

Review of EU biofuels directive

Public consultation exercise, April – July 2006

Energy and Transport Directorate-General, European Commission

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This document has been prepared by the Commission services as a basis for comments. It does not prejudge the final form of any decision to be taken by the Commission

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Introduction

The European Union biofuels directive¹ was adopted in May 2003. It aims to promote the use in transport of fuels made from biomass, as well as other renewable fuels.²

The directive asks the European Commission to make a progress report before the end of 2006.

The progress report could be used as the basis for a proposal to amend the directive.

The Commission set out the broad lines for this review of the directive in its biomass action plan³ and biofuels strategy.⁴ Now, in preparing the progress report, the Commission's services would like to know the views of public authorities, businesses, non-governmental organisations and other interested parties on the following questions:

1. Is the objective of promoting biofuels still valid?
2. The directive sets a reference value of 5.75% for the market share of biofuels in 2010. Will this share be achieved with existing policies and measures? If not, why not?
3. Looking towards 2010, does the EU system of targets for biofuels need to be adapted? If so, how?
4. Should a certification system be introduced to avoid using "poor performing" biofuels or give more support to "better performing" ones?
5. Looking towards 2015 and 2020, should further measures be adopted to promote biofuels?
6. A number of more technical issues

The purpose of this consultation document is to gather these views.⁵

The rest of the document explains the questions in more detail.

Responses should be sent to **TREN-BIOFUELS-DIRECTIVE-REVIEW@cec.eu.int** by **Monday 10th July 2006**. This document exists only in English, but responses can be in any Community language.

As part of the review, the Commission's services may organise consultative meetings on specific topics. No firm decision has been taken.

¹ Directive 2003/30/EC. The text of the directive can be found at http://europa.eu.int/comm/energy/res/legislation/biofuels_en.htm.

² 'Other renewable fuels' have a negligible market share. For simplicity, the rest of this document uses the term 'biofuels' alone. It should be understood as including 'other renewable fuels'.

³ COM (2005) 628

⁴ COM (2006) 34

⁵ This document has been prepared by the Commission services as a basis for comments. It does not prejudge the final form of any decision to be taken by the Commission.

The questions cover a wide range of topics. Some are primarily political, others focus on scientific, legal or economic aspects. If you have views on some questions and not others, do not hesitate to send an answer covering only these questions.

Contributions will be published, on
http://europa.eu.int/comm/energy/res/legislation/biofuels_en.htm.

For data protection reasons, the Commission will not process any specified personal data that you include with your reply.

1. Is the objective of promoting biofuels still valid?

The directive “aims at promoting the use of biofuels ... with a view to contributing to objectives such as meeting climate change commitments, environmentally friendly security of supply and promoting renewable energy sources”.

Biofuels also hold out the prospect of new economic opportunities for people in rural areas in Europe and developing countries. One of the Commission’s priorities is to explore and encourage new market outlets for agricultural products.

Some commentators argue that developments since the directive was adopted in 2003 have reinforced the case for biofuels. The importance of security of supply has been underlined as the cost of conventional transport fuels has more than doubled. The challenge of climate change has not become less urgent. The agricultural sector is facing increasing competition, and it has a key role in providing feedstocks for biofuels.

By contrast, others argue that:

- biofuels’ advantages in terms of greenhouse gas emissions and security of energy supply can be obtained at lower cost through other policies - for example, energy efficiency or the use of renewable energy (including biomass) in heating and electricity;
- the benefits of biofuels for rural areas have been exaggerated or are offset by negative impacts on consumers and the wider economy.

Question 1.1:

Is the objective of promoting biofuels still valid?

2. Prospects for biofuels’ market share in 2010

The directive⁶ sets the reference value for the share of biofuels at the end of 2010 of 5.75% of the petrol and diesel market. This is to be measured in terms of energy content.

⁶ Article 3.1 b)

The annex gives data on the national indicative targets that Member States have adopted and the market shares achieved by biofuels in the years up to 2004.

Data for 2005 are not yet available. First indications are that some Member States consumed more than their national indicative target, while others consumed less. The 2005 figure for the share of biofuels in the EU could be between 1.2% and 1.4%. It will certainly be less than the 2% reference value.

