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Bio-Fuels

Annual

2008

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Report Highlights:
Good profits in 2005 and 2006 encouraged rapid expansion of biodiesel and bioethanol production capacity in the EU-27. Domestic biodiesel and bioethanol production amounted to about 5.4 MMT for biodiesel and 1.4 MMT for bioethanol in 2007. It is expected to further increase in 2008 to 5.7 MMT and 1.7 MMT, respectively. Overcapacity, high feedstock costs, and competitively priced imports have considerably reduced profit margins. As a result, it is expected that the sector will need to consolidate.

Current EU discussions on future biofuel use targets could substantially increase EU-27 vegetable oil demand in coming years. However, discussions on feedstock sustainability criteria could result in sizeable market access issues for U.S. oilseeds and biodiesel.

Includes PSD Changes: No
Includes Trade Matrix: No
Annual Report
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Introduction

Disclaimer: This report presents the situation and outlook for biofuels in the EU-27. This report presents the views of the authors and does not reflect the official views of the U.S. Department of Agriculture (USDA). The data are not official USDA data. Official host government statistics on biofuels are not available in many instances. This report is based on analytical assessments not official data.

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Abbreviations and definitions used in this report

Benelux	= Belgium, the Netherlands and Luxembourg
Biodiesel	= Fatty acid methyl ester produced from agricultural feedstock (vegetable oils, animal fat, recycled cooking oils) used as transport fuel to substitute petroleum diesel
Bioethanol	= Ethanol produced from agricultural feedstock used as transport fuel
BtL	= Biomass to liquid
Bxxx	= Blend of mineral diesel and biodiesel with the number indicating the percentage of biodiesel in the blend, e.g. B100 equals 100 % biodiesel, while B5 equals 5 % biodiesel and 95 % conventional diesel
CEN	= European Committee for Standardization (Comité Européen de Normalisation)

EBB = European Biodiesel Board
GJ = Gigajoule = 1,000,000,000 Joule or 1 billion KJ
Ha = Hectares, 1 hectare = 2.471 acres
HS = Harmonized System of tariff codes
KTOE = 1000 MT of oil equivalent = 41,868 GJ = 11.63 GWh
MJ = Megajoule
MMT = Million metric tons
MS = Member State(s) of the EU
MT = Metric ton (1000 kg)
MTOE = Million tons of oil equivalent
MY = Marketing Year
NMS = New Member State(s) = Countries that acceded the EU in or after 2004
PVO = Pure vegetable oil used as transport fuel
RME = Rapeseed Methyl Ester
Toe = Tons of oil equivalent = 41,868 MJ = 11.63 MWh
TWh = Tera Watt hours = 1 million KWh
USD = U.S. Dollar

Energy content and Conversion rates[1]:

Gasoline =	43.10	MJ/kg = 43.1 GJ/MT		
Ethanol =	26.90	MJ/kg		
Diesel =	42.80	MJ/kg		
Biodiesel =	37.50	MJ/kg		
Pure vegetable oil =	34.60	MJ/kg		
BtL =	33.50	MJ/kg		
1 toe =	41.87	GJ		
1 MT Gasoline =	1342	Liters	=	1.03 toe
1 MT Ethanol =	1267	Liters	=	0.64 toe
1 MT Diesel =	1195	Liters	=	1.02 toe
1 MT Biodiesel =	1136	Liters	=	0.90 toe
1 MT Pure veg Oil =	1087	Liters	=	0.83 toe
1 MT BtL =	1316	Liters	=	0.80 toe

[1] Based on information from:
- Massachusetts Institute of Technology (MIT)
http://web.mit.edu/mit_energy/resources/factsheets/UnitsAndConversions.pdf ,
- German Federal Agency for Renewable Resources (FNR)

General Overview

Biological products and agro-silvicultural commodities form the feedstocks for biofuels. In recent years biofuels have shown a dynamic development in the EU and thus exerted a considerable influence on agricultural commodity markets.

Biofuels in transport

The EU has been and continues to be a leader on biofuels. However, based on their production costs biofuels are currently not competitive with diesel or gasoline in the EU. Even the recent increases in the crude oil price did not change this as increased demand for vegetable oil drove up biofuel feedstock prices at the same time. Consequently, the EU biofuels market largely depends on mandates and incentives. The main emphasis of these measures is clearly on the consumption side of the balance. Direct production incentives do exist on the Member State (MS) level but are in the minority. In directive 2003/30 the EU set indicative[2] non-binding goals for biofuel consumption in the EU. It is left to the MS' discretion which measures they take to achieve the goals. As a result, MS have introduced or are in the process of introducing various support measures including tax incentives, mandates, and penalties. These measures vary considerable from MS to MS and are summarized in the annexes.

While biofuels as a share of all transport fuels is trending upwards, based on current conditions FAS EU posts do not expect the EU as a whole to achieve its targets by 2010.

Estimated EU-27 Biofuel and Conventional Fuel Consumption (in ktoe)

	2006 r	2007 e	2008 e	2009 f	2010 f
Biodiesel	4,170	5,460	6,000	7,610	8,960
Pure Vegetable Oil	915	620	415	190	200
Bioethanol	945	1,350	1,700	2,055	2,570
BtL	0	0	5	10	10
Total biofuels	**6,030**	**7,430**	**8,120**	**9,865**	**11,740**
Diesel & replacements (incl. biofuels)	180,570	184,360	188,230	192,190	196,220
Gasoline & replacements (incl. biofuels)	112,515	113,530	114,550	115,580	116,620
Total Fuel	293,085	297,890	302,780	307,770	312,840
Biofuels as a share of total transport fuel used	**2.06%**	**2.49%**	**2.68%**	**3.21%**	**3.75%**
Current non-binding EU goal[3]	2.75%	3.50%	4.25%	5.00%	5.75%

Source: EU FAS posts

Note: Since the various fuels and biofuel differ in their energy content, the data in the table is stated in ktoe rather than volume in order to provide a better comparability. Data for volume is given in the sections later in the report.

Biodiesel is the main biofuel for transport used in the EU and is estimated to account for 75 % of this market in 2008. Bioethanol is the runner-up with a 20 % market share. Pure vegetable oil accounts for the remainder. However, while the use of biodiesel and bioethanol is expected to further increase in the future, pure vegetable oil is expected to decline and form a niche market. Many expectations rest on Biomass-to-liquid (BtL). However, this second generation biofuel is still in its infancy and will take some years before it reaches a

[2] Indicative means that MS are not obliged to fulfill the targets, but they have to justify themselves if they do not.
[3] As set in EU directive 2003/30.

significant volume. For details on the individual biofuels in the transport sector please refer to the chapters below.

Biofuels for electricity

In 2005, 14 % of gross electricity consumption in the EU-27[4] was produced from renewable resources (water, wind, biomass, geothermal, and solar energy) translating into 463 TWh[5]. Biomass accounted for 15.8 %[6] of the renewable resources share or 2 % of total gross electricity consumption, and amounted to about 73 TWh.

Biomass for Heat

Heat generation is the most important market for biomass in the EU. About 66% of the biomass was used for heat, 31% for electricity and cogeneration and 3% for liquid fuels.

Policy

General

The European Commission (EC) had set the goal that by the end of 2005, 2 % of the energy used in transportation should be biofuels. The use of biofuels was then to grow by 0.75 % annually. The ambition was to have 5.75 % biofuels in transportation by 2010. This goal was indicative and didn't reach the result the EC was aiming for.

In January 2007 the EC proposed to introduce a binding 10 % target for biofuels in transport fuel by 2020.

On 23 January 2008, the European Commission put forth a proposal for *Climate Action*. This included a directive that set an overall binding target for the European Union of 20-percent renewable energy use by 2020 and a 10-percent minimum target for the market share of biofuels by 2020, to be observed by all EU member states (MS).

The 10 percent target is to be achieved by each MS whereas the 20 percent target is an overall EU target. Some of the new EU member states (NMS) said they could not afford to develop alternatives and preferred to stay with cheaper but more polluting options such as coal and oil. It is still not clear how the switch to more renewable energy will be financed, but the most likely option is that MS will offer tax incentives. There is also speculation that the 2009 EU budget review might have to take this issue into account. The Commission will table specific proposals on national targets and burden-sharing in the fall of 2008.

DG Agri's *Note to the file* of 30 April 2007, titled '*The impact of a minimum 10 percent obligation for biofuels use in the EU-27 in 2020 on agricultural markets',* anticipates that 15 percent of all agricultural land will be devoted to biofuels, on the assumption that 30 percent of biofuels production would be from second generation biofuels and 20 percent of the supply would be imported. Prices of cereals and oilseeds are expected to increase due to the demand for feedstock. The largest price increase is expected for oilseeds, mainly sunflower seed.

