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EU-27 BIOFUELS ANNUAL

Annual Report 2009

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Report Highlights:
In Directive 2003/30, the EU set indicative targets for biofuel consumption. While the use of biofuels is trending upwards it is not expected that the EU will achieve its target of 5.75% of road transport fuel by 2010. In the previous EU Biofuels Annual, it was reported that profit margins in the biofuels sector were reduced by high feedstock prices and competitive imports. Since the summer of 2008, however, the market for biodiesel in the EU further deteriorated due to the decline in fossil fuel prices and policy changes in Germany. In addition, biodiesel imports increased stronger than anticipated. While biodiesel production stagnated, bioethanol production expanded more than forecast in the previous Annual. The majority of this added production was based on sugar beet derivatives as feedstocks, which were relatively price competitive. In 2009, duties on imports of U.S. biodiesel are expected to dramatically reduce biodiesel imports from the United States. The void is expected to be filled with higher domestic production, and increased imports from other third countries, in particular Argentina, Indonesia and Malaysia. In 2010, EU production as well as imports of biodiesel and bioethanol is forecast to continue its upward trend following the domestic demand for these transport fuels, spurred by biofuel use mandates. The biofuel targets for 2020 laid down in the EU Energy and Climate Change Package (CCP) were finally adopted by the European Council on April 6, 2009. EU Member States will have to submit national action plans by June 2010. This report also covers developments in the EU biogas and biomass market. This report has been drafted by Bob Flach, Karin Bendz, Sabine Lieberz, Bettina Dahlbacka and Dietmar

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Executive Summary:

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General Overview

The EU biofuels market largely depends on consumption mandates and incentives. The main emphasis of these measures is clearly on the consumption side. Direct production incentives do exist on the Member State (MS) level but are in the minority. In Directive 2003/30 the EU set indicative non-binding goals for biofuel consumption. 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 Annexes I and II.

Biodiesel is the main biofuel for road transport used in the EU and is estimated to account for 72 percent of this market in 2008 (see table below). Bioethanol is the runner-up with a 24 percent market share. Pure vegetable oil accounts for the remainder and is expected to

decline and form a niche market. Many expectations rest on Biomass-to-liquid (BtL) to support the transition to second generation technologies. However, this second generation biofuel is still in its infancy and will take some years before it reaches a significant volume.

While biofuels as a share of all road transport fuels is trending upwards, the EU as a whole is not expected to achieve its Directive 2003/30 targets by 2010 (see table below).

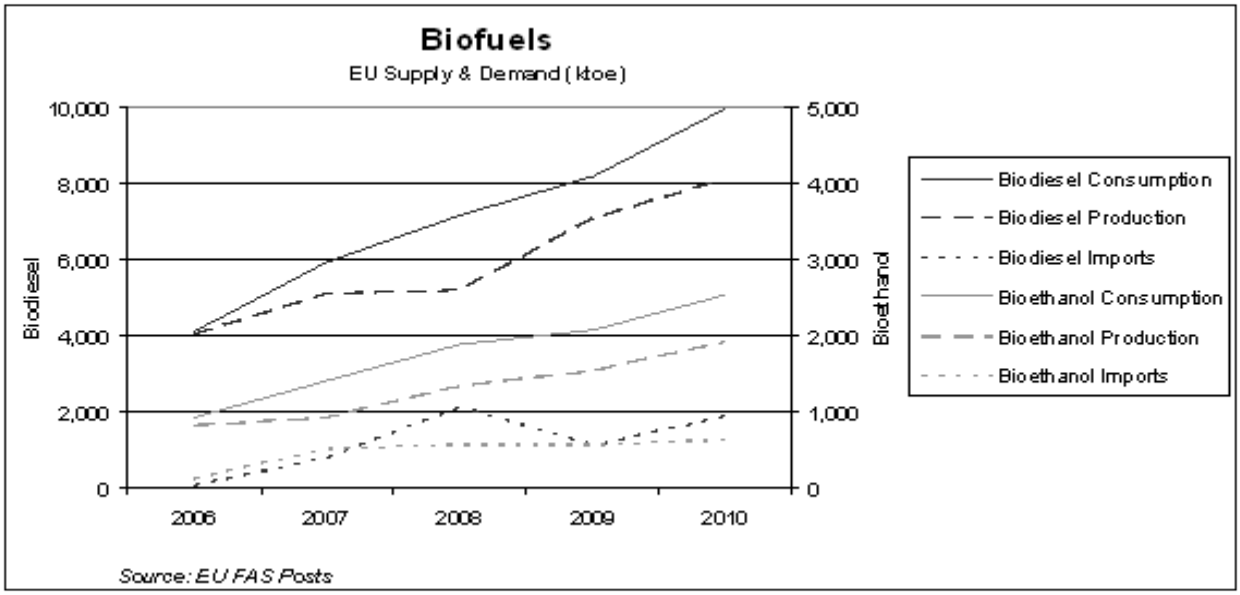
Estimated EU Biofuel and Conventional Fuel Consumption for Road Transport (Ktoe)					
	2006[r]	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Biodiesel	4,110	5,900	7,160	8,170	9,980
Pure Vegetable Oil	920	660	370	100	100
Bioethanol	880	1,380	1,790	2,070	2,560
BtL	0	0	0	2	8
Total biofuels	**5,910**	**7,940**	**9,320**	**10,340**	**12,650**
Diesel	183,702	189,596	192,250	194,940	197,670
Gasoline	109,829	106,071	105,650	105,220	104,800
Total transport fuels[a]	299,440	303,610	307,220	310,510	315,120
Blending of biofuels	**1.97%**	**2.62%**	**3.03%**	**3.33%**	**4.00%**
EU goal[b]	2.75%	3.50%	4.25%	5.00%	5.75%

Supply and demand trends during 2006 – 2008

During 2007, EU production of both biodiesel and bioethanol increased, mainly driven by domestic consumption. Since the summer of 2008, however, the market for biodiesel in the EU has deteriorated substantially because of:

- The decline in fossil fuel prices; and
- Policy changes in Germany, the largest biodiesel market within the EU.

Competition from cheap imports from the United States, which substantially increased since 2007, put additional pressure on EU-produced biodiesel. While the production of biodiesel stagnated, EU bioethanol production surged by more than forty percent in 2008 (see graph below). The main reason for this significant increase was that new plants became operational or expanded production. The majority of this added volume was based on sugar beet derivatives as feedstock, which remained at relatively low prices compared with other feedstocks for biofuel production, such as corn and wheat. In addition, while the price of biodiesel is highly correlated with the crude oil price, the price of bioethanol is dictated by the sugar price. In effect, bioethanol prices didn't increase as significantly as fossil fuel prices, which made substitution of gasoline with bioethanol attractive during the first half of 2008. Furthermore, since EU imports of bioethanol leveled off during 2008 (see graph below), the EU bioethanol sector didn't suffer as much from imports as the EU biodiesel sector did.



Supply and demand trends for 2009 and 2010

For 2009, the introduction of countervailing and anti-dumping duties by the EU on imports of biodiesel from the United States is expected to dramatically reduce imports from the United States. The void is expected to be filled with higher domestic production and by imports from third country suppliers, namely Argentina, Indonesia and Malaysia. Also EU bioethanol production is expected to increase, but at a lower pace than in 2008. An important factor for this slowdown is the carry-over of bioethanol stocks from 2008. In 2010, production of biodiesel and bioethanol is forecast to continue its upward trend following EU demand for these transport fuels, driven by the national use mandates. Also biofuel imports, mostly biodiesel, are expected to recover following the anticipated growth in demand. The EC is proposing a balanced approach towards domestic biofuels production and imports in several recent policy papers (see policy section). Currently, the EC is determining sustainability criteria (SC), which could cause changes in the sourcing pattern of EU biofuel and feedstock importers as early as 2010.

Biogas

Biogas production in the EU in 2006 and 2007 amounted to about 4,900 and 5,900 Ktoe, respectively. In the EU, biogas from agricultural crops is almost exclusively produced by farmers in Germany. In 2007, biogas produced in the agricultural sector amounted to 36 percent of total biogas production in the EU. The other 64 percent of biogas production resulted from biogas collection and production from landfills and from sewage sludge. The agricultural production portion is growing rapidly. In Germany, an increasing portion of the agricultural biogas is inserted into the natural gas pipeline system. Another approach is to pipe the unprocessed biogas to combined power and heat plants which are installed at the location of heat consumption.

Solid Biomass

In the past few years, primary energy production from solid biomass in the EU has been steadily increasing to 66.4 Mtoe in 2007. Wood-based biomass is the main source for bioenergy in Europe, followed by waste and agricultural-based biomass. Most of the biomass is used for heat, and to a lesser extent, in combined heat and power (CHP) applications. The main producers in the EU are countries with large territories and large forestry resources such as France, Sweden, Germany, Finland and Poland. Biomass will play an increasingly important role in the EU energy market in meeting the 20 percent target for renewable use by 2020 and in the future reduction of CO_2 emissions in Europe.

Author Defined:

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 for petroleum diesel

= Ethanol produced from agricultural feedstock used as transport fuel

BtL = Biomass to liquid

= 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 million 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 joined the EU in/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

MWh = Mega Watt hours = 1,000 Kilo Watt hours (KWh)

TWh = Tera Watt hours = 1 billion Kilo Watt hours (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

EU Biofuels Policy

The EU Energy and Climate Change Package (CCP) was finally adopted by the Council on April 6, 2009. The Renewable Energy Directive (RED), which is part of this package, was completed in December 2008. The RED was published in the Official Journal (OJ) on June 5, 2009 and will enter into force 20 days later. The Directive has to be implemented 18 months after it is published, which means November 2010. By that time, Member States (MS) will have transposed the Directive into national law. MS will also have to submit national action plans by June 2010.

This package includes the "20/20/20" goals for 2020:

- A 20 percent reduction in green house gas (GHG) emissions compared to the levels of 1990.
- A 20 percent improvement in energy efficiency compared to current forecasts for 2020.
- A 20 percent share for renewable energy in the EU energy mix (consumption). Part of this 20 percent share is a 10 percent minimum target for renewable energy consumed in transport to be achieved by all MS. (Note: most, but not all, of this 10 percent will come from increased biofuel use.)

The goal for 20 percent renewable energy in total energy consumption is an overall EU goal, and RED sets different targets for different MS within this overall target. This means that some MS will have to reach much higher targets than the 20 percent renewable energy by 2020, whereas other MS will have much lower targets. Sweden will for example have to reach 49 percent, while the target for Malta is only 10 percent. The targets for the four largest economies of Europe, Germany, France, UK and Italy, are 18, 23, 15 and 17 percent respectively. These targets are set by the Commission depending on the current situation and the potential for growth in different MS. In contrast, the 10 percent target for renewable energy in transport is obligatory for all MS. The reason for this transport target is that this sector is projected to account for most of the growth in energy consumption, is going the wrong way on GHG emissions, and thus requires the most discipline. People are travelling

more, transportation of goods is increasing and cars are not getting efficient enough. Fuel use in transportation is growing faster than any other sector, and is anticipated to increase about 1 percent per year to 2020, according to the European Commission's model.

Biofuels have to meet certain criteria to be taken into account for the 10 percent goal:

- They must meet the sustainability criteria (see below). One of those criteria is they must reduce GHG emissions by at least 35 percent compared to fossil fuels beginning autumn 2010. From 2017 the reduction has to be 50 percent, and at least 60 percent for new installations.
- Second-generation biofuels will get a double credit. This means that biofuels made out of ligno-cellulosic, non-food cellulosic, waste and residue materials will count double towards the goal. This calculation is made on energy basis.
- Renewable electricity consumed by cars will be counted by a factor of 2.5, and like 2nd generation biofuels help countries achieve targets faster.