Question 2.1:

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

Question 2.2:

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

3. Targets and support for biofuels

3.1. The present system of targets and support for biofuels

The biofuels directive establishes “reference values” – market shares of 2% by the end of 2005 and 5.75% by the end of 2010.⁷

Member States are required to set “national indicative targets” for the share of biofuels. These had to be set in 2004 (for 2005) and will have to be set in 2007 at the latest (for 2010).⁸

If Member States choose to set a target that does not correspond to the reference value, this difference must be “motivated”.⁹ The Commission has launched infringement proceedings in cases where it considers that Member States did not adequately motivate a decision to set a low target.

Even with today’s high oil prices, biofuels cost more than conventional fuels. National indicative targets can only be achieved if biofuels benefit from some kind of public intervention or “support system”.

⁷ Article 3.1 b)

⁸ Articles 3.1 a) and 4.1

⁹ Article 4.1. The directive gives examples of “elements” on which Member States can base this motivation:

- “a) objective factors such as the limited national potential for production of biofuels from biomass;
- b) the amount of resources allocated to the production of biomass for energy uses other than transport and the specific technical or climatic characteristics of the national market for transport fuels;
- c) national policies allocating comparable resources to the production of other transport fuels based on renewable energy sources and consistent with the objectives of this Directive”.

Some support is available to encourage the **supply** of biofuels and their feedstocks. This includes aids for the cultivation of raw materials (under the Common Agricultural Policy's energy crops credit) and for the capital cost of biofuel processing (which may include a contribution from the European Regional Development Fund or the EU Rural Development Policy).

Support systems designed to encourage **demand** for biofuels play a larger role. The main approaches are:

- **Tax reductions/exemptions** for biofuels;¹⁰
- **"Biofuel obligations"** under which fuel suppliers are required to achieve a given proportion of biofuel within the total amount of fuel they place on a given market.

Most Member States are using one or another of these approaches. Some are using both together.

A third approach would be to require each litre of petrol or diesel sold to contain a given proportion of biofuel. This "**mandate**" system has been used in Brazil and elsewhere. In Europe, however, it would contravene the EU fuel quality directive¹¹ as presently drafted. In addition, without EU wide harmonisation of the minimum proportion per litre, such an obligation would constitute a serious internal market barrier.

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?

3.2. Options for adapting the system of targets and support for the period up to 2010

Under the biofuels directive¹², the Commission is encouraged to propose measures to adapt the system of targets if:

- i) the reference value of 5.75% in 2010 is not likely to be achieved; and
- ii) this is "for reasons that are unjustified and/or do not relate to new scientific evidence".

If these conditions do not hold, the possibility of the Commission proposing measures to adapt the system is left open by the directive.

At this stage, the Commission has not decided whether it will be necessary to propose changing the European system of targets and support.

If it is to be changed, this could be done in different ways. Ten options are set out below:

¹⁰ These are given in accordance with article 16 of the energy taxation directive (directive 2003/96). They are subject to state aid approval from the Commission.

¹¹ Directive 98/70 as amended by directive 2003/17.

¹² Article 4.2

Option A: The biofuels directive is amended to fix targets for each Member State. These targets are mandatory – that is, failure to achieve them automatically places the Member State in breach of Community law.

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

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.

Option D: The biofuels directive is amended to require Member States 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 E: A biofuel obligation is imposed at Community level on each fuel supplier.

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

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

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

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

Some of these measures are mutually exclusive – for example options *A*, *B* and *C*. Others can co-exist – for example, option *D* is compatible with all those three options.¹³

Question 3.2

What are your views on the advantages and disadvantages of the options described in section 3.2 of this paper?

Question 3.3

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

¹³ Note: As well as the options listed here, the Commission is presently examining the scope for the use of alternative fuels, including biofuels, to count towards CO₂ targets for light duty vehicles as part of its review of how to move towards the Community objective of average emissions of 120 g/km. The future strategy, to be proposed in 2006, will be based on an “integrated approach”. This means that measures such as the use of biofuels, fiscal incentives, consumer information and congestion avoidance will be considered in addition to car manufacturers’ efforts on vehicle technology. The implications of this review for biofuels policy are not the subject of the present consultation document.

Question 3.4

Should other options than those in section 3.2 be considered?

