnership appears to be the most advanced example of such a scheme and could be a good example to use as a model.

With regards to Security of Supply, this is a complex area and a concept that is comprised of a number of different elements (reliability, flexibility, diversification, availability, cost etc.). Therefore there is not one simple metric that can adequately quantify all these elements. The nearest metrics would be net energy content or WtW fossil fuel content – these of course are very analogous to WtW GHG emissions.

b) How should the GHG and/or SoS benefits of different biofuels measured?

The GHG emission performance of biomass and biofuels should be based on sound and consistent Well to Wheel principles (see sub-question a).

Europa does not consider that there exists a practical quantitative metric for Security of Supply. As discussed above Security of Supply is a complex area and a concept that is comprised of a number of different elements (reliability, flexibility, diversification, availability, cost etc.).

c) Should biofuels with good GHG and/or SoS performance be rewarded within biofuels support systems for biofuels? If yes, how?

If biofuels are to be used in road transport fuels, then Europa believes that it is a key necessity for biofuels to be differentiated based on their relative WtW GHG emission performance.

Within Member States biofuel regulatory mechanisms this could be done in a number of ways. For example within a biofuel obligation based around tradeable certificates, base the award of tradeable certificates on a pro-rata basis relative to the WtW GHG emission performance of the biofuel in question. In this example a base or default level of WtW GHG emission performance would have to be established as a basis.

Question 4.3: Should there be a scheme to reward 2nd generation biofuels (made with processes that can accept a wider range of biomass) within biofuel support systems?

Europa advocates the goal based approach to policy setting. So rather than defining which biofuels are or are not 2nd generation, the most appropriate way forward is to define the key environmental objective – in this case GHG emission reduction, and hence design the regulatory mechanisms to encourage those biofuel delivering enhanced and cost effective WtW GHG emission reductions.

Such an approach is line with the principles of a “level playing field” and technology neutral approaches, and will stimulate innovation and the development and introduction of biofuels delivering greater GHG emissions benefits and capable of achieving greater penetrations into the fuel pool than is the case today.

5 Beyond 2010

Question 5.1: Should the EU continue acting in favour of biofuels after 2010?

As is the case currently, the use of biomass in transport will remain costly compared to conventional fuels and the cost of GHG abatement through biofuels will remain high compared to the use of biomass in other sectors.

Therefore if the EU continues to support biofuels beyond 2010 then the focus must be on delivering enhanced and cost effective GHG emissions reductions.

Post 2010 targets must be realistic in line with biomass availabilities,(both indigenous and imported), the conversion technologies available, and must consider the issue of compatibility of the existing vehicle park.

Question 5.2: If the EU is to continue acting in favour of biofuels after 2010, should this action include or exclude the definition of a quantified target for biofuels?

Meeting the 5.75% energy content target by 2010 is unlikely for the reasons identified in the response to question 2.1. Therefore targets set beyond 2010 should consider progress to date, considering overall increase in fuel consumption and realistic biomass availabilities in the time-frame considered.

In addition road biofuels targets should be set in the context of targets for the use of biomass in the power generation and heating and cooling sectors.

Question 5.3: Should EU action include the following measures (which could be pursued without defining a quantified target):

a) Support for research, development and dissemination of good practice?

Yes – particularly for biofuels, bio pathways delivering enhanced and cost effective GHG emission avoidance.

b) Continued Community financial support for the supply of biofuels and their feedstocks?

All participants in the fuels market should be subject to the same requirements. Regulatory mechanisms should not discriminate between biofuel components and biofuel blends on the basis of their country of origin. Instead, legislative approaches should encourage biofuels that deliver the greatest GHG emission benefit.

c) Continued scope of MS to support biofuels through tax reductions/exemptions?

All participants in the fuels market should be subject to the same requirements. Regulatory mechanisms should not discriminate between biofuel components and biofuel blends on the basis of their country of origin. Instead, legislative approaches should encourage biofuels that deliver the greatest GHG emission benefit.

Questionnaire: Review of EU biofuels directive

d) The labelling of all fuel to show the proportion of biofuel it contains?

Using biofuels in the existing EN228/EN590 grades maximises ease of supply and makes biofuels available to the widest range of vehicles.

As stated in the response to question 3.2 option I, there are a number of reasons why revising the labelling of EN228 gasoline and EN590 diesel to show the exact proportion of biofuel it contains is impractical.

e) A campaign to inform consumers of the benefits of biofuels?