Sustainability Criteria

For biofuels to be eligible for financial supports they must comply with the sustainability criteria that are provided in the RED. These sustainability criteria have to be met by all biofuels whether produced within the Union or imported from a third country. Member States have 18 months, until December 2010, to implement the renewable energy package into national law. Most MS will use the full transition period.

Specific requirements are laid out for GHG emissions-saving criteria and a 35 percent threshold is set that later increases. Environmental sustainability criteria covering bio-diverse and high carbon-content lands are also specific. Other sustainability criteria are mentioned and reporting requirements are established, but no specific requirements or thresholds are laid down for them. These cover other environmental criteria (soil, water and air quality), and social criteria (focus on food price impact and adherence to ILO conventions).

Biofuels may not be made from raw material obtained from land with high biodiversity value such as primary forest and other wooded land, areas designated by law or by the relevant competent authority for nature protection purposes, highly biodiverse grassland or highly biodiverse non-grassland. The Commission will establish the criteria and geographic ranges to determine which forest lands, grasslands and other lands this shall cover. These criteria apply on land that had this status on or after January 2008. Biofuels shall not be made from raw materials produced on land with high carbon stock such as wetlands, peatlands or continuously forested areas. The Commission is currently working on the implementing rules.

The Commission is also working on finalizing the three elements of the sustainability scheme that require further details. This is achieved through the EU comitology (committee system) process:

- Establish criteria and geographic ranges for biodiverse grassland.
- Establish detailed definitions of severely degraded land and heavily contaminated land.
- Establish the list of social/environmental items that companies have to report on in addition to

the mandatory criteria.

The agricultural raw materials shall also be produced in accordance with the minimum requirements for good agricultural and environmental conditions that are established in the common rules for direct support schemes under the common agricultural policy (CAP) (Article 17 § 6 of the RED).

GHG emissions

The biofuel must have a GHG emission savings of at least 35 percent once the RED is implemented through national legislation. From 2017, the GHG emission saving has to be 50 percent. For biofuels produced in installations for which production starts from 2017 and onwards, the GHG savings must be 60 percent. GHG emission savings are calculated using lifecycle analysis and following methodologies described in RED annexes.

The European Commission's Joint Research Center (JRC) has been working on defining the GHG emission savings for different raw materials and selected production and supply pathways and the result of these are presented in the RED annex. JRC has calculated GHG emissions for cultivation, processing and transport and distribution for the different raw materials, and used this for calculation of the GHG emission savings. Net carbon emissions from land-use change are not yet included.

It is challenging trying to document GHG emissions on different biofuels using different production processes for different countries. The Commission has looked into several options regarding what kind of GHG emissions certification they would need to accept a product as being produced according to the sustainability criteria. The three types of "chain of custody" approaches discussed, in declining level of strictness, are identity preservation, mass balance, and confirmation from the producer that the product was produced in a manner that meets minimum GHG emission savings sustainability criteria.

The option the Commission will finally adopt is reportedly the "mass balance system". This system means that each container must clearly identify how much of each kind of fuel it contains (i.e. biodiesel (B100), 40 percent from rapeseed oil, 40 percent from animal fats, and 20 percent from waste oils), and when anything is taken out of the container it has to be clearly marked what is still in the container. MS are responsible for not counting anything as biofuel toward goals, mandates, and eligible for tax credits that does not fulfill sustainability criteria for biofuel. MS have to establish a checklist. MS are not allowed to have different (higher or lower) sustainability criteria than those set by the Commission, and they have to accept all certifications systems that are recognized by the Commission. However, with each MS having different checklists this means that there will be 27 different national certification schemes that the Commission would like to have registered and recognized – applying to EU members as well as Third Countries.

The mass balance system means that it will not be possible to mix biofuels with different GHG emission savings values and get an averaged value for a single container in order to meet the threshold value (i.e. if two biofuels are mixed, one with a GHG value above 35 percent and one with a GHG value below 35 percent, only the one that has a GHG value above the 35 percent threshold can be counted toward goal fulfillment, mandates and tax credits). This eliminates the market for biofuels

that fall below the GHG emission savings threshold.

	Typical GHG[1] savings	Default GHG[2] savings
Rape seed biodiesel	45%	38%
Soy bean biodiesel	40%	31%
Sun flower biodiesel	58%	51%
Palm oil biodiesel (Process not specified)	36%	19%
Palm oil biodiesel (process with methane capture at oil mill)	62%	56%
Sugar beet ethanol	61%	52%
Sugar cane ethanol	71%	71%
Waste vegetable or animal oil biodiesel	88%	83%

Source: European Commission, RED (Indirect land use is not included) [1] 'Typical value' means an estimate of the representative GHG emission savings for a particular biofuel production pathway

[2] 'Default value' means a value derived from a typical value by the application of pre-determined factors and that may, in circumstances specified in this Directive, be used in place of an actual value.

According to the RED, biodiesel made from soy oil does not automatically comply with the GHG emission criteria. Omitting any adjustment for indirect land use, the RED's GHG emission savings default (reference) value for soy diesel is 31 percent, which is below the minimum GHG threshold. On closer examination, this value was calculated using a pathway where soybeans are first shipped from Brazil, then transformed into soy oil and biodiesel in the EU. Using lifecycle analysis, the value for soy-based biodiesel produced in and shipped from the US would be different because it has a different pathway. According to EPA, US soy-based biodiesel has a GHG emission savings value of 80 when it is produced and consumed in the United States. If it is shipped to and consumed in the EU that value falls only slightly.

Under the RED, it is possible to use actual numbers and achieve a GHG emission saving that is above the required 35 percent. It is always possible to claim the default value without any supporting documentation.

According to Commission officials it should not be a problem for US soy-based biodiesel to comply with the standards that are currently being implemented, but it could be more difficult in the future, when the GHG emission savings threshold increases to 50 percent by 2017, and if or when indirect land use change (ILUC) is taken into account. The higher GHG emission savings threshold of 50 percent is also a potential difficulty for EU-produced rapeseed biodiesel. The RED has made it clear that biofuels GHG emission savings values can be reviewed and updated as new information is made available.

There are some concerns that this system of calculating GHG savings, and deciding what feedstocks are qualified and which ones are not, could be a possible way for the EU to protect its industry.

Indirect Land Use Change (ILUC)

The EC considers that the calculation and inclusion of indirect land use change (ILUC) in GHG emission savings values is appropriate when crops used for biofuel production are grown on arable land that can be used to grow food crops, and this food crop production then moves to other lands

(namely pasture, grasslands and forested lands) which were not used to produce crops before. The concern is that the conversion of new lands would lead to additional GHG releases into the atmosphere and that those indirect releases must be counted. It follows that the inclusion of ILUC would lower the GHG savings values for most first generation biofuels.

The Commission hopes to develop a concrete methodology to calculate GHG emissions caused by indirect land use changes and adjust current published values. The Commission is now in the starting process of developing implementing rules for ILUC and will most likely finish this by March 2010. A report on the impact of indirect land use change on GHG emission savings values is required by December 2010. As the MS are obliged to have to have their Action Plans for renewables ready by June 2010, it should be finished before then.

Trade Policy

In the projections for biofuels, the Commission is making the assumption that even though it would be agronomically possible to domestically grow all the feedstock needed to reach the goal of 10 percent renewable energy for transport by 2020, some of the feedstock and biofuels will have be imported to reduce price pressure on EU feedstock. The Commission is expecting about 70 percent of the feedstock to be produced internally and 30 percent of the feedstock to be imported.

There are no specific codes for biofuels in international trade nomenclature. Individual trade codes used by the EU and the United States include biofuels as well as other products and so it is impossible to get a close fix on trade volumes and values using codes alone. The codes in the EU system refer to the product regardless of its final use. For ethanol the two main codes are 220710 for undenatured ethanol and 220720 for denatured ethanol. Blends with petrol may also appear under other codes depending on the proportion of the mix. For biodiesel, there is a code that covers fatty-acid mono-alkyl esters (FAMAE) that was introduced in January 2008. However other forms of biodiesel could still enter under other codes depending on the chemical composition.

HS Code	Description	Duty Rate
38249091	FAMAE	6.5% (plus the provisional anti-dumping duty. See chapter on B99)
220710	Undenatured ethanol	€19.2/hl
220720	Denatured ethanol	€10.2/hl

Biodiesel

B99

Following a complaint lodged by the European Biodiesel Board (EBB), on June 13, 2008, the European Commission initiated anti-subsidy and anti-dumping investigations on imports of biodiesel from the United States. U.S. industry has been actively engaged in the investigation.

On March 12, 2009, the Commission published its Regulation 193/2009 and Regulation 194/2009, containing provisional anti-dumping and countervailing duty measures on imports of biodiesel from the United States. The Regulations and duties entered into force on March 13. They apply for a maximum of 6 months as they are provisional measures. On May 28 a majority of MS delegates

sitting in the EU anti-dumping committee backed the Commission proposal to extend the countervailing and anti-dumping duties for a 5-year period. The next steps in the procedure are approval of the definitive measures by the Council of Ministers in June and publication before July 12th.

The Commission notes that during the period analyzed, imports from the United States increased their market share from 0.4 percent in 2005 to 17.2 percent. The EBB claims that this increase is due to exporters taking advantage of a U.S. federal excise tax credit for biodiesel. Allegedly, exporters import biodiesel from a third country, add a minimal amount of petroleum diesel, claim the credit and export the product (the so-called "splash and dash").

EU Imports of US Biodiesel

Imports from U.S.	**2004**	**2005**	**2006**	**2007**	**IP**
Tons	2,634	11,504	50,838	730,922	1,137,152
Index 2005 = 100	23	100	442	6,354	9,885
Market share (%)	0.1	0.4	1.0	11.0	17.2
Index 2005 = 100	25	100	250	2,750	4,300

Note: IP= Investigation Period 'April 1, 2007 to March 31, 2008' Source: USA export statistics.

The Commission has calculated provisional (company-specific) anti-dumping duties ranging from 10 to 82 cents per gallon (equating to dumping margins of 3.3 to 27 per cent) and countervailing duties ranging from 89 to 99 cents per gallon (equating to subsidization margins of 29.5 to 33.1 per cent).

Bioethanol

Quotas and Import tariffs

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.

EU Import Policy

In the EC documents "A Strategy for Biofuels" and "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

Summary

The market for biodiesel in the EU has deteriorated substantially since summer of 2008 because of:

- The decline in fossil fuel prices; and
- Policy changes in Germany, the largest biodiesel market within the EU.

Competition from cheap imports from the United States, which substantially increased since 2007, put additional pressure on EU produced biodiesel.

The introduction of EU countervailing and antidumping duties on imports of biodiesel from the United States is expected to dramatically reduce EU biodiesel imports from the United States. The void is expected to be filled with higher domestic production of biodiesel in the EU and increased biodiesel imports, particularly from Argentina, Indonesia, and Malaysia.

The discussions about the EU climate change package and possible mandatory biofuel targets have prompted a number of MS to put in place goals, mandates, and tax incentives. As a result, biodiesel production capacity, production, and consumption increased in a number of MS that did not have a strong biodiesel history in the past. As a result of ambitious replacement goals, France may overtake Germany as the biggest biodiesel market in 2010 for the first time.