Under Community law, some of the options in section 3.2 might mean that Member States lose the possibility to grant fiscal incentives for biofuels. The answer will depend on careful legal analysis of the option(s) chosen.¹⁴

Question 3.5

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

Question 3.6

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

4. Certification of biofuels

Apart from the potential benefits for rural areas, the EU is supporting biofuels for two main reasons: to reduce greenhouse gas emissions in transport and to improve the security of energy supply.

At present, nearly all biofuel consumed in the European Union is produced from crops grown on land that has previously been in agricultural use, or else from waste materials. The EU has adopted measures aimed at ensuring the environmental sustainability of agricultural production, including “cross-compliance” (which links the direct payments that farmers receive under the common agricultural policy to their respect for environmental requirements) and an obligation to maintain the proportion of land that is under permanent pasture.

In the future, there could be a risk of increasing demand for biofuel leading to uncultivated land being brought into cultivation, in Europe or, in particular, in third countries. This could include land with a high environmental value and high level of stored carbon. Under some circumstances, cultivation could reduce the environmental value and release CO₂ into the atmosphere. It would make sense to avoid circumstances under which the possible negative effects exceed the greenhouse gas benefits of biofuels..

¹⁴ Tax reductions/exemptions for biofuels must comply with the energy taxation directive. At present they are granted by Member States on the basis of the directive’s article 16. Article 16.6 however lays down that under certain circumstances, these provisions would no longer apply. Some of the options in section 3.3 of this paper might trigger the prohibition in article 16.6. The directive might however contain other options for favouring biofuels, including authorisation through the unanimous decision of the Council.

Tax reductions/exemptions for biofuels must also comply with state aid law. Under the rules for state aid for environmental protection, aid cannot normally be authorised merely for compliance with mandatory Community standards. Some of the options in section 3.3 of this paper might lead tax reductions/exemptions for biofuels to be caught by this prohibition.

There may be other cases under which practices linked to the cultivation of biofuel raw materials could jeopardise the biofuel's environmental advantages.

More generally, it is relevant to note that some biofuels deliver more greenhouse gas benefits than others, and some deliver more security of supply benefits than others. This points in favour of designing support systems to give incentives to those that bring the higher benefits.

There are uncertainties connected with the estimation and measurement of the greenhouse gas benefits of biofuels, however; and there is no commonly used tool to measure security of supply. This could make it difficult to devise an incentive system that is both effective and simple.

Question 4.1

Should there be a system – for example, a system of certificates - to ensure that biofuels have been made from raw materials whose cultivation meets minimum environmental standards?

If so,

- **What should be addressed in the standards?**
- **How should the system work? Are there good models to draw on?**
- **Should the biofuels directive be amended so that only biofuels which comply with environmental sustainability standards count towards its targets?**

Question 4.2

Should a wider system of certificates be introduced, indicating the greenhouse gas and/or security of supply impact of each type of biofuel?

If so,

- **How should this certification system work?**
- **How should the greenhouse gas and/or security of supply benefits of different biofuels be measured?¹⁵**
- **Should biofuels with good greenhouse gas and/or security of supply performance be rewarded within biofuel support systems for biofuels? If yes, how?**

Question 4.3

¹⁵ Note: there is a debate about how to calculate the greenhouse gas impact of biofuels from a given set of data – for example, on how emissions should be assigned between biofuels and by-products such as animal feed. That is not the subject of question 4.2 (though it could be addressed under question 6.1 b). Question 4.2 is about the data themselves, and how they can be found out.

Should there be a scheme to reward second-generation biofuels (made with processes that can accept a wider range of biomass)¹⁶ within biofuel support systems?

5. Beyond 2010

The system of targets in the biofuels directive extends up to 2010. The European Council of 23-24 March 2006 asked the Commission to analyse a biofuels target of 8% for 2015.

Question 5.1

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

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?

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?
- b) continued Community financial support for the supply of biofuels and their feedstocks?
- c) continued scope for Member States to support biofuels through tax reductions/exemptions?
- d) the labelling of all fuel to show the proportion of biofuel it contains?
- e) a campaign to inform consumers of the benefits of biofuels?
- f) any other options?

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?

Question 5.5

If the EU is to define a quantified target for biofuels after 2010, should this be expressed in terms of

¹⁶ Present-day processes can only work with agricultural crops and a few types of waste. 2nd-generation processes will be able to use wood and more types of organic waste.