[4] http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detailref&language=en&product=REF_SD_CC&root=REF_SD_CC/sd_cc/sd_cc_nrg/tsdcc330
[5] Total gross electricity generation equaled 3357 TWH.
[6] http://europa.eu/scadplus/leg/en/lvb/l27065.htm

Current issues

A. Sustainability Criteria

The Commission proposal specifies that biofuels that are used to reach the 10-percent target must comply with certain sustainability criteria (such as greenhouse gas savings and protection of natural areas, inter alia). Biofuels that do not comply with these criteria are not illegal but they do not count toward the 10 percent target.

There are currently intense discussions under way about the sustainability criteria. One of the most important ones for biofuel is the requirement for Green House Gas (GHG) savings. The GHG saving is in the EU proposal set at 35 percent. There are discussions on whether this cut-off level is enough, too high or not high enough. It is noteworthy that this 35 % value is not a scientific but a political number. Biofuels that have a higher GHG saving percentage are likely to have a higher value since they are more attractive as blending fuels. One proposal is to have a two-step approach with the initial demand for GHG savings cut-off at 35 %, which then would be scaled up. MS are divided on the timing and the size of the final savings that should apply. Some MS demand a final cut-off of as much as 60 % and others much less.

Calculating the GHG savings is another potentially contentious issue, with trade implications. The GHG saving for biodiesel made out of rapeseed is set at 44 percent. There are currently no numbers for feedstock grown in the U.S., reportedly because there were no default values available. The Commission says it will use the same calculations for U.S. products as for EU products.

Another important sustainability criterion is that biofuels shall not be sourced from land with recognized high biodiversity levels such as highly biodiverse grassland, land designated for nature protection purposes, or forests undisturbed by significant human activity. The raw material should also not be taken from land with high carbon stock. This leads to concerns about "indirect land-use change" where, for example, existing farmland is diverted to production of feedstock for biofuels and new ground is broken for food production, which has no sustainability criterion.

The Commission is expected to decide what the sustainability criteria will be by December 2008. The proposal for sustainability criteria is primarily a response to the public debate on how biofuels consumption in the EU might adversely affect the environment and for instance contribute to deforestation in developing countries. Nonetheless, depending on the details of the criteria, they could have a substantial trade impact.

B. Biofuel and Food Prices

In early 2008, the media blamed EU biofuels production and policy for rising global and European food prices. In a speech at the European Policy Center (EPC) on May 6, 2008[7], EU Agriculture Commissioner Mariann Fischer-Boel rejected these allegations. She argued that biofuels have become a scapegoat and that other factors contributing to the rising food prices were often overlooked. In this respect she stated the following factors:

- The huge increase in food demand from developing economies like China and India;
- The weather and the effect it has on production; and
- Commodity market speculation.

[7] For details please refer to report E48053: http://intranetapps/GainFiles/200805/146294620.pdf

The Commissioner placed the influence of biofuels on agricultural markets in the EU into perspective by stating that the European Union currently uses less than 1 % of its cereal production to make ethanol, and about two thirds of its rapeseed crop to make biodiesel. She contended that two thirds of the EU rapeseed production represents about 2 % of the global oilseed demand, and thus was not something that would have a great effect on the markets.

The commissioner made clear that despite the media discussion the EU intends to move ahead with its biofuel goals. She acknowledged "Biofuels won't solve all our problems, but nor will they swallow the world's food supply. Used correctly, they can be a weapon in the fight against climate change and an insurance policy against fuel supply problems – working in balance with our food needs."

C. Trade Policy

-- U.S. - B99

During the last year there has been an increase in the amount of B99 (99 % biodiesel, 1 % petroleum diesel) that has been exported from the U.S. to the EU. The European Biodiesel Board (EBB) claims that this had caused problems for the European biodiesel industry. In April 2008 the EBB sent a letter of complaint to European Trade Commissioner Peter Mandelson protesting the U.S. imports. Reportedly the Commission has responded to the complaint and is now requesting further information from the EBB to establish the full impact of the imports. The Commission has 45 days to examine the complaint and determine whether it is acceptable or not. If the complaint is deemed acceptable, the Commission will initiate an investigation which could lead to the imposition of countervailing duties on U.S. biodiesel within six months.

-- Bioethanol

Currently, bioethanol enters the EU duty-free under the *Everything But Arms* initiative (EBA) for Least Developed Countries and the *Cotonou Agreement* with African, Caribbean and Pacific (ACP) countries. In the EC documents "*A Strategy for Biofuels*" and the "*Renewable Energy Road Map*", the European Commission is proposing to look for "appropriate development of both EU domestic production and enhanced import opportunities for biofuels". In the latter document the EC even states that "if it would appear that supply of sustainable biofuels to the EU is constrained, the EU should be ready to examine whether further market access would be an option to help the development of the market". According these documents, the Doha Round and the free trade agreement between the EU and Mercosur (Argentina, Brazil, Paraguay and Uruguay) will have an impact on further market opening for bioethanol.

Biodiesel

The European Union is the biggest producer of biodiesel in the world. Biodiesel is also the most important biofuel in the EU, representing about 75 % of the total biofuels market in the transport sector. Biodiesel was the first biofuel developed and used in the EU in the transport sector in the 1990s. Its rapid expansion was driven by an increasing crude oil price, the *Blair House Agreement*[8] and resulting provisions the EU's set-aside scheme, and generous tax incentives mainly in Germany.

[8] The *Blair House Agreement* allowed the EU to produce oilseeds for non-food use of up to 1 million MT of soybean equivalent. For details please refer to page 5 of report GM4048 http://www.fas.usda.gov/gainfiles/200411/146118126.pdf

Estimated EU-27 Biodiesel Production, Imports, and Consumption (in 1,000 MT)					
	2006 r	2007 e	2008 e	2009 f	2010 f
Production	4,522	5,350	5,700	7,300	8,600
Imports	136	750	1,000	1,200	1,400
Exports	0	0	0	0	0
Consumption	4,658	6,100	6,700	8,500	10,000

Estimated EU-27 Biodiesel Production, Imports, and Consumption (in 1 Million Liters)					
	2006 r	2007 e	2008 e	2009 f	2010 f
Production	5,138	6,080	6,477	8,295	9,773
Imports	155	852	1,136	1,364	1,591
Exports	0	0	0	0	0
Consumption	5,293	6,932	7,614	9,659	11,364

r = revised / e = estimate / f = forecast Source: EU FAS posts

Production Capacity

Estimated Number of Plants and Production Capacity in the EU-27					
	2006 r	2007 e	2008 e	2009 f	2010 f
Number of Plants	119	111	153	162	172
Total Capacity					
(In 1,000 MT)	6,250	11,580	15,300	17,900	19,500
(In 1 million liters)	7,100	13,160	17,385	20,340	22,160

Note: as of December 31 of each year
Source: EU FAS posts based on industry estimates that have been adjusted for those projects that are unlikely to get past the planning stage.

As a result of the good profits in the EU biodiesel sector in 2005 and in 2006, there was a large expansion of biodiesel capacity in the EU. However, capacity increased faster than consumption (see chapter below). As a consequence, in 2007, only 60 % of the capacity on average was utilized[9]. The utilization rate was higher at the beginning of the year and lower towards the end of 2007. High vegetable oil prices and competitively priced biodiesel imports from the world market contributed to the low utilization rates.

EU biodiesel consumption is expected to continue to grow in the coming years. However, under the current market conditions it is questionable that the EU biodiesel market can support all existing - let alone projected - production capacity. Consequently, one can expect to see a number of plants closing their operation or even having to file for bankruptcy in the coming years. The structure of the biodiesel sector is very diverse and plant sizes range from an annual capacity of 2,000 MT owned by a group of farmers to 500,000 MT owned by a large multi-national company. Some plant locations were prompted by proximity of major feedstock production regions, oil mills or large ports and some by availability of subsidies. In general, EU FAS posts expect the best chances of survival for those plants that

[9] Assuming the average capacity was halfway between the reported capacity at the end of 2006 and 2007.

- have their own oil mill, or are affiliated with or at least have contracts with an oil mill;
- are located close to a major port or waterway, an oil mill or a mineral oil company;
- belong to a large company or group that can bridge a cash-flow gap; and
- are large enough to work with petroleum oil companies that blend biodiesel into their diesel.

In contrast, it will be much more difficult for companies that

- have to buy the feedstock on the spot market;
- have to bear additional transport costs because of their location;
- do not have enough capital to bridge cash-flow gaps;
- do not have long-standing suppliers and customer relations.