The EU sustainability criteria (SC) that are part of the RED are expected to be implemented in the MS through national legislation by Fall 2010. In the long run, in the biodiesel sector they are expected to have two main consequences. One, they will favor the use of feedstock that is certified to be sustainable according to an EU-accredited system. As the SC are also applied to imports, this could cause changes in the sourcing pattern of EU biodiesel and feedstock importers. Two, the SC might push the use of animal fat and recycled cooking oils, as these have better GHG saving values than virgin vegetable oils.

The required feedstock for the anticipated production in 2010, 9.5 MMT of biodiesel, is estimated at about 6.8 MMT of rapeseed oil and 2.9 MMT of other oils, of which 1.2 MMT is expected to be soybean oil.

EU Production, Supply and Demand Table

The European Union is the biggest producer and consumer of biodiesel in the world. Biodiesel is also the most important biofuel consumed in the EU, representing about 77 percent 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. At the time, the rapid expansion was driven by an increasing crude oil price, the *Blair House Agreement* [2] and resulting provisions in the EU's set-aside scheme, and generous tax incentives, mainly in Germany.

EU Biodiesel Production, Supply and Demand (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Production	4,718	5,945	6,040	8,250	9,450
Imports	62	925	2,450	1,300	2,200

Exports	0	0	160	50	50
Consumption	4,780	6,870	8,330	9,500	11,600

EU Biodiesel Production, Supply and Demand (Million Liters)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Production	5,360	6,750	6,860	9,375	10,740
Imports	70	1,050	2,785	1,480	2,500
Exports	0	0	180	60	60
Consumption	5,430	7,800	9,465	10,850	13,180

r = revised / e = estimate / f = forecast 1 MT = 1,136 liters Source: EU FAS Posts

Production Capacity

The EU biodiesel capacity expanded rapidly from 2005 to 2007. However, this slowed in 2008. As a result of the deteriorating markets especially in Germany, many projected new plants never made it past the planning stage. Spain, France, the Benelux, and Italy reported the largest production capacity increases in 2008. For 2009 and 2010, further capacity increases are expected, especially in countries with new or increasing biofuel mandates.

EU Biodiesel Production - Number of Plants and Capacity (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Number of Plants	119	176	215	230	255
Capacity					
In 1,000 MT	5,922	11,300	16,000	18,400	19,500
In Million Liters	6,730	12,840	18,180	20,910	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.

Under current market conditions it is questionable that the EU biodiesel market can support all existing - let alone projected - production capacity, since the projected increase in the EU biodiesel consumption is significantly smaller than the current 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 groups of farmers to 500,000 MT owned by large multi-national companies. 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, the best chances of survival are expected for those plants that:

- have their own oil mill, or are affiliated with or at least have contracts with an oil mill;
- are able to adapt their feedstock mix to price fluctuations and differentials;
- 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; or
- 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.

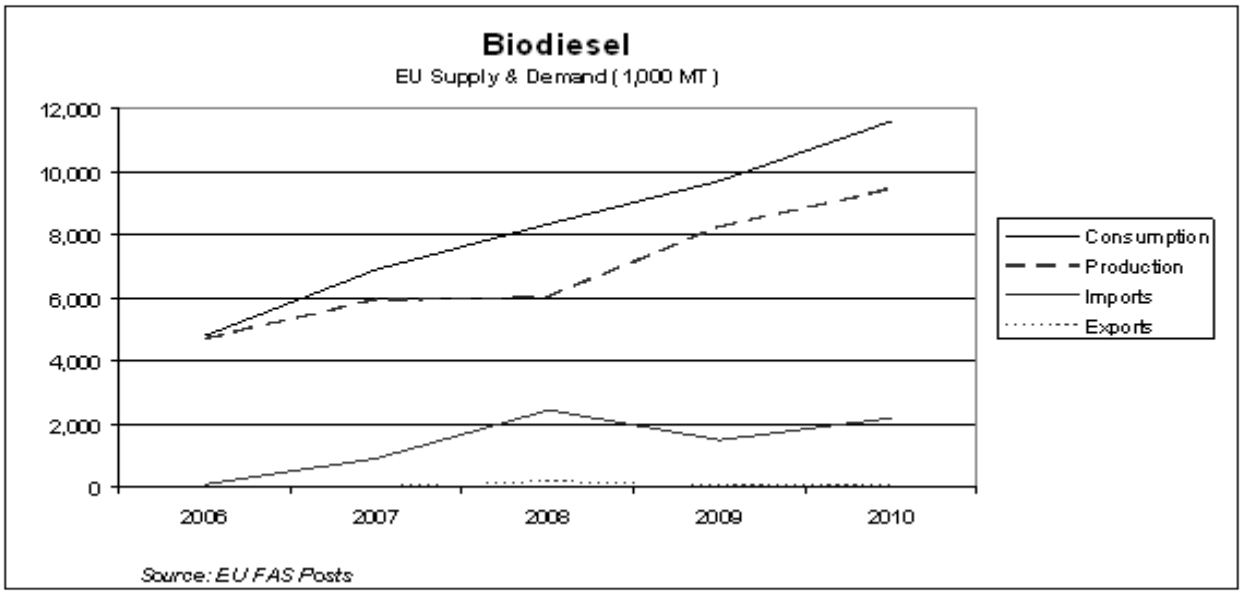
2007 and 2008 saw the first cases of companies closing their operation or declaring insolvency. This occurred in the U.K., Austria, and Germany.

Production

In 2006, the top three producing MS (Germany, France, and Italy) together accounted for 80 percent of the EU's biodiesel production. In 2008, the share of the top three producing MS dropped to 68 percent and the share is expected to drop to 60 percent by 2010. This is a clear indication that the production of biodiesel is gradually increasing in other MS, as these are increasing their domestic production to meet domestic biofuel mandates.

EU Biodiesel Production – Main Producers (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Germany	2,400	2,890	2,690	2,460	2,660
France	570	1,150	2,000	2,100	2,300
Italy	600	470	750	1,100	1,500
Benelux	43	251	500	700	1,100
Others	1,105	1,184	120	1,900	2,100
Total	4,718	5,945	6,040	8,250	9,650

Source: EU FAS Posts



Feedstock Use

In contrast to the United States, where about 50 percent 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

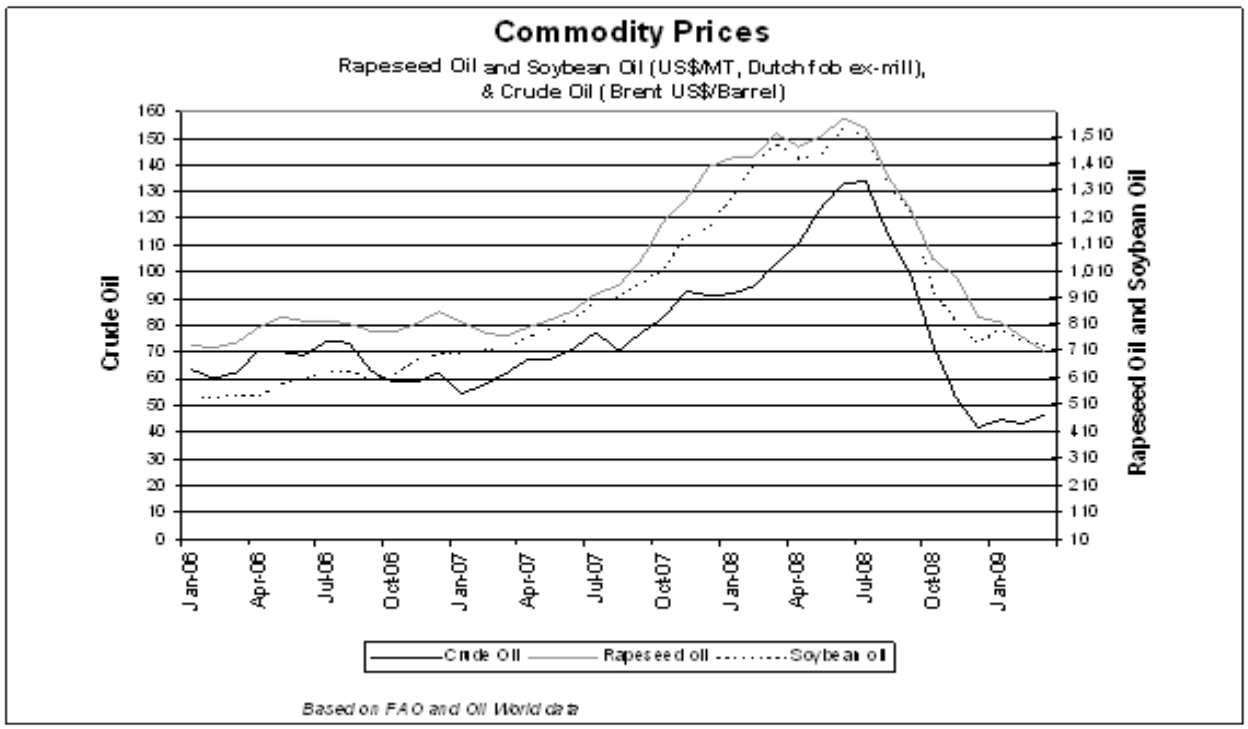
EU biodiesel standard DIN EN 14214. This standard was developed based on engine compatibility studies carried out by EU car manufacturers. Soybean-based biodiesel does not comply with the iodine value prescribed by this standard (the iodine value functions as a measure for oxidation stability.) In addition, 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 as feedstocks as virgin vegetable oils. However, with the high vegetable oil prices at the end of 2007 and the first half of 2008, recycled vegetable oils and animal fat formed a cheaper alternative feedstock and their use increased. The introduction of sustainability criteria for biofuels and their feedstocks is expected to give these two feedstocks an additional push in the future, as they have a higher GHG emission savings value.

