MEMO/06/65

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Biofuels Strategy: Background memo

Key facts and figures

Biofuel production

- Biofuels are transport fuels produced from biomass feed-stocks (i.e. organic material).
- The EU's production of biofuels amounted to 2.4 million tonnes in 2004, approximately 0.8% of EU petrol and diesel consumption. Bioethanol totalled 0.5 million tonnes and biodiesel 1.9 million tonnes.
- Brazil is the world's leading producer of bioethanol, followed by the United States. The European Union, with a production of almost 0.5 million tonnes, is estimated to have produced 10% of the world's bioethanol.

EU Trade

- Since the EU is by far the world's biggest producer of biodiesel, there is no significant external trade.
- External trade of bioethanol falls mainly under codes 22 07 (denatured and undenatured alcohol). Imports under this code enjoy preferential treatment; they totalled more than 2.5 mio hl (average 2002-2004). Increasing quantities of bioethanol are imported under code 38 24 (bioethanol blended with petrol).

Current legislation

- The "Biofuels Directive": sets "reference values" of a 2% market share for biofuels in 2005 and a 5.75% share in 2010.
- The Energy Taxation Directive: makes it possible for Member States to grant tax reductions/exemptions in favour of biofuels, under certain conditions.

EU Agricultural production for biofuels

- EU production of bioethanol used in 2004 around 1.2 million tonnes of cereals and 1 million tonnes of sugar beet. This represents, respectively 0.4% of the total EU25 cereals and 0.8% of the EU25 of sugar beet production.
- EU Biodiesel production from rapeseed is estimated to have used 4.1 mio t in 2004, slightly more than 20% of the EU25 total oilseed production.
- About 0.9 million hectares of the set-aside area have been used in recent years for non-food production, of which 0.85 mio ha is used for growing oilseeds for biodiesel. The biggest producers of oilseeds on set-aside land are France and Germany, followed by the United Kingdom and Spain.
- In 2004 the total area used for biofuel crop production was around 1.4 mio ha (0.6 mio ha on set-aside, 0.3 mio ha with energy crop premium, 0.5 mio ha without any specific support regime). For 2005, an increase to 1.8 mio ha can be expected (0.9 mio ha on set-aside, 0.5 mio ha with energy crop premium, 0.4 mio ha outside these specific regimes).

Biofuel Production

Bio-energy is the energy derived from biomass, including biofuels. The organic biomass material used can be wood, agricultural crops, forestry residues, agricultural residues or organic waste.

Biomass includes non food-products for various purposes. It has an important role to play as feedstock material for **renewable energy** generation whether for electricity, heating and cooling or for transport fuels, but also as raw material for other uses.

Biofuels are transport fuels produced from biomass feed-stocks (i.e. organic material). The term commonly applies to liquid transport fuels, but also includes gas and solid fuels such as wood pellets and chips; the combustion of not only straw, but also the grain (i.e. the entire plant) has also been discussed. The term commonly applies to liquid transport fuels. At present, three biofuels account for almost all consumption in the transport sector world-wide: ethanol and ETBE (ethyl tertiary butyl ether composed of ethanol and fossil fuels), biodiesel, and biogas.

Today, bioethanol is the world's main biofuel. Biodiesel, which until recently was produced almost solely in the EU, is now gaining a foothold in many regions across the world. Biogas comes third and has so far made a breakthrough only in Sweden.

According to EurObservER[1], the EU's production of biofuels amounted to 2.4 million tonnes in 2004, approximately 0.8% of EU petrol and diesel consumption. Bioethanol production was reported at 0.5 million tonnes and biodiesel at 1.9 million tonnes. This is an increase of more than 25% compared with the previous year and production capacities are increasing rapidly.

EU Production of liquid biofuels

	Bioethanol			Biodiesel		
	2002	**2003**	**2004**	**2002**	**2003**	**2004**
	1000 t			1000 t		
Czech Rep.	5			69	70	60
Denmark				10	41	70
Germany			20	450	715	1035
Spain	177	160	194		6	13
France	91	82	102	366	357	348
Italy				210	273	320
Lithuania						5
Austria				25	32	57
Poland	66	60	36			
Slovak Rep.						15
Sweden	50	52	52	1	1	1
UK				3	9	9
from interv. stocks		70	87			
EU25	**388**	**425**	**491**	**1134**	**1504**	**1933**

Source: EurObservER 2005

[1] EurObserv'ER, Observatoire des énergies renouvelables, " Le baromètre des biocarburants", n° 167 (Mai-juin 2005).

Bioethanol

World ethanol production (fuel and other uses)

Ethanol production	2005 bio litres*	2004 bio litres
Brazil	16.7	14.6
United States	16.6	14.3
European Union	3.0	2.6
Asia	6.6	6.4
China	3.8	3.7
India	1.7	1.7
Africa	0.6	0.6
World	**46.0**	**41.3**

* F.O. Licht's estimate

Current Legislation

In 2001, the Commission adopted a communication accompanied by legislative proposals on alternative fuels for road transport, identifying three main fuels (biofuels, natural gas and hydrogen) with a potential for development.[2] The legal proposals were adopted, in amended form, in 2003.