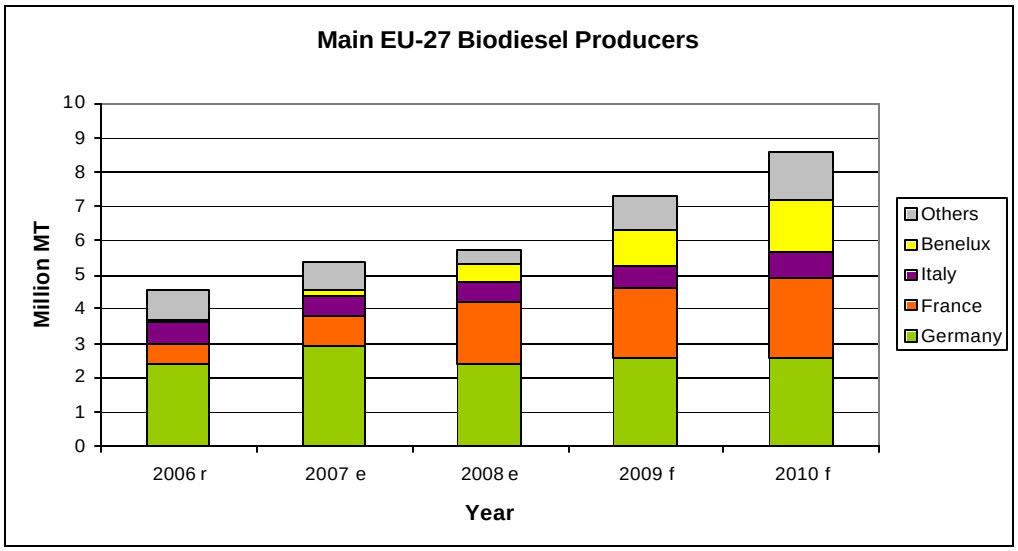
Already, the first cases of companies closing their operation or declaring insolvency occurred in the U.K., Austria, and Germany. The plant in the U.K. claimed that it could not compete with B99 imports.

Production

EU-27 biodiesel production in 2006 and 2007 is estimated at 4.5 MMT and 5.35 MMT (5.1 and 6.0 billion liters), respectively. This is equivalent to 3.9 and 4.6 million MT of oil. In 2007, the top three producing MS (Germany, France, and Italy) together accounted for 80 % of the EU's biodiesel production. For 2010, the top 3 producers are projected to include Germany, France, and the Benelux, as the Benelux countries are expected to show more dynamic development than Italy in the future. The production increase in the Benelux is fuelled by the proximity of its biodiesel plants to the big ports and refineries. This gives them a competitive advantage in transport costs. The increase in France is driven by increasing production quotas. In France, the tax incentive consists of a tax relief for a limited quantity of biofuels sold on the French market, and only plants officially approved by the GOF can benefit from it. This production quota increases annually until 2010. The rebound in Germany mirrors the rebounding German consumption resulting from an increased mandate.

Biodiesel Production – Major Producers (in 1,000 MT)					
	2006 r	2007 e	2008 e	2009 f	2010 f
Germany	2,400	2,890	2,400	2,600	2,600
France	600	900	1,800	2,000	2,300
Italy	600	550	600	650	750
Benelux	50	200	500	1,000	1,500
Others	872	810	400	1,050	1,450
Total	4,522	5,350	5,700	7,300	8,600

Source: EU FAS posts



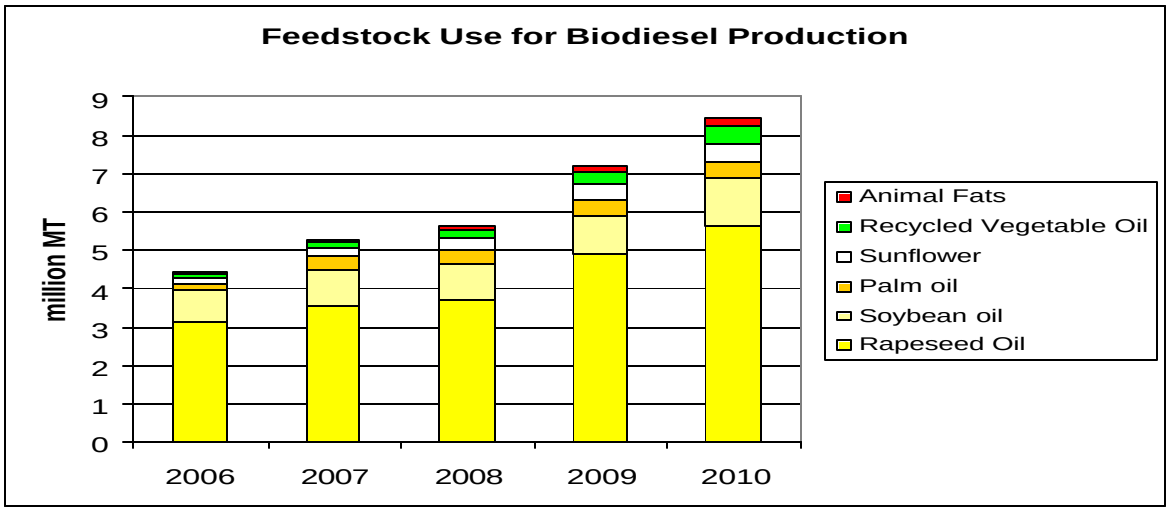
Source: EU FAS posts

Feedstock Use

In contrast to the U.S., where the majority of biodiesel is produced from soybean oil, rapeseed oil forms the major feedstock in the EU. The use of soybean and palm oil is limited by the EU biodiesel standard DIN EN 14214. Soybean-based biodiesel does not comply with the iodine value prescribed by this standard (The iodine value functions as a measure for oxidation stability.) Palm oil-based biodiesel reportedly does not provide enough winter stability in northern Europe. However, it is possible to meet the standard by using a feedstock mix of rapeseed oil, soybean oil, and palm oil. Recycled vegetable oils and animal fat are not as popular feedstocks as vegetable oils. However, with increasing vegetable oil prices they form a cheaper alternative feedstock and their use is expected to increase in the coming years.

Estimated Feedstock Use for Biodiesel Production (in 1,000 MT)					
	2006	**2007e**	**2008e**	**2009f**	**2010f**
Rapeseed Oil	3,150	3,550	3,700	4,900	5,650
Soybean oil	800	900	900	1,000	1,200
Palm oil	150	400	400	420	450
Sunflower	180	220	300	420	450
Other and not attributed	110	110	100	100	160
Subtotal Vegetable oils	**4,390**	**5,180**	**5,400**	**6,840**	**7,910**
Recycled Vegetable Oil	120	135	230	300	490
Animal Fats	10	35	130	160	200
Grand total	**4,520**	**5,350**	**5,760**	**7,300**	**8,600**

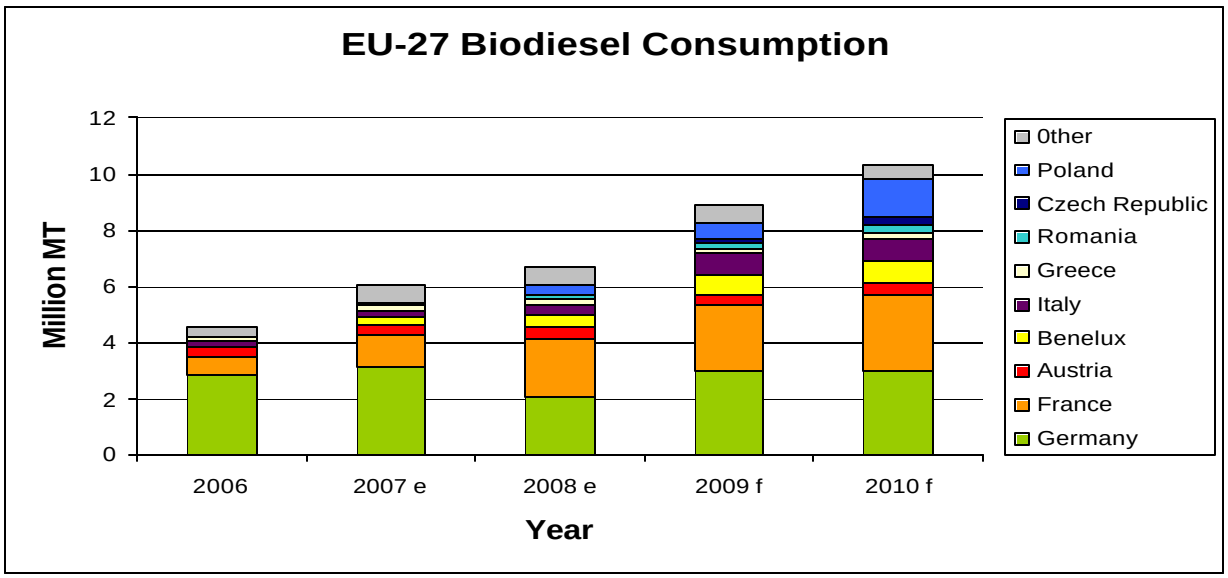
Note: Data for feedstock use is not available. The figures above represent estimates by EU FAS posts.