In addition to the comments made in previous section, Europaia would support a more broadly based information campaign that included facts for and against biofuels, together with other areas where it is possible to tackle CO₂ transport emissions, namely vehicle efficiency, driver behaviour and demand side management. Any campaign should be organised in a way that all relevant stakeholder participate in the communication.

f) Any other options?

No further options identified.

Question 5.4: If the EU is to define a quantified target for biofuels after 2010, what should it be? What year(s) should it relate to – 2015? 2020? Both?

A clear defined roadmap with quantified targets for 2015 and 2020 creates a more predictable investment environment. These should be realistic, taking into account the estimates of European biofuel availability developed by JRC Ispra as part of the JRC/EUCAR/CONCAWE well-to-wheels study

Question 5.5: If the EU is to define target for biofuels after 2010, should this be expressed in terms of

a) Market share (as in the present directive)?

Setting biofuel targets in terms of gross energy content or volume risks encouraging biofuels that deliver little or even an adverse environmental benefit. Moreover, such an approach will not act as a driver for biofuels delivering enhanced GHG emission reductions.

b) GHG savings from biofuels use?

The focus must shift to those biofuels delivering enhanced and cost effective GHG emissions reductions on a WtW basis.

Therefore regulatory mechanisms should promote the use of biofuels and those bio-components that deliver an enhanced and most cost-effective GHG avoidance potential and incentivise R&D.

c) Reduced oil consumption from biofuel use?

The precise nature of the target that is being referred to here is unclear. If it is meant that the target would be linked to crude processing/consumption at European refineries, then it must be recognised that the actual progressing level is determined by the aggregated demand from all of the products produced from crude oil, and not just those used for road transport. Therefore, restrictions in European crude processing would weaken Europe's supply balance in a number of areas, hence increasing Europe's dependence on product imports from other areas of the world – e.g. LPG, jet, diesel, heating oil. The rationale behind such a move would appear to make little sense from an economic, Security of Supply, or an environmental perspective.

If alternatively the intention is to set a target based on petroleum avoided on a WtW basis through the use of biofuels, it would fail to consider other fossil fuel inputs (e.g. natural gas and coal). Therefore it would be incomplete from both from an environmental CO₂ and Security of Supply perspective.

d) Reduced fossil fuel consumption from biofuel use?

Provided that the target is framed in terms of fossil fuel avoided on a WtW basis, this broadly correlates with WtW GHG emission avoidance as described in 5.5.b.

Question 5.6: If the EU is to define a quantified target for biofuels after 2010, should this remain a purely political step (accompanied by monitoring) or should it be given concrete form? If the latter, should this be in the form of:

a) Adding reference values for later years to the biofuels directive as presently drafted?

A clear defined roadmap with quantified targets for 2015 and 2020 creates a more predictable investment environment.

Targets should be set in the framework of what is realistically achievable in corresponding time-scale commensurate with the biomass crop and conversion technologies available and compatibility fuel standards.

b) One or more of the options in section 3.2.

As indicated in the reply to section 3.2 biofuel obligations either at a MS state level or on a Europe wide basis are potentially a useful way forward, that avoid or minimise some of the issues related to the use of fiscal incentives.

There would be an advantage in ensuring a commonality of such obligations between MS, certainly in terms of administrative requirements, as would understanding the advantages/disadvantages of a European wide approach versus MS schemes.

The practicality of such a scheme depends critically on the details of how it is implemented.

c) Some other form?

No other form identified.

6 Technical issues on which comments are also invited

Question 6.1: Do you have any comments on the following issues, listed in the biofuels directive for inclusion in the Commission's progress report:

- a) The cost-effectiveness of the measures taken by MS in order to promote the use of biofuels and other renewable fuels?

The use of biomass in today's conventional biofuels delivers a far lower level of CO₂ avoidance, and hence a more costly CO₂ abatement than the opportunities for biomass use in other sectors such as power generation.

This fact emphasises the point that if biofuels are to be used in road transport then the focus must be on those options delivering enhanced and cost effective GHG emissions reductions.

- b) The economic aspects and the environmental impact of further increasing the share of biofuels and other renewable fuels?

The majority of current generation biofuels are costly and not competitive. The impact of conventional biofuels on the environment is limited and the cost of GHG abatement through conventional biofuels is high.