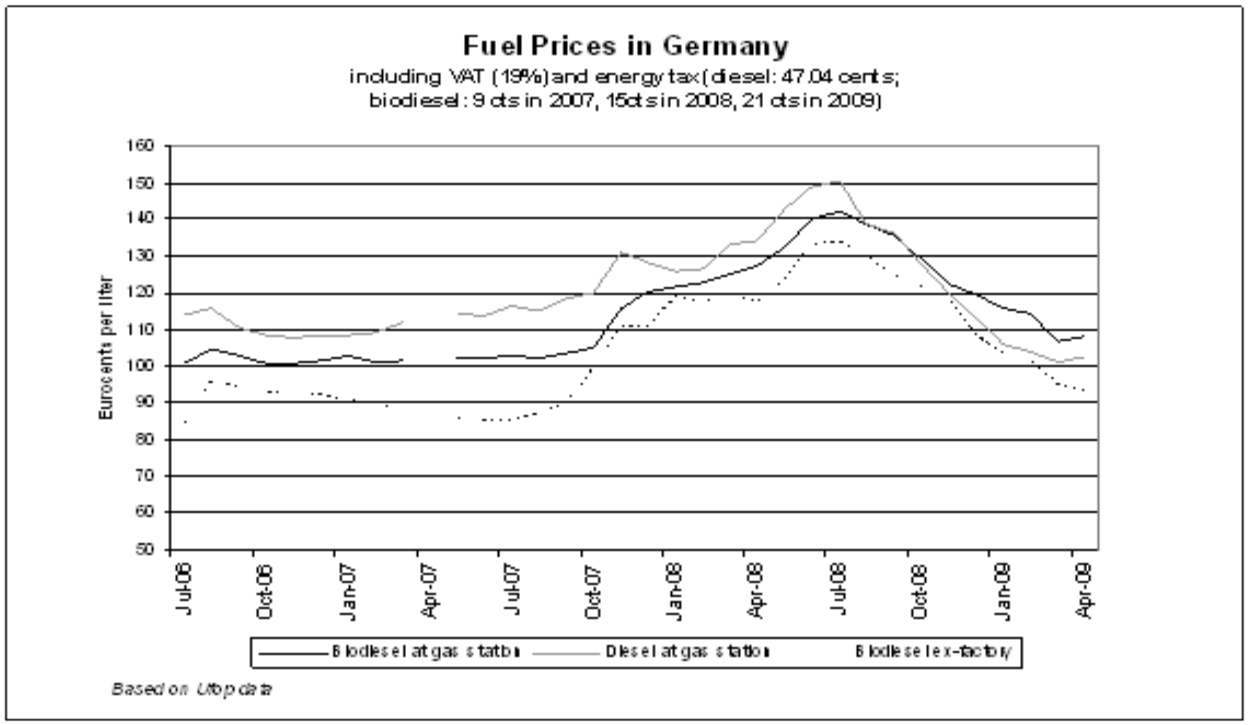
Feedstock Use for Biodiesel Production (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Rapeseed Oil	3,400	4,360	4,300	5,790	6,800
Soybean oil	750	900	870	1,100	1,200
Palm oil	150	300	300	450	500
Sunflower	180	200	200	300	450
Other and not attributed	110	20	40	50	55
Subtotal Vegetable oils	**4,590**	**5,780**	**5,710**	**7,690**	**9,005**
Recycled Vegetable Oil	120	135	200	400	450
Animal Fats	10	35	130	160	200
Grand total	**4,720**	**5,950**	**6,040**	**8,250**	**9,655**

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

Consumption

In 2008, Germany, France, Italy, the U.K., and Austria were the largest biodiesel consumers in the EU. For 2009, EU consumption is forecast to further increase to 9.5 MMT (10.8 billion liters), despite the economic crisis. The increase is driven almost exclusively by MS mandates and tax incentives. For 2010 further consumption increases are projected, most prominently in Spain, France, Italy, and the Benelux countries, again driven by mandates. The projections are based on the assumption that the strong link between crude, rapeseed, and soybean oil (see chart below) will continue. The crude oil price would have to increase substantially more than vegetable oil prices in the future for biodiesel to be competitive on a price basis without tax incentives or mandates.





Germany is an exception to the overall trend of increasing consumption in 2008 and 2009. Traditionally, the German tax incentive-based support system enabled pure biodiesel (B100) to successfully compete with mineral oil-based diesel. In 2006, Germany began the process of transferring from tax incentives to use mandates and gradually increased the energy tax on B100. The scheduled 2nd and 3rd steps in the increase of fuel tax on biodiesel went into effect on January 1, 2008 and 2009, respectively. This essentially dried up the demand for biodiesel outside the mandate, as B100 was no longer price competitive in the current market situation with low fossil fuel prices. Therefore, B100 consumption will largely be limited to the farm sector, which continues to benefit from a complete tax reduction. As a result, the majority of biodiesel consumption in Germany will be

mandate driven. However, the current mandate is not high enough to compensate for the decrease in tax incentives. Consequently, overall German biodiesel consumption is expected to decline in 2009. Nonetheless, Germany is expected to continue to be the largest biodiesel consumer in the EU at least in 2009. In 2010, the German overall biofuel mandate will increase from 5.25 to 6.25 percent. It is expected that biodiesel will be used to fill most of the difference between the fuel specific mandates (4.4 % for biodiesel and 2.8 % for bioethanol) and the overall mandate. However, the French biofuel use objective for 2010 is more ambitious and set at 7 percent. As a result, France may overtake Germany as the biggest biodiesel market in 2010 for the first time.

EU Biodiesel Consumption – Main Consumers (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Germany	2,875	3,133	2,650	2,400	2,600
France	631	1,300	2,200	2,300	2,700
Italy	220	202	789	1,200	1,500
United Kingdom	220	260	507	520	540
Austria	321	370	430	435	440
Benelux	27	398	365	450	670
Greece	135	300	330	220	252
Spain	63	292	213	760	1,200
Romania	25	50	130	150	215
Poland	15	20	124	350	550
Others	248	545	592	715	933
Total	4,780	6,870	8,330	9,500	11,600

Source: EU FAS Posts

Biodiesel Consumption Lags EU Goals

While biodiesel consumption is increasing in the EU, the biodiesel share of total diesel consumption is not expected to reach the current (non binding) EU targets listed in the table below. On an energy basis, the biodiesel share (including both blending as well as use in the form of B100) of total EU diesel fuel consumption during 2008 was 3.59 percent. As a result of increasing consumption, this share is forecast to rise to about 4.81 percent in 2010.

EU Biodiesel and Diesel Consumption (Ktoe)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Biodiesel	4,110	5,900	7,160	8,170	9,980
Diesel	183,702	189,596	192,250	194,940	197,670
Biodiesel share	2.19%	3.02%	3.59%	4.02%	4.80%
Indicative EU goal (EU Directive 2003/30)	2.75%	3.50%	4.25%	5.00%	5.75%

Diesel use is based on Eurostat data for 2006 + 2007 and on an estimated annual increase of 1.4% for 2008-2010. Source: EU FAS Posts.

Trade

Biodiesel imports have surged from 62,000 MT in 2006 to 2.4 MMT in 2008. The majority (89 %) of imports consisted of B99 from the United States. There is a huge discrepancy in the trade data of

various sources. The U.S. Department of Commerce reports 2.2 MMT of U.S. biodiesel exports to the EU, which is about 1 MMT more than what the EU reports as imports under CN code 3824 90 91. This suggests that some biodiesel enters the EU under different customs codes. Other major suppliers to the EU in 2008 included Indonesia (145,500MT), Argentina (66,400 MT), and Malaysia (34,000 MT),

A specific customs code for biodiesel (3824 90 91) was introduced in the EU only in January 2008. Prior to this date, biodiesel entering the EU was subsumed under the CN code 38 24 90 98 (other chemicals). (Note: CN stands for "Combined Nomenclature" and is the equivalent of the "Harmonized System" used in the United States.) Therefore, biodiesel imports prior to 2008 are estimated based on industry information.

Expected effects of the EU countervailing duties on U.S. B99

In March 2009, the EU imposed countervailing and antidumping duties on biodiesel imports from the United States (see policy section of this report). These are expected to largely eliminate EU biodiesel imports from the United States. While EU biodiesel producers will benefit from the decreasing U.S. exports, other biodiesel exporting countries such as Argentina, Indonesia, Malaysia, and Canada are also expected to benefit from the void.

Among these, Argentina has the largest potential to substantially increase its biodiesel exports to the EU. In fact, EU industry sources indicate that EU biodiesel imports from Argentina have surged since March 2009.

In previous years, large amounts of Argentine biodiesel were shipped through the United States to the EU. For example, in 2008, U.S. imports of biodiesel from Argentina totaled 540,600 MT. However, imports fell dramatically after the United States changed the provisions of blender's credit. Therefore, these Argentine biodiesel amounts are now available to be shipped directly to the EU. In addition, Argentine biodiesel capacity continues to grow. It was estimated at 1.4 MMT at the end of 2008 and is expected to increase over the course of 2009 to 2.4 MMT. All of these plants are registered for export rather than for selling on the domestic Argentine market.

Furthermore, the competitiveness of Argentine biodiesel on the EU market is enhanced by its favorable treatment vis-à-vis soybean oil under the Argentine differential export tax (DET) system. Assuming similar conversion costs for biodiesel plants in the EU and Argentina, the DET makes it more attractive for EU customers to buy the finished biodiesel than buying Argentine soybean oil and converting it into biodiesel in the EU.

While reports about the drought-related reduction in the Argentine 2009 soybean crop suggest that Argentina may not be able to use its full potential in 2009, the EU will increasingly have to face Argentina as a strong competitor to its domestically produced biodiesel in the foreseeable future.

Expected Impact of Sustainability Criteria on the Biodiesel Sector

As part of the EU renewable energy package the EU is currently developing sustainability criteria (SC) for biofuels under the RED (see policy section of this report). Depending on the details of the final

criteria regarding minimum GHG saving values and applied default values, these criteria could in the long term have an impact on the origin of imports of biodiesel or feedstocks as they will favor sources that produce according to an EU approved sustainability scheme. In addition, the SC might also give a push to biodiesel from animal fat and recycled cooking oil, as these feedstocks have a better GHG balance. This is because GHG emissions resulting for example from fertilizer application in oilseed production are not counted when the vegetable oil is recycled.

However, the effects of a minimum threshold for GHG emission savings and the application of other sustainability criteria are only expected to be felt in late 2010 and beyond. This expectation is based on indications that most MS will use the full 18 months transition period (likely until December 2010) to implement the renewable energy package into national law. However, Germany has announced that it will implement the necessary national laws as soon as possible in 2009 and apply the SC starting January 2010. Germany has already notified draft legislation on sustainability criteria for biomass used in electricity and heat production. However, it is likely to take a few months until certification systems are in place and functioning.

Pure Vegetable Oil

In the EU, pure vegetable oil (PVO) is mainly used in agriculture and by company fleets. PVO can be used as a biofuel without conversion to biodiesel but only in specially-modified engines. 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.

EU consumption of PVO as biofuel mainly consists of rapeseed oil and soybean oil. The large decline of its use since 2006 is a result of tax changes in Germany, where 95 % of the EU consumption occurred (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.

EU Consumption of pure vegetable oil as a biofuel (1,000 MT)

	2006	2007[e]	2008[e]	2009[f]	2010[f]
Soybean oil	500	250	100	20	20
Rapeseed Oil	605	540	340	100	100
Total	**1,105**	**790**	**440**	**120**	**120**

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. Source: EU FAS posts.

Germany is currently discussing options to allow counting hydrogenated vegetable oils against its biofuels mandates. If this were to be put in practice, the use of vegetable oils in 2010 could be about 580,000 MT higher than projected.

Bioethanol

Summary

In 2008, EU bioethanol production surged by more than forty percent to 2.1 MMT. There were two main reasons for this significant increase:

- New plants became operational or expanded production. The majority of this added production volume was based on sugar beet derivatives, which were relatively price competitive.
- As bioethanol prices didn't increase as significantly as fossil fuel prices, substitution of gasoline with bioethanol was attractive during the first half of 2008.

During 2009, EU bioethanol production is expected to increase at a lower pace mainly as a result of the financial crisis, which reduced demand for transport fuels and more importantly, depressed crude oil prices. Another factor which is hampering further expansion of EU bioethanol production is the carry-over of bioethanol stocks from 2008.

In 2010, production is forecast to regain its upward trend following the increased demand for biofuels in the EU. Supported by the national mandates, bioethanol consumption is forecast to grow further to about 4.0 MMT. The required feedstock for the anticipated production in 2010, 3.0 MMT of bioethanol, is estimated at about 8 MMT of cereals, and a volume of sugar beet derivatives equivalent to 1.5 MMT of refined sugar.

During 2007 and 2008, bioethanol imports grew significantly to nearly 900,000 MT. The majority of the bioethanol is imported by the UK, Sweden, and the Benelux countries through the port of Rotterdam. During 2009, EU bioethanol imports are expected to stabilize due to the stagnating demand in the EU. A recovery is expected in 2010, following the anticipated growth in demand. Currently the European Commission (EC) is determining criteria for sustainability (see policy section of this report), but these are not expected to negatively affect bioethanol produced from sugarcane.