Source: EU FAS posts

Consumption

EU-27 biodiesel consumption in 2006 and 2007 is estimated at 4.7 and 6.1 MMT (5.3 and 6.9 billion liters), respectively. In 2007, Germany, France, Austria, and the Benelux were the largest biodiesel consumers in the EU. For 2008, EU-27 consumption is forecast to increase to 6.7 MMT (7.6 billion liters), driven by MS mandates and tax incentives. For 2009 and 2010 further consumption increases are projected, most prominently in Poland, France, Italy, and the Czech Republic. Germany is an exemption to the overall trend of increasing consumption. German consumption is expected to significantly decrease in 2008, to rebound in 2009 and remain flat in 2010. Germany is in the process of transferring from tax incentives to mandates and in 2008, the mandate does not compensate for the decrease in tax incentives. Nonetheless, Germany is expected to continue to be the largest biodiesel consumer in the EU.



e = estimate / f = forecast

Source: EU FAS posts

On an energy basis, the biodiesel share[10] of total diesel consumption during 2006 and 2007 was 2.3 % and 3 %, respectively. As a result of increasing consumption, this share is forecast to rise to about 4.6 % in 2010. However, the biodiesel share of total diesel consumption is not expected to reach the current (non binding) EU targets listed in the table below.

Estimated EU-27 Biodiesel and Diesel Consumption (in Ktoe)					
	2006 r	2007 e	2008 e	2009 f	2010 f
Biodiesel	4,170	5,460	6,000	7,610	8,955
Diesel	180,570	184,360	188,230	192,190	196,220
Biodiesel share (%)	2.3 %	3.0 %	3.2 %	4.0 %	4.6 %
Indicative EU goal[11]	2.75 %	3.5 %	4.25 %	5.00 %	5.75 %

Source: EU FAS posts

Trade

A specific customs code for biodiesel (3824 90 91) was only introduced in the EU in January 2008. Prior to this date, biodiesel entering the EU was subsumed under the CN code[12] 38 24 90 98 (other chemicals). Therefore, biodiesel imports are estimated based on industry information. Biodiesel imports are estimated to have surged from 136,000 MT in 2006 to 750,000 MT in 2007 and are expected to further increase in 2008 through 2010. The majority of imports consist of B99 from the U.S.

The EU is currently developing sustainability criteria for biofuels (see policy section of this report). Depending on the details of the final criteria regarding minimum GHG savings and applied default values, these criteria might affect the import of biodiesel or feedstock for biodiesel production in the future.

Bioethanol

EU-27 Bioethanol PSD (in 1,000 MT)					
	2006	2007 e	2008 e	2009 f	2010 f
Production	1,250	1,350	1,700	2,000	2,640
Imports	250	785	1,000	1,250	1,400
Exports	30	35	50	50	40
Consumption	1,470	2,100	2,650	3,200	4,000

EU-27 Bioethanol PSD (in 1 Million Liters)					
	2006	2007 e	2008 e	2009 f	2010 f
Production	1,584	1,711	2,155	2,535	3,346
Imports	317	995	1,267	1,584	1,774
Exports	38	44	63	63	51
Consumption	1,863	2,662	3,359	4,056	5,070

Source: EU FAS posts

[10] Including both blending as well as use in the form of B100
[11] As set in EU directive 2003/30
[12] CN stands for "Combined Nomenclature" and is the equivalent of the "Harmonised System" used in the U.S.

Production

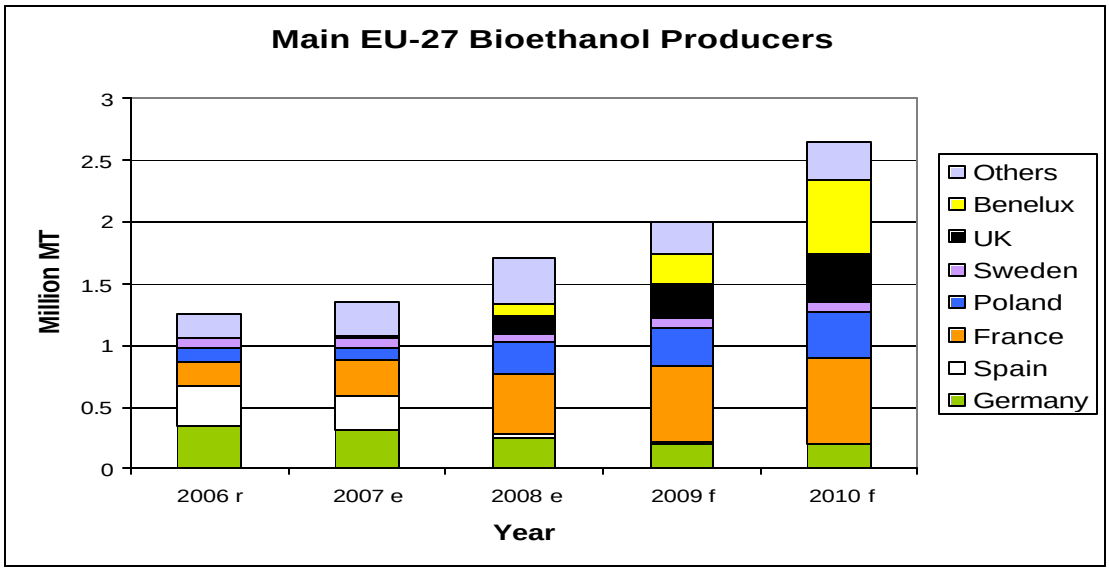
Bioethanol Production - Number of Plants and Capacity (in 1,000 MT)					
	2006 r	2007 e	2008 e	2009 f	2010 f
Number of Plants	37	49	58	65	70
Capacity (in 1,000 MT)	1,750	3,000	4,400	4,900	7,100
(in 1 million liters)	2,218	3,802	5,577	6,210	8,999

Source: EU FAS posts

EU bioethanol production in 2006 and 2007 is estimated at respectively 1.25 MMT and 1.35 MMT. This is equivalent to 0.8 and 0.86 MMT or 9.9 and 10.7 million barrels of petroleum. Bioethanol production capacity is forecast to increase from 1.75 MMT in 2006 to over 7.0 MMT in 2010. This growth in capacity is based on sector intentions to expand. It is anticipated that only a part of these investment plans will be put in practice. In 2007, only about 45 % of the available capacity was utilized due to high grain prices, in particular wheat. The lowest utilization rates were reported in Central Europe and in Spain. Another reason for the underutilization was the competitive bioethanol imports from Brazil. Due to these dim market conditions many investment projects for building new plants were delayed or canceled. Consolidation of the sector, with closure of smaller plants and investments in larger size plants, seems to be inevitable, and is expected to take place when market conditions improve.

Bioethanol Production – Main Producers (in 1,000 MT)					
	2006 r	2007 e	2008 e	2009 f	2010 f
Germany	340	310	250	200	200
Spain	320	275	25	25	0
France	200	300	500	600	700
Poland	130	100	250	320	370
Sweden	60	70	70	80	80
UK	0	20	150	275	400
Benelux	0	0	100	250	600
Others	200	275	355	250	300
Total	1,250	1,350	1,700	2,000	2,650