Biofuels Directive[3]: sets "reference values" of a 2% market share for biofuels in 2005 and a 5.75% share in 2010. A review of the Directive will be carried out this year. Among other questions, it will assess whether the 2010 target will be met, and consider whether targets should be made mandatory.

Energy Taxation Directive[4]: makes it possible for Member States to grant tax reductions/exemptions in favour of biofuels, under certain conditions. These tax concessions are considered as state aids, which may not be implemented without prior authorisation by the Commission. The Commission's assessment has the aim of avoiding undue distortions of competition and is based on the Community guidelines on state aid for environmental protection[5] .

Fuel Quality Directive[6]: establishes specifications for petrol and diesel, for environmental and health reasons, e.g. limits on the content of ethanol, ether and other oxygenates in petrol. It also limits the vapour pressure of petrol. Standard EN590 sets further limits for technical reasons, and states that diesel must contain no more than 5% biodiesel by volume (4.6% in energy terms). These limits put constraints on the increased use of biofuels. In 2006 the Commission will therefore propose a revision of the Fuel Quality Directive to remove the quantitative limits on ethanol.

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[2] COM (2001) 547.

[3] Directive 2003/30/EC of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport, O.J. L123, 17/05/2003.

[4] Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity, O.J. L283, 31/10/2003.

[5] OJ C37 of 3.2.2001, p.3, in particular section E.3.3.

[6] Directive 98/70/EC of 13 October 1998 relating to the quality of petrol and diesel fuels (O.J. L350, 28/12/1998), as amended by Directive 2003/17/EC of 3 March 2003 (O.J. L76, 22/03/2003).

Aid for energy crops (2004 area paid, 2005: areas claimed)

Country	Area (hectares)	
	2004	2005
Belgique/België	12.90	2,434.78
Česká Republika*		
Danmark	4,450.36	17,763.44
Deutschland	109,100.36	244,206.86
Eesti*		
Ellas	0.00	0.00
España	6,704.98	27,321.38
France	130,034.00	123,825.70
Ireland	379.45	1,613.08
Italia	0.00	318.13
Kypros*		
Latvija*		
Lietuva*		
Luxembourg	107.72	221.01
Magyarország*		
Malta	0.00	0.00
Nederland	138.58	352.27
Österreich	3,497.97	8,370.88
Polska*		
Portugal	0.00	77.45
Slovenija	291.76	304.10
Slovakia*		
Suomi/ Finland	3,475.34	9,765.88
Sverige	14,547.26	31,450.00
United Kingdom	32,927.84	99,351.00
Total	***305,668.52***	***567,375.96***

* No communications required from:
CZ, EE, CZ, LV, LT, HU, PL, SK (applying SAPS)

Policy Instruments concerning Biofuels

The ongoing process of **CAP reform** started in 1992 has reduced price support and helped to increase the competitiveness of EU agricultural production for all possible outlets: food, animal feed, and non-food use including biofuels. This is particularly important for cereals, which are currently one of the major feedstocks for EU bioethanol production.

The **decoupling** of income support from production introduced in 2003 will help to facilitate the supply of energy crops. In particular, crops that were eligible for direct payments only under the non-food regime on set-aside areas, may now be cultivated on any area without loss of income support.

The **set-aside** obligation, which was introduced with the 1992 reform as a tool to balance the cereals market, has been integrated into the new single payment scheme. The cultivation of non-food crops (including energy crops) is authorised if the use of the biomass is guaranteed either by a contract or by the farmer.

A special **aid for energy crops** was introduced by the 2003 CAP reform. A premium of €45 per ha is available, with a maximum guaranteed area of 1.5 million hectares as the budgetary ceiling.

Political agreement has recently been reached on a major reform of the Common Market Organisation for **sugar**. Sugar beet grown for bioethanol will continue to be exempt from quotas. The Commission will pursue its proposition to make sugar beet grown for bioethanol eligible for both the non-food regime on set-aside land and the energy crop premium.

In 2006, for the first time, a tender for rye from intervention stocks will be opened specifically for bioethanol production. Additonal processing of cereals into biofuels would certainly contribute to reducing the amount of cereals exported with refunds.

Under **Rural development policy**, investments on or near farms, for example in biomass processing, as well as the mobilisation of unused biomass by forest holders, can also be supported. The Commission has proposed Community strategic guidelines for rural development which emphasise renewable energy, including biofuels. It is also proposing a specific ad hoc group to consider biomass and biofuel opportunities within national rural development programmes.

Like fuel tax exemptions, other forms of official support for biofuel production and use must obviously conform to provisions on state aid.

Many of the regions covered by the European Regional Development Fund, particularly in rural regions in central and Eastern Europe, have the potential to use biomass to generate economic growth and employment. Support for biomass, including biofuels, is a priority for **Cohesion policy**[7] and can be given, for example, for the retraining of farmers, the provision of equipment for biomass producers and for investment in facilities to produce biofuels.

http://europa.eu.int/comm/agriculture/biomass/biofuel/index_en.htm

[7] as set out in the Commission's communication "Cohesion policy in support of growth and jobs", COM (2005) 299.