An impact assessment of biomass and biofuels on the environment should be carried out.

The extensive analysis included in the JRC/EUCAR/CONCAWE well-to-wheels study should be taken as a basis for discussion. In particular, the analysis of the JRC evaluates both availability and the impact of increased biofuel use on costs, both for fuels and for food products. Further development of this work should be encouraged.

- c) The life-cycle perspective of biofuels and other renewable fuels «and» possible measures for the further promotion of those fuels that are climate and environmental friendly, and that have the potential of becoming competitive and cost/efficient?

The JRC/EUCAR/CONCAWE well-to-wheels study again provides a valuable and authoritative basis for further discussion and analysis. This work needs to continue, in particular to monitor the potential for new biofuel pathways. However, the efficiency with which existing biofuel pathways are implemented remains a key factor. Objectives and regulatory mechanisms based on real WtW GHG reductions are one mechanism to achieve this.

- d) The sustainability of crops used for the production of biofuels, particularly land use, degree of intensity of cultivation, crop rotation and use of pesticides?

The JRC/EUCAR/CONCAWE well-to-wheels study contains some information on this topic, but further study is needed to understand the impact of farm practices on the environment.

- e) The assessment of the use of biofuels and other renewable fuels with respect of their differentiating effects on climate change and their impact on CO₂ emissions reduction?

Those options that enable the greatest GHG benefit and that are the most cost-effective should be encouraged.

f) Further more long-term options concerning energy efficiency measures in transport?

Those options identified during CARS21. Heavy duty vehicle sector should be included. Alternative fuels should only be encouraged where they make significant and cost-effective contributions to GHG avoidance and/or local air benefits.

Question 6.2: What are the prospects for 2nd generation biofuels that can be made from a wider range of biomass? Can they be expected to be cost-competitive with 1st generation biofuels and if so by when?

To answer this question we refer to the JEC WtW study 2005, giving an overview of the costs and benefits of major pathways compared to conventional road fuels (section 8 of the JEC WtW study).

The key conclusion from the JEC WtW data is that in general the majority of advanced (2nd generation) biofuel options will deliver costs of CO₂ abatement at a similar level to currently available biofuel pathways. The key differentiating factor is however that the potential overall level of CO₂ tonnes avoided is much greater in the advanced (2nd generation) cases.

This implies the requirement for further research into improved biomass conversion technologies, and for regulatory mechanisms to promote those biofuel options delivering enhanced GHG emission reductions.

Question 6.3: It is sometimes suggested that vehicles can travel more kilometres on a given amount of biofuel than on an equal amount (measured by energy content) of conventional fuel. Are any data or explanations available on this point?

Existing biofuels have lower energy content than oil products. However when biofuels are blended at low levels into gasoline or diesel in accordance with the CEN specifications, these fuels can be used in conventional vehicles, and behave in exactly the same way as gasoline and diesel blended purely from hydrocarbon components and meeting the same specifications. Generally, fuel producers will take account of the bio-component properties in formulating fuel blends, so the biofuel blend will have very similar performance properties to a pure hydrocarbon.

The efficiency of an engine depends on its design and calibration. Although the presence of oxygen in the fuel can influence the combustion process to some extent, the amount and timing of energy release is not significantly changed, and so engine efficiency is not generally affected by the presence of bio-components in the fuel blend.

If bio-components are used to enhance fuel properties, for example by increasing gasoline octane, it is possible that some vehicles equipped with knock sensors can take advantage of this, perhaps giving a small improvement in fuel consumption. Biodiesel is less likely to have similar effects. Finally, in the special case where biofuels are used in high concentration in dedicated vehicles, some improvement in fuel consumption may be possible if the vehicle design and calibration is optimised by the manufacturer for this fuel.

There exist many references in the literature where improved fuel consumption for biofuel blends is claimed, but in most cases the test methodology used is not sufficiently rigorous to be convincing. Further well-controlled test programmes will be needed to completely resolve this question.

Questionnaire: Review of EU biofuels directive

Question 6.4: Problems have been reported in interpreting the directive's requirements on the calculation of the contribution of certain types of biofuel (notably ethers such as ETBE). Could the drafting of this directive be improved on this point? If so, how?

The directive gives definitions for the volume content for certain types of bio-components. Given the linkage of these definitions to Member State biofuel regulatory mechanisms Europa considers it important that the bio-contribution of all biofuels are defined in the most harmonized manner as possible.