Source: EU FAS posts



Source: EU FAS posts

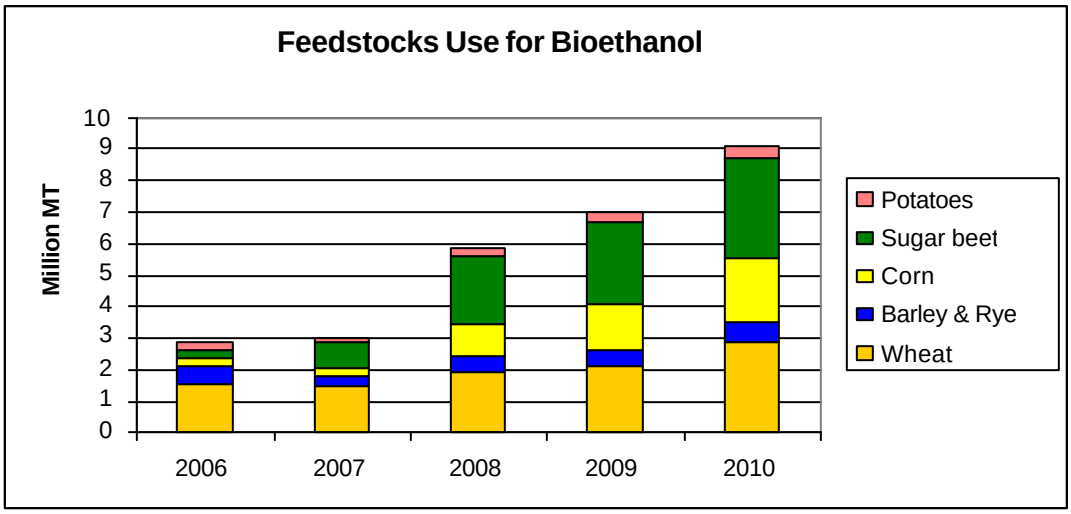
During 2008 - 2010, production is forecast to increase to 2.65 MMT, while capacity is expected to expand to over 7.0 MMT. During 2008 – 2010, a major shift of bioethanol production is expected to take place from Germany and Spain to France, the Benelux, the UK and Poland. The French government uses a tender system, by which six bioethanol producers are eligible to produce ethanol at a lower tax rate when marketed in France. Production is expected to surge in the Netherlands and Belgium as the seaports in this region can deliver feedstocks from a wide range of suppliers. In the UK and Poland, the growth is mainly based on the domestic sugar sector, converting sugar refineries to bioethanol plants.

Feedstock Use

In the EU, bioethanol is mainly produced from grain, predominantly wheat and to a lesser extent barley, rye and corn. The use of corn is, however, expected to increase significantly, in particular in Central Europe - Hungary, Poland, and Romania. Also the share of sugar beet is expected to increase, mainly in Poland, the Czech Republic, the UK, and Greece. A limited volume of bioethanol is produced from the surplus of wine alcohol in the EU.

Feedstock Use for Bioethanol Production (in 1,000 MT)					
	2006	2007 e	2008 e	2009 f	2010 f
Wheat	1,530	1,460	2,040	2,180	3,000
Barley & Rye	570	330	590	640	690
Corn	250	230	990	1,440	2,000
Sugar beet	270	880	2,160	2,670	3,260
Potatoes	300	120	300	350	400

Source: EU FAS posts



Source: EU FAS posts

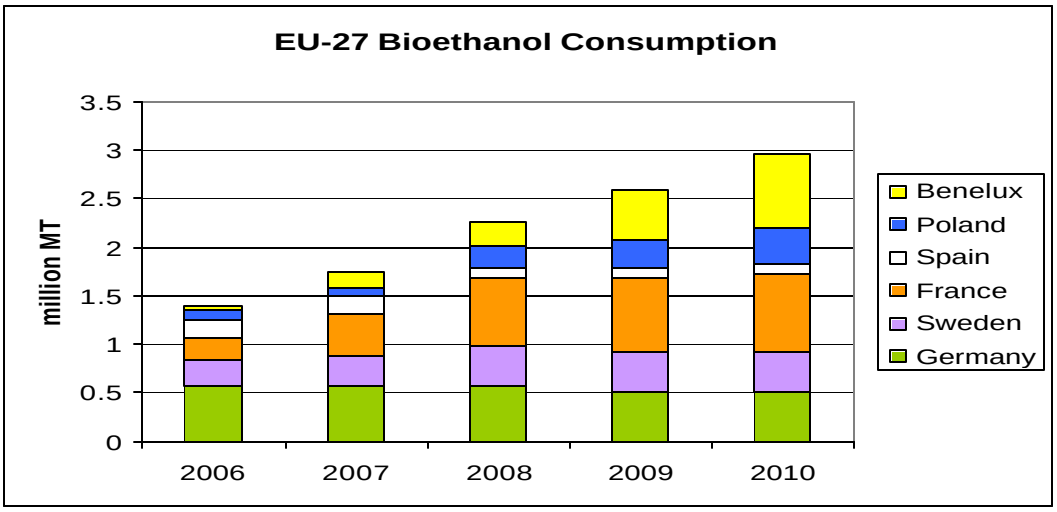
Sector sources report a negative margin for bioethanol production with a wheat price above 160 to 170 €/MT with an oil price of 100 USD a barrel. These price levels were reported during the second half of 2007. During this period, sugar prices fell, which made sugar beets a favorable feedstock for bioethanol production, compared to wheat. It is however not possible technically to switch between sugar beets and grains as feedstock in individual plants. During the new season, an abundance of wheat is anticipated, which will possibly reduce wheat prices below 170 €/MT. In view of dramatically rising fossil fuel prices, ethanol producers and investors into the market in Europe might be inspired to reconsider their position to hold off with new investment into the ethanol market. An operator who temporarily shut down his production plant in Germany announced that he will restart the plant. An expected significantly larger grain crop in Europe in the summer of 2008 may have contributed to this decision. The availability of wheat for bioethanol production is, however, expected to remain limited in the EU as bioethanol producers will need to compete with feed compounders. In general, positive margins on bioethanol production with wheat as feedstock are anticipated during good crop years. In such a situation, bioethanol production will not have to compete with intervention as the intervention price offered is far below current and anticipated wheat prices.

Consumption

EU-27 bioethanol consumption in 2006 and 2007 is estimated at 1.47 MMT and 2.1 MMT, respectively. This is equivalent to 0.94 and 1.3 MMT or 11.7 and 16.7 million barrels of oil. Germany, Sweden, France, and Spain were the main consumers during this period. During 2008 – 2010, bioethanol consumption is forecast to grow to 4.0 MMT. The most significant growth is expected in France, the Benelux, Sweden, and Poland. The growth in France and Poland will be satisfied mainly by domestic production, while in Sweden additional consumption will be mainly supplied by imports. Benelux production intends to compete with imports on its domestic market.

Bioethanol Consumption – Main Consumers (in 1,000 MT)					
	2006 r	2007 e	2008 e	2009 f	2010 f
Germany	580	585	575	525	525
Sweden	260	300	400	400	400
France	235	420	700	750	800
Spain	180	200	100	100	100
Poland	90	80	230	300	370
Benelux	50	150	250	500	750
Others	75	365	395	625	1,055
Total	1,470	2,100	2,650	3,200	4,000

Source: EU FAS posts



Source: EU FAS posts

EU-27 Bioethanol and Gasoline Consumption (in Ktoe)					
	2006	2007 e	2008 e	2009 f	2010 f
Bioethanol	940	1,345	1,705	2,050	2,560
Gasoline	112,515	113,530	114,550	115,580	116,620
Bioethanol share (%)	0.8	1.2	1.5	1.8	2.2
Indicative EU goal[13]	2.75 %	3.5 %	4.25 %	5.00 %	5.75 %

Source: EU FAS posts

Trade

As bioethanol has no HS (Harmonized System) code, trade numbers are difficult to assess. Assuming the increase of EU ethanol imports (HS code 2207) since 2002 can solely be attributed to expanding bioethanol imports, EU bioethanol imports are estimated at about 250,000 MT in 2006. During 2007, imports grew significantly to 785,000 MT. The majority of the bioethanol is imported by the UK, Sweden, and the Benelux countries. During 2007, imports from Brazil, Argentina, Costa Rica, Peru, Guatemala, and the U.S. were reported by the Rotterdam port authorities. On April 11, 2008, the Dutch and Brazilian Governments

[13] As set in EU directive 2003/30

signed a Memorandum of Understanding in which the strategic location of the Rotterdam port for the transit of biofuels to the EU is recognized. A part of the bioethanol imports is blended with gasoline in Rotterdam, but most of the biofuel is blended at its final destination to fulfill local MS requirements. Brazil mainly exports undenatured, pure ethanol to the EU. The tariff on undenatured ethanol is 192 € per thousand liter, while the tariff on denatured ethanol is 102 € per thousand liter. Most EU MS only permit blending with undenatured ethanol. The UK and the Dutch governments, however, also permit blending with denatured ethanol. As a consequence the UK and Dutch ethanol sectors must compete with the lower-priced denatured ethanol. A part of the ethanol is imported under the HS code 3824 which is subject to a lower tariff, 6.5 % of the customs value.