EU 27 Production, Supply and Demand Table

Compared to the United States and Brazil, the EU is only a minor producer of bioethanol. Bioethanol represented about 24 percent of the total biofuels market in the transport sector in 2008.

EU Bioethanol Production, Supply and Demand (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Production	1,290	1,450	2,100	2,400	3,000
Imports	180	790	870	880	1,000
Exports	30	35	40	45	50
Consumption*	1,440	2,205	2,930	3,235	3,950

EU Bioethanol Production, Supply and Demand (Million Liters)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**

Production	1,635	1,840	2,660	3,040	3,800
Imports	230	1,000	1,105	1,115	1,270
Exports	38	44	51	57	63
Consumption*	1,825	2,795	3,715	4,100	5,010

r = revised / e = estimate / f = forecast * Includes stock building. 1 MT = 1,267 liters Source: EU FAS Posts and statistics of Eurostat, World Trade Atlas and the European Bioethanol Fuel Association (eBIO).

Production Capacity

EU Bioethanol Production - Number of Plants and Capacity (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Number of Plants	37	52	60	65	75
Capacity					
In 1,000 MT	1,750	3,000	4,700	5,300	7,000
In Million Liters	2,220	3,800	5,960	6,720	8,870

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.

Bioethanol production capacity is forecast to increase from 1.75 MMT in 2006 to 7.0 MMT in 2010. It is anticipated that only a part of these investment plans will be put in practice. The majority of the production capacity has been installed in France, Germany, Spain, and Poland. In 2007, only about half 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 competitive bioethanol imports from Brazil.

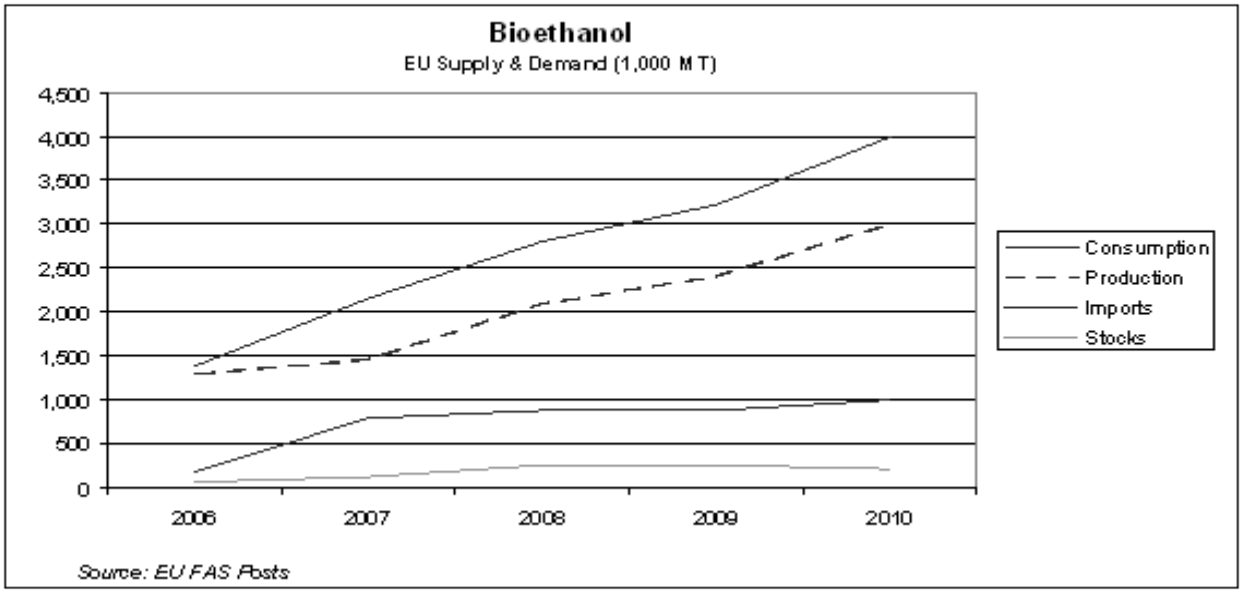
Production

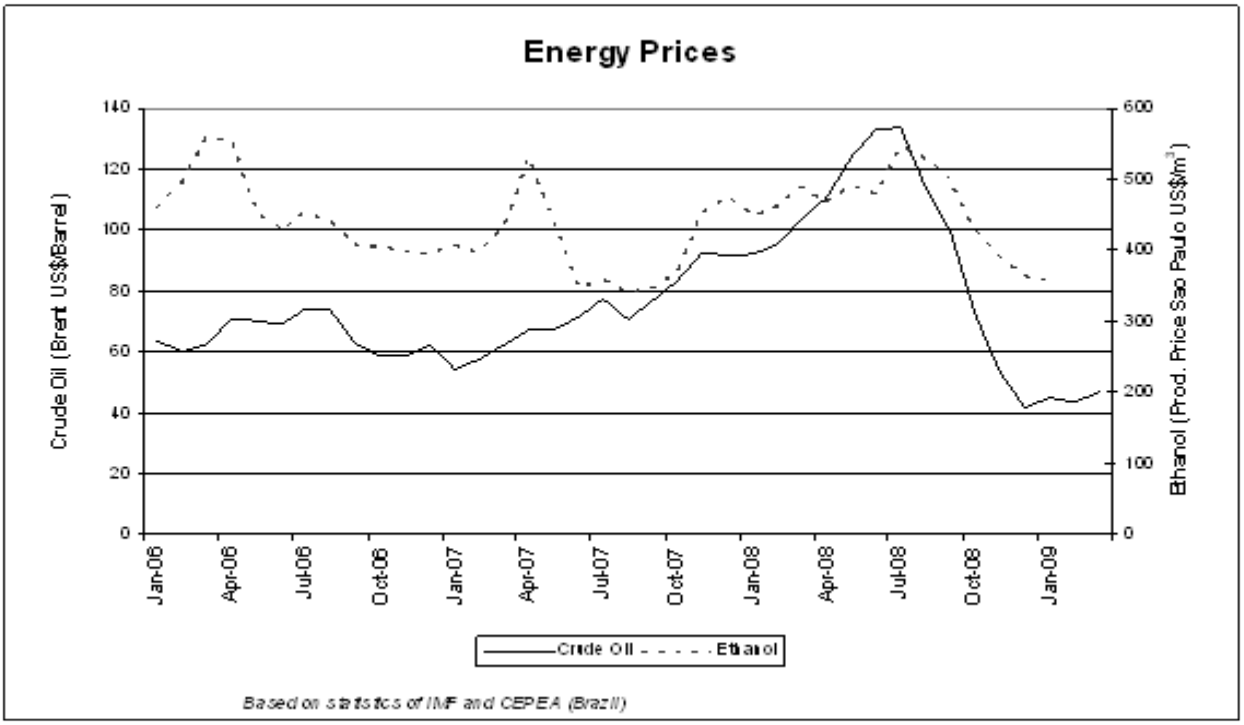
EU Bioethanol Production – Main Producers (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
France	235	420	630	700	700
Germany	340	314	458	500	500
Benelux	12	25	62	250	450
Poland	128	100	174	300	400
United Kingdom	0	0	40	140	320
Spain	320	284	240	270	300
Other	255	307	496	240	330
Total	1,290	1,450	2,100	2,400	3,000

Source: EU FAS Posts

In 2008, EU bioethanol production surged by more than forty percent to 2.1 MMT (see graph below). On an energy basis, this is equivalent to 16.7 million barrels of crude oil. The most significant production increases were reported in France, Germany and Poland. The main reason for this significant increase was that new plants became operational or expanded production in these countries. In France and Germany, production expansion was mainly reported for ethanol using sugar beet derivatives as feed stock. Another important factor for the production boost was the high crude oil price (see graph below) which made substitution, or blending, of gasoline with bioethanol attractive. During the first half of 2008, bioethanol prices rose, but at a lower pace than fossil fuel

prices. While the price of biodiesel is highly correlated with the crude oil price, the price of bioethanol is mainly dictated by the sugar price. An exception to the positive trend reported in the EU was production in Spain, which declined for the second successive year. The relative high grain prices compared to Central and Northwestern Europe had a detrimental effect on profit margins in this Member State.





During 2009, EU bioethanol production is expected to increase at a lower pace, mainly as a result of the financial crisis, which reduced demand for transport fuels and more importantly, depressed crude oil prices. The low crude oil price made substitution of gasoline with bioethanol unattractive for oil companies. In Belgium for instance, producers have been unable to sell their production domestically as the tax break for blending appears to be insufficient. In France and Spain, however, the tax cut is reportedly still sufficient for meeting the increased costs for blending. Another factor which is

hampering further expansion of domestic bioethanol production is the carry-over of bioethanol stocks from 2008. In the port of Rotterdam, stocks reportedly built up during last year. The storage capacity for ethanol in this port is estimated at about 400,000 MT.

In 2009, the EU bioethanol industry will possibly face the same problems as the EU biodiesel industry previously experienced during 2007 and 2008: an oversupply on the market due to elevated domestic production, slackening demand and competitive imports (see Biodiesel section of this report). In order to cope with this market situation, some bioethanol producers reportedly switched to producing ethanol for human consumption or for use by the chemical and pharmaceutical industries. 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. At the moment, plants are owned by large multinationals as well as by larger and midsized domestic cooperatives and processors, such as corn wet millers and sugar producers.

In 2010, production is forecast to regain its upward trend following the increased demand for biofuels in the EU (see Consumption). During 2009 - 2010, production in France, Germany and Spain is expected to increase only moderately, a major expansion is forecast in the UK and the Benelux countries. A wheat-based bioethanol plant with a capacity of about 300,000 MT is expected to open in the UK in November 2009 and a similarly sized venture in late 2010 (see FAS EU Grain & Feed Annual Report). 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 port of Rotterdam, a bioethanol plant with a capacity of about 450,000 MT is expected to start production in 2010.