- market share (as in the present directive)?
- greenhouse gas savings from biofuel use?
- reduced oil consumption from biofuel use?
- reduced fossil fuel consumption from biofuel use?

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?
- b) one or more of the options in section 3.2?
- c) some other form?

6. Technical issues on which comments are also invited

In addition, there are other issues which could be considered and on which comments are welcomed.

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 Member States in order to promote the use of biofuels and other renewable fuels?
- b) the economic aspects and the environmental impact of further increasing the share of biofuels and other renewable fuels?
- 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 environmentally friendly, and that have the potential of becoming competitive and cost-efficient?
- 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?

- e) the assessment of the use of biofuels and other renewable fuels with respect to their differentiating effects on climate change and their impact on CO₂ emissions reduction?
- f) further more long-term options concerning energy efficiency measures in transport?

Question 6.2

What are the prospects for second-generation biofuels that can be made from a wider range of biomass? Can they be expected to be cost-competitive with first-generation biofuels and if so by when?

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?

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?

ANNEX – biofuel consumption and national targets

The following table has been compiled from data supplied by Member States in national reports under the biofuels directive and in direct communication with the Commission. The national reports are available at

http://europa.eu.int/comm/energy/res/legislation/biofuels_en.htm.

Where necessary, data were converted into tonnes of oil equivalent (toe) using the following conversion factors:

1 t diesel =	1,01	toe
1 m ³ diesel =	0,98	toe
1 t petrol =	1,05	toe
1 m ³ petrol =	0,86	toe
1 t biodiesel =	0,86	toe
1 m ³ biodiesel =	0,78	toe
1 t bioethanol =	0,64	toe
1 m ³ bioethanol =	0,51	toe

If the table contains errors, corrections are welcome.

	<i>Consumption (%, energy content)</i>		<i>Targets (%, energy content)</i>					
	2003	2004	2005 (ref. value: 2%)	2006	2007	2008	2009	2010 (ref. value: 5,75%)
Austria	0,06	0,06	2,5	2,5	4,3	5,75	5,75	5,75
Belgium	0	0	2	2,75	3,5	4,25	5	5,75
Cyprus	0	0	1					
Czech Republic	1,09	1		3,7 or 1,52	4,67			5,55
Denmark	0	0	0	0,1				
Estonia	0	0	2	2				
Finland	0,11	0,11	0,1					
France	0,67	0,67	2	2	3	4	5	5,75 ¹⁷
Germany	1,21	1,72	2					5,75
Greece	0	n.a.	0,7	2,5	3	4	5	5,75
Hungary	0	0	0,6					4
Ireland	0	0	0,06	1,14	1,75	2,24		
Italy	0,5	n.a.	1					2,5
Latvia	0,21	0,07	2	2,75	3,5	4,25	5	5,75
Lithuania	0	0,02	2					5,75
Luxembourg	0	n.a.	0	2,75				5,75
Malta	0,02	0,10	0,3					
Netherlands	0,03	n.a.	0	2	2			5,75
Poland	0,49	0,3	0,5	1,5				5,75
Portugal	0	0	2					
Slovakia	0,14	0,15	2	2,5	3,2	4	4,9	5,75
Slovenia	0	0,06	0,65	1,2	2	3	4	5
Spain	0,35 ¹⁸	0,38	2					
Sweden	1,32	2,28	3					5,75
UK ¹⁹	0,03	0,04	0,2			1,7	2,6	3,5
EU25	0,5	0,6²⁰	1,4					

National indicative targets: Member States were required to set 2005 targets in 2004 and are required to set 2010 targets in 2007. There is no requirement to set for intermediate targets.

¹⁷ French government information sources report the following biofuels targets: 5,75% in 2008, 7% in 2010 and 10% in 2015. It appears that these revised targets were adopted too late to be included in France's most recent report to the Commission..

¹⁸ Revised from the figure in the biomass action plan, taking into account new information from the Spanish authorities.

¹⁹ UK figures for 2005 onwards assume 50-50 split between ethanol and biodiesel.

²⁰ Assuming that consumption in Greece, Italy, Luxembourg and Netherlands was the same in 2004 and 2003.