As EU production is not expected to be sufficient for domestic consumption, the current import trend is expected to continue, reaching an import volume of 1.4 MMT in 2010. As EU production is not expected to be sufficient for domestic consumption, the current import trend is expected to continue, reaching an import volume of 1.4 MMT in 2010. Currently, MS individually regulate their bioethanol imports by issuing import licenses to importers. The European Commission is not expected to take strong political action against these imports. In several biofuels policy papers of the European Commission (see Policy section of this report), the European Commission is proposing to seek a balanced approached towards domestic biofuels production and imports. Currently the European Commission is determining criteria for sustainability (see Policy section of this report), but these are anticipated not to affect ethanol produced from sugarcane.

Biogas

In 2005, 14 % of gross electricity consumption[14] in the EU-27 was produced from renewable resources, translating into about 463 TWh. Biogas production in the EU-27 in 2005 and 2006 amounted to 13,413 GWh and 17,254 GWh, respectively[15].

In the EU-27, biogas from agricultural crops is almost exclusively produced by farmers in Germany. Biogas plants in most other EU countries process manure, sewage waste, and waste material from the food processing industry. German farmers predominantly use silage corn and other plant silage materials to convert into biogas, and subsequently converted into electric power and heat. In 2007, there were about 4200 biogas plants in operation. About 350,000 to 400,000 hectares of farm land were used to produce the required feedstock. Investors operating biogas plants in Germany are entitled to a fixed price for electricity inserted into the public power system. The per-unit-compensation ranges between 0.124 € and 0.195 € per KWh.

For the immediate future, the number of biogas plants is not expected to grow significantly due to high feedstock cost. However, power plants and natural gas trading and processing companies are considering investment in large-scale biogas operations to produce biogas which is directly inserted into the natural gas pipeline system. Such investment plans are currently only known from companies in Germany.

According to an industry report[15], the vast majority of biogas in Europe is produced from rubbish dump landfills amounting to 2,918 ktoe in 2006. The gas production from sewage sludge amounted to 942 ktoe and from other sources including agricultural crops was reported at 1,283 ktoe in 2006. Farmers in other EU countries such as the U.K., Italy, the

[14] http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detailref&language=en&product=REF_SD_CC&root=REF_SD_CC/sd_cc/sd_cc_nrg/tsdcc330

[15] 7th report EuroOberserv'ER, State of Renewable Energies in Europe, 2007

Benelux, and Hungary, predominantly operate biogas fermenters with animal manure, crop wastes and other waste materials.

Pure Vegetable Oil

Pure vegetable oil (PVO) can be used as a biofuel without conversion to biodiesel but only in specially-modified engines[16]. It is mainly used in agriculture and by company fleets.

Consumption of pure vegetable oil as a biofuel in the EU-27 (in 1000 MT)					
	2006	2007 e	2008 e	2009 f	2010 f
Soybean oil	500	230	140	50	50
Rapeseed Oil	605	520	360	180	190
Total	**1105**	**750**	**500**	**230**	**240**

Source: EU FAS posts

Note: The distribution between soybean oil and rapeseed oil is based on discussion with industry and technical experts as statistics on this do not exists.

EU-27 consumption of PVO as biofuel mainly consists of rapeseed oil and soybean oil, and is estimated at 1.1 million MT in 2006 and 750,000 MT in 2007. It is forecast to further decline to 500,000 MT and 250,000 MT in 2008 and 2009, respectively. The large decline is a result of tax changes in Germany, where 95 % of the EU-27 consumption occurs (other users include the Benelux, France, and Poland). These tax changes reduced the competitive advantage of PVO compared to diesel and prompted many trucking companies to revert to conventional diesel.

Biomass

According to the European Biomass Association, biomass is the renewable energy source with the fastest growth and biggest potential in Europe. In 2004, wood-based biomass accounted for 85% of the total biomass supply in Europe and was the main source for bioenergy followed by waste (10%) and agricultural-based biomass (5%). About 66% of the biomass was burned directly for heating, 31% for electricity and cogeneration and 3% for liquid fuels. Heat is the most important market for biomass.

The share of biomass in the total energy mix in the EU-27 amounted to 4 % in 2005. However, the share differs widely among the MS, from under 2% in some countries to almost 20% in Sweden and Finland. In December 2005, the European Commission adopted the EU Biomass Action Plan that aims to more than double the biomass share by 2010 and increase biomass use from 69 Mtoe in 2005 to 150 Mtoe in 2010. However, in order to meet this ambitious target, a number of measures to boost the biomass sector will have to occur.

The main reasons for the wide use of bioenergy in the Swedish and Finnish energy systems are the availability of forests and raw materials, a developed forest products industry, and the wide use of district heating systems. About 90% of bioenergy used in Sweden and Finland today comes from the forestry sector. The raw materials used include forestry residues such as brash (branches and tree tops), and waste products from the saw mill and pulp industry, such as sawdust and bark. However, the largest source of bioenergy in

[16] While biodiesel and diesel have similar specifications, pure vegetable oil differs substantially in viscosity and burning parameters. As a result, engines have to be modified in order to run on pure vegetable oil.

Sweden and Finland today is black liquor[17] from the forestry industry. Most of this energy is used directly in the pulp production process but also for district heating and electricity production.

Heating and Electricity

District heating has a significant position in Sweden, accounting for about 40% of the heating market. Compared to 1970, when oil was the main fuel, oil accounts for only a few % today. Over 60% of district heating fuel today is biomass. The use of wood fuels by the district heating sector has increased more than fivefold since 1990. The main form of these fuels is felling residues and solid by-products from the forest products industry, although processed fuels such as briquettes and pellets are also being increasingly used.

Pellets

Wood pellets use in the EU-27 mainly occurs in Sweden and Germany. Sweden has a rapidly growing wood pellet industry. Deliveries of pellets to the Swedish market increased by almost 14% between 2005 and 2006. In 2006, the Swedish energy system used a total of almost 1.7 million tons of pellets, over 1% of Sweden's total energy supply. In Germany, pellets production capacity more than tripled in 2007 from 2005, reaching an annual production capacity of 1.8 MMT. There are 40 locations in Germany where pellets are produced. The main raw material is sawdust and wood chips, by-products of sawmills. Sales of pellets in Germany are expected to increase by 20-30% to 1.1 MMT in 2008 due to high crude oil prices, which make wood pellets an attractive alternative fuel. The total number of pellet heating systems is estimated at about 100,000 units in 2008. In 2007, only 13,000 new pellet heating systems were sold and in 2008 about 20,000 sales are predicted. Wood pellets are considered price competitive and environmentally friendly.

Biomass-to-Liquid (BtL)

BtL is a second generation biofuel that is produced from biomass. While BtL can be produced from cellulosic material, it is distinctly different from cellulosic ethanol, another second generation biofuel. For details on the characteristics and the production process of BtL please refer to page 20 of report GM4048[18].

BtL research enjoys much attention, particularly in Germany, as it has a better yield per hectare[19] than first generation biofuels. BtL is still in its infancy. Once widely available, it could significantly contribute to achieving the ambitious EU biofuel goals. Projections as to when this might be range from 5 to 10 years.

In April 2008, the first commercial - yet small - plant opened in Freiberg, Saxony in Eastern Germany. The plant has an annual production capacity of 18 million liters, or 15,000 MT. At full capacity it will use 65,000 MT of wood dry matter as feedstock. Subject to the company's assessment of the projected profitability it is contemplating building an large industrial scale plant with an annual capacity of 270 million liters/200,000 MT (71 million gallons). The final decision is projected for 2009. If built, the plant could start operating in 2012 or 2013.

[17] Black liquor is a waste product generated when wood chips are boiled to produce pulp.
[18] http://www.fas.usda.gov/gainfiles/200411/146118126.pdf
[19] Unlike first generation biofuels such as bioethanol or biodiesel, BTL production uses the whole plant, while biodiesel and bioethanol currently only use parts of the plant. This results in a smaller area requirement for the same amount of energy compared to biodiesel or bio-ethanol. According to the *German Agency for Renewable Resources* (*FNR*) about 4000 liters of BtL can be produced from 1 ha of energy plants compared to 2560 liters for cereal based bioethanol and 1550 liters for rapeseed oil based biodiesel (RME)[19].

In addition to the plant in Saxony, there are two other research projects on BtL in Germany and in Sweden, the *Värnamo Biomass Gasification Centre*, has a pilot plant that uses the existing biomass-fuelled pressurized IGCC (integrated gasification combined-cycle) CHP (combined heat and power) process.