Feedstock Use

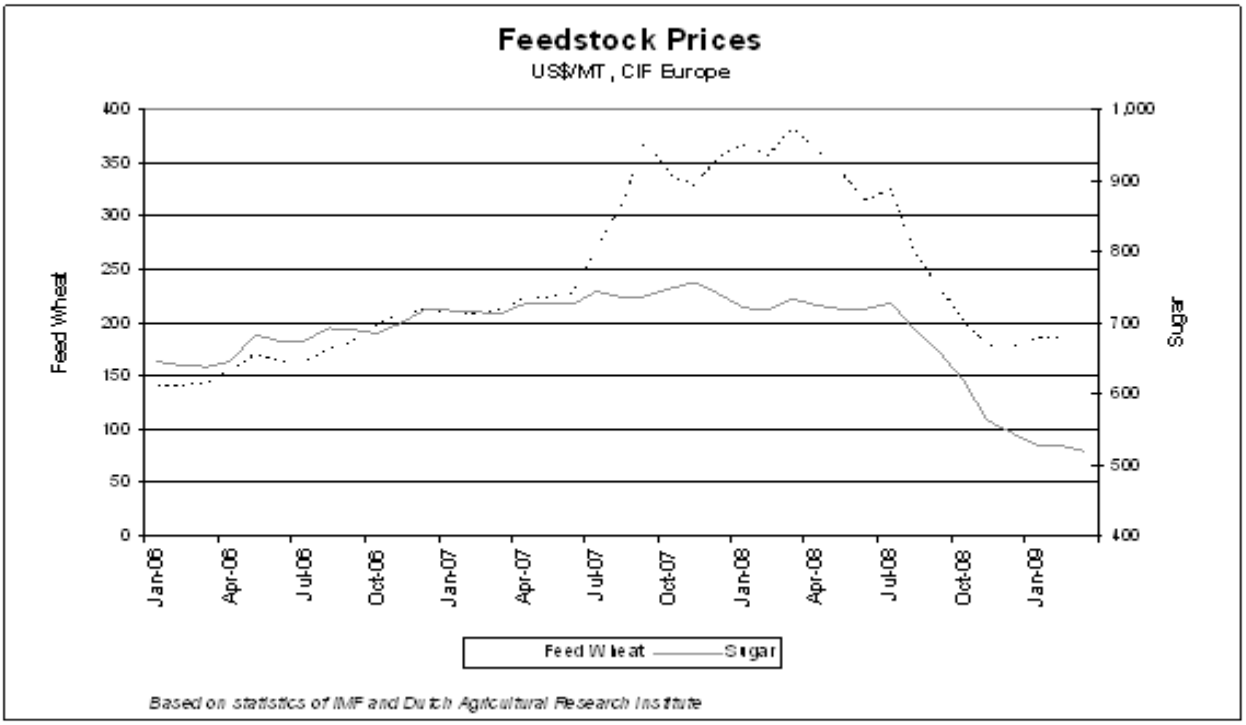
Feedstock Use for Bioethanol Production (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Wheat	2,500	2,500	3,200	3,900	5,000
Corn	600	700	1,600	1,800	2,500
Barley & Rye	500	300	500	500	500
Sugar*	650	1,000	1,300	1,400	1,500

Note: Data for feedstock use is not available. The figures above represent estimates by EU FAS posts. * Expressed on basis of refined sugar, based on a conversion factor of 0.42.

In the EU, bioethanol is mainly produced from wheat, corn and sugar beet derivatives. A limited volume of bioethanol is produced from barley, rye and the surplus of wine alcohol. The use of corn is expected to increase in Spain and Central Europe, mainly in Hungary and Poland. Wheat is expected to remain the major feedstock in Northwestern Europe. Strong expansion for bioethanol production from sugar beet derivatives is expected in France, Germany and Belgium (see FAS EU Sugar Annual).

During the second half of 2007 and the first half of 2008, wheat prices were at a high level (see graph below), which made sugar beet derivatives, mainly sugar syrup, a favorable feedstock for bioethanol production. During 2008/2009, an abundance of wheat reduced cereal prices, but sugar prices fell at the same pace. Due to the CAP Reforms, sugar prices are projected to remain at low levels during 2009 and 2010. As a consequence, sugar beet derivatives are expected to remain a competitive

feedstock compared to wheat during this period. In the long term, however, domestic sugar prices could rise as a consequence of shrinking EU production.



The availability of cereals for bioethanol production is expected to be limited in the EU as bioethanol producers will need to compete with feed compounders. In general, positive margins on bioethanol production with cereals as feedstock are anticipated during good crop years, with an oversupply on the EU market. The required feedstock for the anticipated production in 2010, 3.0 MMT of bioethanol, is estimated at about 8 MMT of cereals, and a volume of sugar beet derivatives equivalent to 1.5 MMT of refined sugar.

Consumption

EU bioethanol consumption in 2006 and 2007 was estimated at 1.4 MMT and 2.2 MMT, respectively. Germany, France and Sweden were the main consumers during this period. In Sweden, most of the bioethanol consumed originated from Brazil, while in the other two main markets, bioethanol is predominantly produced domestically.

In 2008, EU consumption followed its upward trend and increased to 2.9 MMT. Consumption was supported by the high crude oil price. A part of the bioethanol produced has, however, been stocked by the private sector. Actual ethanol use as transport fuel in the EU market is estimated at about 2.8 MMT. Based on the mandates (see policy section of this report), bioethanol consumption is forecast to grow further to 4.0 MMT in 2010. This anticipated growth is taking into account a moderate recovery of the EU economy and crude oil prices. The most significant growth is expected in France, the UK, Spain, the Benelux countries and Poland. The demand in France, Spain and Poland will be mainly supplied with domestic production. The UK and Benelux production will compete with third country imports in their domestic market.

EU Bioethanol Consumption – Main Consumers (1,000 MT)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
France	231	426	650	660	750
Germany	478	461	595	600	600
United Kingdom	0	150	225	310	470
Sweden	260	300	340	300	360
Spain	180	190	190	250	360
Benelux	28	133	230	320	350
Poland	93	64	70	150	250
Other	170	481	630	645	810
Total	1,440	2,205	2,930	3,235	3,950

Source: EU FAS Posts

On an energy basis, the share of bioethanol in gasoline consumption during 2008 was 1.6 percent. Blending is forecast to increase to about 2.4 percent in 2010.

EU Bioethanol and Gasoline Consumption (Ktoe)					
Calendar Year	**2006[r]**	**2007[r]**	**2008[e]**	**2009[f]**	**2010[f]**
Bioethanol	880	1,380	1,790	2,070	2,560
Gasoline	109,829	106,071	105,650	105,220	104,800
Bioethanol share	0.79%	1.28%	1.67%	1.93%	2.38%
Indicative EU goal (EU Directive 2003/30)	2.75%	3.50%	4.25%	5.00%	5.75%

Source: EU FAS Posts. Gasoline use is based on statistics of the European Commission, Directorate-General for Energy and Transport.

Trade

As bioethanol has no Harmonized System (HS) 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 180,000 MT in 2006. During 2007 and 2008, imports grew significantly to nearly 900,000 MT. The majority of the bioethanol is imported by the UK, Sweden, and the Benelux countries through the port of Rotterdam. During 2008, the Rotterdam port authorities reported imports from Brazil, Argentina, Costa Rica, Venezuela, Peru and Guatemala. On April 11, 2008, the Dutch and Brazilian Governments signed a Memorandum of Understanding in which the strategic location of the Rotterdam port for the transit of biofuels to the EU was 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 EU Member State requirements.

Brazil mainly exports undenatured, pure ethanol to the EU. The tariff on undenatured ethanol is 192 Euro per thousand liters, while the tariff on denatured ethanol is 102 Euro per thousand liters. Most EU Member States 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. Until 2007, bioethanol was also imported under the HS code 3824 into Sweden, which was subject to a lower tariff, 6.5 percent of the customs value. In 2007, this loophole was closed. In addition, bioethanol enters duty-free under the Everything But Arms initiative (EBA) for Least Developed Countries and the Cotonou

Agreement with African, Caribbean and Pacific (ACP) countries (see the policy section of this report).

During 2009, EU bioethanol imports are expected to stabilize due to the reduced demand in the EU. During the first quarter of this year, imports from third country origins through the port of Rotterdam reportedly fell. In 2010, EU imports are expected to recover following the anticipated growth in demand. Currently, EU Member States individually regulate their bioethanol imports by issuing import licenses to importers. The European Commission (EC) is not expected to take political action against these imports. In several biofuels policy papers of the EC (see policy section of this report), the EC is proposing to seek a balanced approach towards domestic biofuels production and imports. Currently the EC is determining criteria for sustainability (see policy section of this report), but these are anticipated not to affect bioethanol produced from sugarcane.

Cellulosic Ethanol - Sweden

Due to its vast forestry resources, Sweden has a long history of processing cellulosic raw materials from forestry products. Sweden's largest ethanol producer, SEKAB, is one of the world's leaders in the developing technologies for production of ethanol from cellulose. The company's pilot plant in Örnsköldsvik in Northern Sweden has been in continuous operation, producing ethanol from forestry waste products, since 2005. The pilot plant produces 300-400 liters of ethanol per day from a feedstock input of 2 tons of dry biomass. The plant is designed to produce the necessary expertise for the expansion to commercial production. The feedstock is wood chips from pine trees, but other raw materials such as bagasse from sugarcane, wheat and corn stover, energy grass and recycled waste are also of interest for the project.

An intensive development project is under way at the facility with the aim of verifying and further developing the process technology prior to the next stage of technological development. The target is to have the technology ready for production of large-scale second generation ethanol in 5-8 years using cellulose as raw material.

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 [Biofuels in Germany – Prospects and Limitations].

BtL research enjoys much attention, particularly in Germany. BtL is still in its infancy and not commercially available. Once widely available, it could contribute significantly to achieving the ambitious EU biofuel goals. Projections as to when this might be technically feasible range from 5 to 10 years. However, whether BtL will be actually produced on a large scale basis depends on political and economic factors. These include details of biofuel mandates, CO_2 emission reduction goals, and the price of competing products such as fossil diesel and gasoline as well as cellulosic ethanol.

Production and Research Projects

In April 2008, *Choren* opened the first commercial - yet small – BtL production plant in Freiberg, Saxony in Eastern Germany. However, the plant is still its initial stages and commercial production is expected to start in the Fall of 2009. 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 a large industrial scale plant with an annual capacity of 270 million liters/200,000 MT (71 million gallons). However, for lack of clear political signals regarding energy tax reductions, the final decision has been postponed to 2010. If built, the plant could start operating in 2013 or 2014.

Because of the complex production process, BtL production plants need to be of a large size to be economically viable. This poses the challenge of transporting large amounts of voluminous biomass over large distances. The *Forschungszentrum Karlsruhe* (Research Center Karlsruhe, FZK, Germany) is developing a four stage process that would address this problem by splitting the BtL production stages geographically. In a first step (*bioliq* ® process) biomass is transformed into an intermediate product (*bioliqSyncrude*®) that holds 10-15 times as much energy as the original biomass. The *bioliqSyncrude*® is then transported to a central BtL plant for the stages two through four, thus substantially reducing the transport volumes, costs, and attached GHG emissions. A pilot bioliq ® plant is operational at the FZK. A gasification plant for stage two is currently being constructed. FZK expects to have the entire system from straw to fuel in place by 2012. For details on the FZK process please refer to http://www3.interscience.wiley.com/cgi-bin/fulltext/121624305/PDFSTART .

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.

Biogas

Biogas production in the EU in 2006 and 2007 amounted to 16,973 GWh and 19,937 GWh, respectively.

EU Biogas Production (Ktoe)				
From: Calendar Year	Landfill	Sewage Sludge	Field Crops, Manure other Leftovers	**Total**
2006	2007.3	867.8	1330.8	**4898.9**
2007	2905.2	887.2	2108.0	**5901.2**

Source: le journal des énergies renouvelables No. 186, 2008 – biogas barometer

In the EU, biogas from agricultural crops is almost exclusively produced by farmers in Germany. Agricultural biogas plants in most other EU countries process manure and waste material from the food processing industry. However, new pilot plants for biogas from field crops have been also installed in other EU countries. In 2007, biogas produced in the agricultural sector amounted to 36 percent of total biogas production in the EU. The other 64 percent of biogas production resulted from

biogas collection and production from landfills and from sewage sludge. The agricultural production portion is growing rapidly.

German farmers predominantly use silage corn and other plant silage materials to convert into biogas, and subsequently convert it into electric power and heat. Since the financial incentive system was amended in Germany in 2008, more biogas plants will be installed operating on manure and manure/crop mixes. In 2008, there were 4000 biogas plants in operation. For 2009, an additional 500 plants are likely to be installed, most of them processing manure and manure/crop mixes. In 2008, about 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.