Related reports from USEU Brussels and MS:

Report Number	Country	Title	Date Released
E48062	EU-27	Oilseeds Annual	05/30/2008
E48053	EU-27	EU Agriculture Commissioner's Message on Biofuels and Food Prices	05/14/2008
GM8020	Germany	Biomass-to-Liquid Biofuel Plant Opens in Germany	04/18/2008
SW8002	Sweden	Sweden Fights to Import Cheap Ethanol	02/07/2008
GM7051	Germany	BioTownTM USA and Bioenergy Village Juehnde Explore Options for Cooperation	11/19/2007
FR7032	France	2007/08 Prospects: Oil Deficit Widens	10/15/2007
SW7014	Sweden	Sweden Plans to Abolish Ethanol Duty	09/18/2007
SP7011	Spain	Biofuels without Subsidies?	08/20/2007
E47066	EU-27	Commission Publishes Impact Assessment of the 10 Percent Biofuel Obligation	08/08/2007
SP7024	Spain	Update	07/26/2007
PL7044	Poland	Biofuel Update	07/22/2007
GM7024	Germany	Cheap Biodiesel Imports Could Potentially Impact German Rapeseed Oil Trade Balance	06/25/2008
E47051	EU-27	Biofuels Annual	06/04/2007
PL7028	Poland	New Tax Incentives Are Not Enough For Polish Biofuel Producers	05/30/2007
These reports can be accessed through the USEU mission's website http://useu.usmission.gov/agri/ or through the FAS website http://www.fas.usda.gov/scriptsw/attacherep/default.asp.			

Annex I: Biofuels Incentives in the Member States

Production incentives

- Investment aids

Greece: Support from National Investment Laws

Netherlands: Subsidy program of 60 million € for domestic production of biofuels.

Portugal: Portugal passed Decree 66/2006, which established tax benefits for the producers of biofuels in Portugal. This law reduced or exempted petroleum taxes on biofuels to approved producers by 280 € -300 € per 1,000 liters for fuel destined for the commercial market, with a limit of 205,000 tones of biodiesel in 2007. With the recent passage of Decree 1391-A/2006, the GOP set the maximum ceiling on which the tax exemption can apply at 100,000 tons per producer. Each producer will be allocated a quota for the tax-exempt production based upon factors such as the source of the raw materials and location of the production. For 2008, the exemption is the same with a limit of 320 million liters of biodiesel.

In the case of bioethanol, the government is planning to provide a tax exemption of 400 € - 450 € per 1,000 liters with a limit of 65 million liters as from 2009.

Spain: The Spanish Government and many of the regional Autonomous Governments provide tax breaks to encourage potential investors in the renewable energies sectors. Most of the incentives support a variety of energy generation sectors including the production of ethanol and renewable diesel.

Sweden: Government support programs for cellulosic ethanol production.

- Tax breaks/credits/penalties for producers

Belgium: The Belgian Government appointed distribution quotas to three bio-ethanol producers in Belgium, totaling 248,000 MT. The quotas are valid for six years.

In December 2006, the Belgian Government also appointed distribution quotas to four biodiesel producers. These quotas add up to 374,000 MT and are valid for a period of six years. The quotas equal the projected domestic demand in 2010. An important part of the volume will be produced in the so-called Ghent Bio-Energy Valley.

As from November 1, 2006, the Belgian Government increased the tax on diesel (0.013 €/liter) and gasoline (0.037 €/liter). With the collected tax the oil companies will be compensated for blending biofuels, with 0.0102 €/liter and 0.0305 €/liter, respectively.

Bulgaria: 3% reduction in excise duties for biofuel and mineral fuel blends.

France: There is an environmental tax (TGAP) imposed on distributors when the incorporation rate of biofuels they sell is lower than the objective of the French Government.

Hungary: The system of excise tax preferences have been changed beginning June 30, 2007 to a mandate for bio-ethanol, and from January 1, 2008 for bio-diesel. The compulsory blending standards have been removed (e.g. blending with pure ethanol as well as ETBE will be eligible). However, gas companies must use more than 4.4% bio component in their fuels (% based on volume) to be eligible for lower excise tax. If they do not meet the 4.4% criteria, the normal excise tax will be imposed. The preferential tax is 32 €/hl lower for diesel oil and 33 €/hl lower for gasoline compared to the normal tax rate.

Consumption incentives

- Tax breaks for consumers (e.g. reduced mineral tax, reduced VAT etc.)

France: Reduced mineral tax on limited quantities of biodiesel and bioethanol. Tax rate and quantities are revised annually by the French Government (see summary table implementation of Directive 2003/30). The quantities are distributed in a tender system administered by the GOF to certain plants located in France and in the MS close to French borders (Germany, Italy, Spain, Belgium).

Germany: Energy tax reduction for B100. Until August 2006, tax was set at zero. Currently tax amounts to 0.09 €/liter versus 0.47 €/liter for diesel. The tax reduction will be phased out over the next years. By 2012, taxes for diesel and biodiesel will be at the same level.

Greece: See Summary Table Implementation of Directive 2003/30 in Annex II.

Italy: In both 2007 and 2008 the (partial= 80 %) consumption tax relief quota for biodiesel is 250,000 tons. In 2007, the actual amount was raised by additional 54,000 tons, coming from unused other budget resources. For bioethanol there is a three year (2008-2010) tax relief fund (73 million € per year): the tax would be reduced by about 50 %. The amount of the un-reduced tax is 0.562 €/liter for gasoline and 0.423 €/liter for diesel.

Poland: Price regulations which reduce VAT tax on biofuel means biofuels are not attractive for fuel users, since the tax reduction hardly covers additional costs of production and distribution.

In 2007, the Polish Parliament approved new regulations which were suppose to encourage biofuel use - reductions in excise tax and fuel tax (see reports PL7028, dated 5/30/2007 and PL7044, dated 7/22/2007). These measures- if approved by the EU should be high enough to make biofuel use attractive.

Romania: An excise exemption (valued at 259.91 €/MT) for pure biodiesel was applied from July through December 2007 for the mandate (2%), regardless of the actual amount of biodiesel contained in the blend. On January 1, 2008 the duty exemption for biodiesel was eliminated. Currently there are no incentives for biofuel producers. The current excise tax for conventional fuel and biofuel is 325 €/MT.

Slovenia: In accordance with the Excise Act, distributors of fuel for motor transport vehicles qualify for an exemption from excise duties, provided that the fuel is blended with the following biofuels: bio-ethanol, biodiesel, biogas, bio ETBE or biodimethyl ether. The level of exemption from excise duties is proportional to the share of biofuel added.

Sweden: Sweden promotes the use of ethanol and biodiesel through tax relief. There are no energy taxes for ethanol or biodiesel.

In addition to the tax incentives, there are a number of different policy instruments currently used in Sweden for promoting the use of biofuels and environment-friendly cars, for example:

- Since April 2006, all major fuel stations in Sweden are required to sell at least one type of biofuel.
- The Swedish government has introduced a cash bonus of SEK 10,000 (USD 1,441) to private individuals who buy a new “green” car. The program is scheduled to run from April 1, 2007 until December 31, 2009.
- Free parking for using green cars.

- Use mandates

Bulgaria: The major law about biofuels was passed by the Parliament in June 2007 and called for mandatory 5% biofuel blending. Although this requirement entered in force on January 1, 2008, few fuel distributors are selling biofuels today.

Czech Republic: There are blending mandates based on the volume of total transport fuels:
As of January 1, 2008: 2 % for petrol;
As of September 1, 2007: 2 % for diesel;
As of January 1, 2009: 3.5 % for petrol and 4.5 % for diesel.

Finland: In 2007, a new law on promoting the use of biofuels in transport came into force on Jan. 1, 2008. The law obliges distributors of transport fuels to supply a minimum volume of biofuels annually. The minimum biofuels volume increases every year so that in 2008 it will be at least 2% of the total energy content of all transport fuels supplied by a fuel distributor. In 2009, this share will be at least 4% and in 2010 and subsequent years it will be at least 5.75%.

France: The French government has set biofuel objectives for each year until 2010.

2005	2006	2007	2008	2009	2010
1.2%	1.75%	3.5%	5.75%	6.25%	7%

The former French government targeted 10% by 2015, but the current GOF is reviewing this level.

Germany: Mandates stated below are based on energy content not on volume. The gap between the specific and the overall mandates can be filled with any approved biofuel to the liking of the trader. Mandates apply to everybody who sells fuels, not just gas stations.

Year	Overall mandate (%)	Biodiesel specific (%)	Ethanol specific (%)
2007		4.4	1.2
2008		4.4	2.0
2009	6.25	4.4	2.8
2010	6.75	4.4	3.6
2011	7.00	4.4	3.6
2012	7.25	4.4	3.6
2013	7.50	4.4	3.6
2014	7.75	4.4	3.6
2015	8.00	4.4	3.6

Italy: 2 % of sales in 2008, 3 % in 2009 (energy content)

Netherlands: On January 1, 2007, the Dutch Government implemented EC Regulation 2003/30/EC into the Dutch Decision Biofuels 2007. From this date, distributors of transport fuels are obliged to blend 2 % of biofuels in 2007, increasing gradually to 5.75% in 2010. The percentage is based on energy content.

The Dutch Ministry of Economic Affairs set targets for renewable electricity of 6 % in 2005, 9 % in 2010, and 17 % in 2020. In addition, the Dutch Ministry of Environment signed an agreement with electricity producers to reduce carbon dioxide emissions by 3.2 million MT between 2008 and 2012. The Dutch Government also formulated a vision to cover 30 % of the total energy consumption by biomass energy in 2040, mainly as primary fuel for electricity production and as transportation fuels.

Poland: Mandatory National Goal Indicators: 230,000 for CY 2008 and almost 550,000 tons for 2010. The most significant policy that will encourage biofuel use was the introduction of National Goal Indicators for the years 2008-013 (see PL7044, dated 7/22/2007). As of January 2008, these indicators became obligatory for all liquid fuel producers and all fuel importing companies (both outside of EU and within the EU), which trade or distribute them in Poland. This National Goal Indicators (NGI) for biofuels are: 3.45% energy level use for 2008, 4.60% for 2009, 5.70% for 2010, 6.20% for 2011, 6.65% for 2012 and 7.10% for 2013.

Romania: The mandate was introduced for the first time in July 2007, when the fuel retailers had to use at least 2 % of the biodiesel in blending. The percentage increased to 3 % starting with January 2008, and it is scheduled to rise at 4 % in July 2008. Starting with July 2009, a minimum 4 % of bioethanol based on volume should be blended with gasoline.

Slovenia: In accordance with Articles 5 and 6 of the Rules on the content of biofuels in motor vehicle fuels (Slovenian Official Gazette No 83/05, corrigendum 108/05), distributors of fuel for transport vehicles must ensure that the annual average content of biofuels in all transport fuels placed on the Slovenian market in the particular calendar year is as follows:

- 2006 - equivalent of at least 1.2%;
- 2007 - equivalent of at least 2%;
- 2008 - equivalent of at least 3%;
- 2009 - equivalent of at least 4%; and
- 2010 - equivalent of at least 5%.

The content of biofuels is expressed as a percentage of the energy value of all motor vehicle fuel placed on the market. In accordance with the Slovenian *rules on the content of biofuels in motor vehicle fuels*, distributors may transfer obligations from one year to the next if the price of purchasing biofuels exceeds the total made up of the price of fossil fuels and the excise duties on them. Taking these rules into account, we estimate that the actual shares of biofuels on the market in the Republic of Slovenia in the following years amount to:

- at least 0.7% in 2007,
- at least 1.2% in 2008,
- at least 2.3% in 2009,
- at least 3.4% in 2010,
- at least 4% in 2011,
- at least 4.5% in 2012 and, in the following years, at least 5% of the annual total quantity of motor vehicle fuel placed on the market.

Spain: The Government of Spain committed to establish a mandatory mixing law sometime in 2009. The mandatory mixing legislation would permit renewable energy producers to pass the relatively high costs of producing renewable energies on to consumers. However, much will depend on the state of the economy.

Sweden: All gasoline sold in Sweden contains 5% ethanol. In order to reach the EU goals, Sweden is working actively in the EU for an increase of low-level blends of ethanol to 10% in gasoline. As of August 2006, Swedish regulations allowed a 5% blend of biodiesel in conventional diesel – an increase from 2%. Since 2005, renewable fuels must make up at least 3% of all gasoline and diesel consumption for transport. Also, Sweden has introduced obligations on fuel retailers to sell at least one type of biofuel.

U.K.: Renewable Transport Fuel Obligation (RTFO) places an obligation on UK fuel suppliers to ensure that a certain percentage of their aggregate sales is made up of biofuels. Starting at 2.5 per cent, it will require 5 per cent of all UK fuel sold at UK gas stations to come from a renewable source by 2010. However, questions have recently been widely raised in UK Government circles as to the environmental justifications for biofuels and it remains to be seen how rigorously the new targets will be enforced.

Annex II: Summary Table Implementation of Directive 2003/30

	Total fuel consump-tion Million MT	Biofuels Volume		Bio-diesel 1000 MT	Pure Veg. Oil 1000 MT	EtOH 1000 MT	Tax incentive €/hl + (%)			Time frame De-taxation	Outlook
		1000 MT	%				Biodiesel	Pure Vegetable Oil	EtoH		
Austria /3	8.1	331	3.54*	321	10	0	29.7 (100%)	29.7 (100%)	41.7 (100%)		Substitution Requirements: 10/1/2005: 2.5%, 10/1/2007: 4.3%, 10/1/2008: 5.75%
Belgium /2	8.6	105	1.00	100	5	0	1.02 (3.37)	3.37	3.05 (3.37)	2007-2010	2010: 5.75%*
Cyprus /4											
Czech Republic /2	6.2	37.2	0.6	36.9	0	0.287	--	--	--	2009 – 2014	2010: 5.75% e.c.
Denmark /1	1940	0		5	0		0	0	0		No tax exemption foreseen
Estonia /4											
Finland	5.1	55	0	20	0	60	0	0	0		2008: 2% 2009: 4% 2010: 5.75%
France	2006: 42	2006: 866		2006: 631 (1.77%) 2007: 1150 (3.5%)	2007: 10	2006: 235 (1.75%) 2007: 420 (3.5%)	2005: 33 2006: 25 2007: 25 2008: 22		2005: 38 2006: 33 2007: 33 2008: 27	1991-2015	Objectives in energy value: 2005: 1.2% 2006: 1.75% 2007: 3.5% 2008: 5.75% 2009: 6.25% 2010: 7% 2015: 10%
Germany /2	50.4	4 319	9	3133	727	460	2007: 382 (81%) 2008: 322 (68%) 2009: 256 (54%) 2010: 196 (42%) 2011: 137 (29%) 2012: 20 (4%) 2013: 20 (4%) 2014: 20 (4%) 2015: 20 (4%)	2007: 450 (96%) 2008: 372 (79%) 2009: 286 (61%) 2010: 206 (44%) 2011: 137 (29%) 2012: 20 (4%) 2013: 20 (4%) 2014: 20 (4%) 2015: 20 (4%)	65.45 (100%)	2004 – 2011 Gradual phase out of tax benefits started in August 2006	Mandates (based on energy content) Biodiesel 2007 onwards: 4.4 % Bioethanol 2007: 1.2 % 2008: 2.0 % 2009: 2.8 % 2010 onwards: 3.6 % Overall biofuel mandate: 2009: 6.25 % gradually increasing to 8.00 % by 2015

	Total fuel consump-tion Million MT	Biofuels Volume		Bio-diesel 1000 MT	Pure Veg. Oil 1000 MT	EtOH 1000 MT	Tax incentive €/hl + (%)			Time frame De-taxation	Outlook
		1000 MT	%				Biodiesel	Pure Vegetable Oil	EtoH		
Greece / 2	7.1	150	2.11	150		-	0	0			Starting January 1, 2008 GOG has abolished any tax incentives for biodiesel effective in 2005 through 2007. Since that date, biodiesel is taxed equally with diesel
Hungary / 3	5.8	32	0.55	2	0	30	32 for all diesel that meets the minimum substitution requirement	0	33 for all gasoline that meets the minimum substitution requirement		Minimum substitution requirement: From July 1, 2007 gasoline 4.4 % vol From January 1, 2008 diesel 4.4 % vol
Ireland / 4											
Italy / 2	40	230	0.6	230			45	21.1		2010	Expanding consumption
Latvia / 4											
Lithuania / 4											
Netherlands / 2	10.9	405	2.30	200	5	150	0	0	0	-	2010: 5.75%*
Poland / 3	2006: 12.2	2006: 110	0.9	2006: 17		2006: 93	About 30 + 19% deduction on part of income tax from increased cost of bio component production	About 31 + 19% deduction on part of income tax from increased cost of bio component production	About 45+ 19% deduction on part of income tax from increased cost of bio component production	N/A	2010: 5.75% energy value
Portugal / 4											
Romania	5.4	50	1	50	0	0	NA	NA	NA	NA	
Slovakia / 4											
Spain / 4											
Sweden / 2	6.63	404	6.1	114	0	290	5.5 (100%)	0	7 (100%)	2008	2010: 5.75%
UK / 4											

Notes: Total fuel consumption refers to fuel in the transport sector only. Source: EU FAS posts

* Substituted Energy Content

1 = 2008

2 = 2007

3 = 2006

4 = no current data available, please see summary table in report E47051 for previous information.