In Germany, an increasing portion of the agricultural biogas is inserted into the natural gas pipeline system. This, however, requires that the gas be cleaned and standardized to meet the natural gas quality requirements. Industry experts claim that a minimum plant size of about 1.0-1.5 MWh is required to make this additional processing step competitive. 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. The average size of biogas facilities installed during recent years is reported at about 500KWh.

Another approach is to pipeline the unprocessed biogas to combined power and heat plants which are installed at the location of heat consumption. To commercially use the process heat from the gas conversion, some farmers have begun to dehydrate the fermentation sludge to obtain a marketable dry organic fertilizer.

In northern Germany, there is also one biogas station in operation fueling up automobiles. This pilot project is run as a cooperation between the German automobile company Volkswagen and a regional agricultural cooperative.

Solid Biomass

In the past few years, primary energy production from solid biomass has been steadily increasing in Europe. However, a mild winter in 2007 slowed down the solid biomass growth to 66.4 Mtoe, only 0.7 Mtoe more than in 2006. Wood-based biomass is the main source for bioenergy in Europe, followed by waste and agricultural-based biomass. Most of the biomass is used for heat, and to a lesser extent in combined heat and power (CHP) applications.

The share of biomass in the energy mix differs widely among the EU Member States, from under 2 percent in some countries to almost 20 percent in Sweden and Finland. The main producers in Europe are countries with large territories and large forestry resources such as France, Sweden, Germany, Finland and Poland. These five countries represent 58 percent of primary energy production coming from solid biomass. The principal users of biomass are the Nordic countries and

the Baltics.

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

Biomass will play an increasingly important role in the European energy market in meeting the 20 percent target for renewable use by 2020 and in the future reduction of CO_2 emissions in Europe. Despite the fact that the heating and cooling sector is responsible for almost 50 percent of Europe's energy demand, this sector has not been addressed in the policy framework. However, major changes in the heating and cooling sector might soon be seen due to the new EU Renewable Energy Directive (RED) agreed upon in December 2008. The RED requires Member States to introduce measures in order to increase the use of renewable energy sources in the buildings sector. Also, the RED stresses the importance of developing central district heating and cooling systems using renewable energy sources.

Heating and Electricity

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

Electricity production in Sweden is almost entirely fossil-free and is mainly based on hydro power and nuclear power. The use of oil has fallen from more than 70 percent of the total energy supply in 1970 to around 30 percent today, largely because of diversification of fuels and more efficient use of energy. The most important policy instrument in promoting renewable electricity production in Sweden is the electricity certificate system that was introduced in 2003. The objective of the electricity certificate system is to increase the production of renewable electricity with 17 TWh by year 2016 compared to year 2002. The system replaces earlier public grants and subsidy systems.

Pellets

Wood pellet use in the EU mainly occurs in Sweden and Germany although there are signs of dynamic growth in a number of other Member States. With the Member States' ambitious policy objectives to increase the share of renewable energy sources in the electricity and heating sector, wood pellets will become increasingly important. According to the European Biomass Association (AEBIOM), there are currently about 450 pellet plants in Europe producing about eight million tons of pellets per year. The

number of plants is increasing continually due to the dynamic market development and AEBIOM estimates that up to 80 million tons of pellets could be used in the EU by 2020, which corresponds to 33 million tons oil equivalent.

The major raw material for pellets has traditionally been sawdust and by-products from sawmills. With the increasing competition for the sawdust resources there is now increased interest in searching for alternative raw material. The issue of pellet raw material and the pricing will be crucial for future market development.

Sweden is the largest producer and consumer of wood pellets. There are over 90 pellet factories supplying nearly 2 million metric tons of pellets to the Swedish market. In Germany, production of wood pellets reached 1.47 MMT in 2008 compared to 1.13 MMT in 2007. Capacity size of pellet companies in Germany ranges between 10,000 and 50,000 MT. About 60 percent of the German production, 900,000 MT, has been used in Germany. Growing demand is particularly reported from commercial and community heating facilities.

Related Reports from USEU Brussels and MS Posts in the EU

Country	Title	Date	Report Number
EU-27	Oilseeds Annual http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Commodity%20Report_EU-27%20OILSEEDS%20_Berlin_Germany%20EU-27_4-30-2009.pdf	04/30/09	E49039
EU-27	Grain and Feed Annual http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Commodity%20Report_EU-27%20GRAIN%20_London_United%20Kingdom%20EU-27_4-30-2009.pdf	04/30/09	
Sweden	Swedish Ethanol Plant's Bi-Product Becomes Main Product	04/28/09	SW9006
Albania	Italy to Build $1.3 Billion Biomass Plant in Albania	02/10/09	AL9001
Sweden	Bio-Fuels Cooperation- The Next Big Thing for FAS?	02/04/09	SW9001
Germany	EU action requires Germany to revise changes to biofuel law	01/30/09	GM9002
Germany	Read-out from Fuels of the Future Congress in Berlin	12/12/08	GM8051
EU-27	EU Member States revise their biofuels policy	12/08/08	E48140
France	Changes Proposed in French Biofuels Incentives	11/12/08	FR8020
Germany	German Government Modifies Biofuel Laws	10/28/08	GM8047
Germany	First Biogas Plant Using 70 Percent Chicken Manure as Feedstock Inaugurated	08/26/08	GM8034
France	Biofuels Update	08/14/08	FR8012
UK	Biofuels under fire	07/15/08	UK8013
Sweden	Biofuels Annual	07/14/08	SW8006
EU-27	Biofuels Annual	06/24/08	E48063
EU-27	EU Agriculture Commissioner's Message on Biofuels and Food Prices	05/16/08	E48053
Germany	Biomass-to-Liquid Biofuel Plant Opens in Germany	04/23/08	GM8020
Sweden	Sweden Fights to Import Cheap Ethanol	02/25/08	SW8002
Germany	BioTownTM USA and Bioenergy Village Juehnde Explore Options for Cooperation	02/25/08	GM7051

Annex I: Biofuels Incentives in the Member States

Production incentives

Investment aids

Bulgaria: Renewable energy projects are financed by the National Rural Development Program which is applicable to all projects related to investment in rural areas. No other special funds for biofuels exist.

Finland: Government support for pilot plants for development of second generation biofuels.

Greece: The National Investment Law provides incentives to the processing industry for establishing new facilities, and for the modernization and expansion of existing ones. Financial Support varies between 50-60% of the total investment according to zoning and the size of the investment. Oilseed crushing plants and biofuel production plants are covered by the law provided that they satisfy all the requirements set by the law. There are about 13 plants in the country which participate in contract allocation based on certain criteria set by the GOG Ministry of Agriculture, such as spending on research, ISO, processing capacity, etc. A proposal by the Ministry of Agriculture for 100% tax reductions to farmers and public transport using 100% biodiesel was discussed but no decisions have been made yet.

Ireland: In Budget 2006 a five year biofuels excise relief package was announced aimed at placing 163m liters of biofuels on the Irish market by 2008. Once a project is approved, that biofuel is given relief from Mineral Oil Tax.

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

Poland: Financial aid is available under EU funds. There is €69 million from ERDF and €8 million from public funds, available to co-finance the "Energy security, including diversification of the energy sources" priority.
The Innovative Economy program provides co-financing for projects that are based on biofuel and bio-components production. Funds are available under priority "Investing in innovations" (strictly for second generation bio-fuels) and "Research and development of new technologies".

Portugal: Decree 66/2006 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 tons 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 subsidies to encourage potential investors in less-favored areas in order to create employment. The incentives are not biofuel specific; most of them support a variety sectors. Biofuel producers can benefit from these aids.

Sweden: Government supports the development of second generation biofuels and will allocate SEK 875 millions during 2009-2011 for commercialization of new energy techniques, for example pilot plants.

UK: The UK has an Enhanced Capital Allowance (ECA) scheme that provides businesses with enhanced tax relief for investments in equipment that meets published energy-saving criteria. 100 percent first-year ECAs allow the full cost of an investment in designated energy-saving plant and machinery to be written off against the taxable profits of the period in which the investment is made. The general rate of capital allowances for spending on plant and machinery is 20 percent per year on the reducing balance basis. In addition, the UK has a number of different grant schemes designed to encourage biomass production and conversion to energy.

Tax breaks/credits/penalties for producers

Belgium: The Belgian Government appointed distribution quotas to three bioethanol 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 of 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. This 3% reduction was put in the law but there were some legal issues around it which prevented the industry and even the executive authorities from implementing it. This can be done only after the Min Finance notifies the EC about the production cost structure of locally produced fuel, so that derogation in the excise duty is granted. This process, however, was obstructed by certain corporate interests related to the confidentiality of such information. The communication between the current government and the EC is not completed yet but due to upcoming new climate legislative package, national budget collection challenges, and national elections in early July, it is highly unlikely that the current dialogue will continue and that this regulation will be ever implemented.

Finland: The Finnish Government will present a proposal for feed-in tariffs for biogas and wind power in the spring of 2009. Also, new taxation and subsidy measures are being developed to favor fuel efficiency.

France: An environmental tax (called TGAP) is imposed on distributors when the incorporation of biofuels they practice is lower than the objective of the French Government. These are 3.5% in 2007, 5.75% in 2008, 6.25% in 2009 and 7% in 2010.

Greece: Biofuels in Greece can be blended up to 5%. According to the GOG Ministry of Development, reduction of duties can be expected only when blends exceed 10%. Current consumption tax for 100% mineral fuel of about 420 €/Hectoliter is equally implemented for a 5% biodiesel blended fuel. The GOG's views seem to favor crop production for food instead of energy. GOG officials often express

opinions favoring imports from neighboring Balkan States, instead of locally producing feedstock, due to the relative expense of local production.

Hungary: The system of excise tax preferences was changed June 30, 2007 to a mandate for bioethanol, and from January 1, 2008 for biodiesel. 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 the 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.

Poland: According to the Ministry of Economy, 2007 law changes set new excise tax rates: for gasoline $0.4742/l; crude oil $0.3176/l; self-contained bio-components $0.0030/l. For gasoline and diesel that include over 2% biofuels, there is no excise tax at all. For the period 2007-2014 producers can exclude from their income tax 19% of biofuel production costs that are surplus over costs of liquid fuel production (same heating/fuel value). However, these regulations have not yet been positively notified to the European Commission.

Romania: Currently an excise exemption for pure biodiesel blended with conventional fuel is applied for the mandate 4%, regardless of the actual amount of biodiesel contained in the blend. The current excise tax for conventional fuel is €336 /MT. There are no incentives for biofuel producers.

Spain: As of 2009, a duty is imposed on distributors when the incorporation of biofuels is lower than the mandate levels. Biofuels are exempt from the hydrocarbon tax, at least until 2013.

UK: Under the UK's Renewable Transport Fuel Obligation (RTFO), fuel suppliers are awarded certificates for each liter of biofuel, and these can be traded. Suppliers can also buy themselves out of the obligation, at a price set by the government at a level intended to be higher than the additional cost of supplying biofuel (over and above the fossil fuel based alternative). The combination of duty incentive (currently 20 pence per liter for biodiesel and bioethanol) and the penalty/buy-out price (15 pence per liter) paid by fuel suppliers who fail to meet their RTFO obligation is guaranteed until 2010-2011. After that the duty differential will cease, and the RTFO buy-out price will change to 30 pence per liter.

Consumption incentives

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

Austria: The Austrian Mineral Oil Duty Act (Mineraloelsteuergesetz) lays down lower duty rates for fuels containing at least 44 liters biofuels per 1,000 liters fuel. As of October 2007, the mineral oil duty for petrol containing at least 44 liters bioethanol per 1,000 liters is €442 (unreduced tax: €475). As of July 2007, the mineral oil duty for diesel containing at least 44 liters biodiesel per 1,000 liters is €347 (unreduced tax: €375). Pure biofuels are exempt from mineral oil duty.

For Baltic States: Biofuels used as motor or heating fuels are exempt from excise duty.

Bulgaria: none

Czech Republic: An amendment to the Consumption Taxes Act that is expected to come in force in mid 2009 will set tax exemptions for high-percentage fuel mixes, pure biofuels and biogas. E 85 and E 95 will effectively become consumption-tax-free. Also exempt from the consumption tax will be the bio-component in biodiesel, in mixes with its content exceeding 30 percent. The tax incentive is planned to last for six years and is anticipated to increase domestic production and use of biofuels.

France: Reduced mineral tax (called TIC) on limited quantities of biodiesel and bioethanol. Tax rate and quantities are revised (and reduced) annually by the French Government. In 2009, they are €15 per hectoliter for biodiesel, and €21 per hectoliter for bioethanol. 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, and Belgium).

Germany: Energy tax reduction for B100. Until August 2006, tax was set at zero. Currently tax amounts to €0.21/liter versus €0.47/liter for diesel. The tax reduction will be phased out over the next few years. By 2012, taxes for diesel and biodiesel will be at the same level.

Greece: There are no incentives for 5% blends. Some tax reductions may take place in 2-5 years when higher biodiesel blends enter the market.

Hungary: There are no consumer incentives to boost biofuel use

Italy: The partial (80 %) consumption tax relief quota for biodiesel is 250,000 tons. Of this amount, 70,000 tons should come from domestically produced feedstock, under specific cultivation contracts. For bioethanol there is a three year (2008-2010) tax relief fund (€73 million/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: In July 2007, the Polish Parliament approved a new program which is supposed to encourage biofuel use. These measures should be enough to make biofuel use attractive. However, local and national governments are not making much progress in implementing this program.

Romania: Currently there are no incentives for biofuel producers. The current excise tax for conventional fuel and biofuel is 325 €/MT.

Slovakia: Duty is reduced by 48% of the percentage of a biogenous substance that is contained in the blend, to a maximum of 7.2%.
For petrol: duty is reduced by the percentage of a biogenous substance that is contained in the blend, to a maximum of 5%.
The amendment (53/2009) to the Act on Mineral oil excise tax (98/2004) has been in force since March 1, 2009.

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: bioethanol, biodiesel, biogas, bio ETBE or biodimethyl ether. The level of exemption from excise

duties is proportional to the share of biofuels added, but may not exceed 5% of excise duties.

Spain: Currently there are no incentives for biofuel consumers.

Sweden: There are no energy taxes for ethanol and biodiesel. The new Government Bill presented on March 11, 2009, proposed that "green cars" will be exempted from vehicle tax for five years. The current "green car" cash bonus will thus be replaced by a long-term tax exemption. The amendment should apply to cars entering use from July 1, 2009. In addition, cars running on petrol and diesel that emit less than 120 grams of carbon dioxide per kilometer in mixed driving will also be exempted from vehicle tax.

UK: The UK government introduced a lower rate of tax on bioethanol and biodiesel with the aim of making it 20 pence per liter cheaper to consumers. However, to date, the lack of suppliers and higher manufacturing and distribution costs means that bioethanol and biodiesel are just marginally cheaper than standard fuels. One tax-break for consumers is that flex-fuel car owners get a 20 pounds/30 USD per year discount (around 10 percent) on their road tax.

Use mandates

Austria: Substitution requirements stated below are based on the total energy content.

As of October 1, 2005: 2.5% for petrol and diesel;
As of October 1, 2007: 4.3% for petrol and diesel;
As of October 1, 2008: 5.75% for petrol and diesel;

In 2007, a total of 6.3 million MT of diesel was sold. 96.3% of the Austrian diesel had an average of 4.7% biodiesel added by volume. 289 thousand MT of blended biodiesel, 71 thousand MT of pure biodiesel or higher biodiesel content were placed on the Austrian market. Total biodiesel on the Austrian market in 2007 accounted for 370 thousand MT.

Petrol consumption in 2007 was 2 million MT, including 406 thousand MT with a bioethanol content averaging 4.7% bioethanol by volume.

Belgium: The Belgium Government imposed a mandate of 5.75% blending in 2010, but has no mandates imposed for the preceding years. At the moment, the Belgium government is not planning to change their biofuel targets.

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. The targets are as follows:

Biofuel Targets – Bulgaria (1,000 MT)

	2005	2008	2009	2010	2015	2020
Biofuel	0	43.9	79.3	133.2	218.6	314.5
Bioethanol	0	9.7	16.0	24.5	33.4	37.0
Biodiesel	0	34.2	63.3	108.7	185.2	277.5
Total Fuel	1,952	2,237	2,344	2,450.5	2,950.5	3,460.5

Target (%)	0	2	3.5	5.75	8	10

Czech Republic: There are blending mandates based on the volume of total transport fuels:

As of September 1, 2007: 2 % for diesel;
As of January 1, 2008: 2 % for petrol;
As of January 1, 2009: 3.5 % for petrol and 4.5 % for diesel.

Finland: 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 in 2008 was 2% of the total energy content of all transport fuels supplied by a fuel distributor. In 2009, the minimum volume is 4%, and in 2010 and subsequent years it will be 5.75%.

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

Biofuel Targets – France					
2005	**2006**	**2007**	**2008**	**2009**	**2010**
1.20%	1.75%	3.50%	5.75%	6.25%	7.00%

No France-specific goals are set after 2010. Biofuels use will be part of the 10 percent European target for use of renewable energies by 2020.

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.

Biofuel Targets – Germany (%)			
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

The mandates above were introduced in 2006 based on the assumption that E10 would be introduced on the German market in 2008. This did not materialize as allegedly 3 million older cars cannot use E10 and would have been forced to buy the more expensive "super plus" gasoline. As a consequence of the failure to introduce E10, the German government viewed the mandates as over-ambitious and is in the process of reducing them. The current draft legislation stipulates the following revised mandates:

Biofuel Targets – Germany (%)			
Year	**Overall Mandate**	**Biodiesel Specific**	**Ethanol Specific**

2009	5.25	4.4	2.8
2010-2014	6.25	4.4	2.8

The German government expects the Bundestag and Bundesrat to pass the amendment before the summer recess. The revised mandates would apply retroactively.

Greece:

Biofuel Targets – Greece (%)			
Year	**Overall mandate**	**Biodiesel specific**	**Ethanol specific**
2009	3.00	5.0% max	0
2010	3.50	5.0% max	0
2010-2014	5.27	5.00 - <10%	Unpredictable (see also Report GR9006 on "sugar", FAS Athens, Greece

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. As of this date, distributors of transport fuels were obliged to blend 2 percent of biofuels in 2007, increasing gradually to 5.75% in 2010. On November 3, 2008, the Dutch government reduced the blending target for 2010 from 5.75 to 4 percent. The reason for this reduction is the uncertainty of the sustainability of biofuels, and the absence of criteria. With the reduction the government wants to pressure the biofuels industry to establish proper certification of sustainable biofuels.

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. The 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.

Portugal: On February 2009, the Government of Portugal approved a regulation in order to encourage biodiesel consumption. The mandatory amounts of biodiesel that must be marketed, based in volume, are 6% for 2009 and 10% for 2010.

Romania: The mandate was introduced for the first time in Romania in July 2007, when the fuel retailers had to use at least 2 percent of biodiesel in blending. The percentage increased gradually reaching 4 percent in July 2008. Starting with July 2009, a minimum 4 percent of bioethanol based on volume should be blended with gasoline.

Slovakia: Government Regulation No 246/2006 Coll. sets the mandates on the minimum quantity of renewable fuels in the petrol and diesel fuels marketed in the Slovak Republic (entry into force: 1 May 2006). Producers and vendors are obliged to blend a minimum of 2% biofuels in fuels for transport, based on the energy content of the total quantity of petrol and diesel fuel placed on the market. In

2010 the minimum mandate is 5.75%.

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:

Biofuel Targets – Slovenia (%)	
Year	**Content of biofuel**
2006	1.2
2007	2.0
2008	3.0
2009	4.0
2010	5.0
2011	5.5
2012	6.0
2013	6.5
2014	7.0
2015	7.5

The content of biofuels is expressed as a percentage of the energy value of all motor vehicle fuel placed on the market. Distributors may transfer obligations from one year to the next if the price of purchasing biofuels exceeds the total of the price of fossil fuels and the excise duties on them.

Spain: In October 2008, the Government of Spain implemented a mandatory mixing regulation (Orden ICT/2877/2008, October 9, 2008). As of 2009 the mandatory amounts of transport biofuels that must be marketed by fuel sector operators are as shown in the table. The mandate is based in energy content, not volume.

Biofuel Targets – Spain (%)			
Year	**Overall mandate**	**Biodiesel specific**	**Bioethanol specific**
2008	1.9	1.9	1.9
2009	3.4	2.5	2.5
2010	5.83	3.9	3.9
2011	7	N/A	N/A

The industry estimates that diesel consumption would grow 1% in 2009, and 2% and 3% in 2010 and 2011 respectively. Meanwhile, gas consumption would decrease 3% each year. According to this, the consumption of gas and diesel would be:

Biofuel Targets – Spain		
Year	**Gas (1,000 KTEP)**	**Diesel (1,000 KTEP)**
2005	7,260	23,282
2006	6,931	24,585
2007	6,686	25,772
2008	6,227	25,296
2009	6,414	25,549
2010	6,606	26,060

Source**:** Corporación de Reservas Estratégicas de Productos Petrolíferos (CORES).

Considering established conversion factors, these percentages suppose the demand of biofuels shown in the following table:

Biofuel Targets – Spain (1,000 MT)			
Year	**Biodiesel specific**	**Bioethanol specific**	**Overall mandate biodiesel/bioethanol**
2009	740	241	330 / 448
2010	1,178	350	716 / 972

The rest of the overall mandate will be likely covered by biodiesel.

Sweden: All gasoline sold in Sweden contains 5% ethanol. As of 2006, Swedish regulations allow a 5% blend of biodiesel in conventional diesel. Also, Sweden has introduced obligations on fuel retailers to sell at least one type of biofuel. In order to quickly increase the use of biofuels, the Government of Sweden has the ambition to implement the new EU biofuel directive that enables a blending of 10% ethanol and 7% biodiesel, hopefully by July 1, 2010. Sweden's biofuel mandates are 5.75% for 2010 and 10% for 2020.

U.K.: The Renewable Transport Fuel Obligation (RTFO) came into force in April 2008. The RTFO places an obligation on UK fuel suppliers to ensure that a certain percentage of their aggregate sales is made up of biofuels, or they face a 15 pence per liter penalty. Starting at 2.5 per cent in 2008/2009, it will increase each year to require 5 per cent by volume of all UK fuel sold at UK gas stations to come from renewable sources by 2013/2014.

Biofuel Targets – U.K. (% by volume / Fiscal Year)					
2008/ 2009	**2009/ 2010**	**2010/ 2011**	**2011/ 2012**	**2012/ 2013**	**2013/ 2014**
2.50	3.25	3.50	4.00	4.50	5.00

[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)

[2] 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