

Biofuels in the European Union: An overview on the EU biofuels policy

Introduction

The European biofuels market is mainly determined by the European Union's policy and legislation on biofuels. The release of the European Biofuels Directive in 2003 has created a legislative framework in the Member States and set off a rapid increase in biofuels production and use.

The EU has increased its production of biofuels, especially of biodiesel. The entire EU production of biofuels amounted to 3.9 Mio. tonnes in 2005. Especially the biodiesel production has risen from 1.1 Mio. tonnes in 2002 to about 3.1 Mio. tonnes in 2005. In 2006, the biodiesel production in Europe reached about 4.9 Mio. tonnes. Therefore biodiesel continues to be the leading biofuel in the EU with 81.5% of biofuel production and is expected to increase further. The bioethanol part amounts to 18.5% of the European biofuels production. But altogether this represented less than 1% of the entire EU petrol and diesel consumption. The total area used for energy crop production was app. 2.8 Mio. hectares in 2005 which represents about 3% of the total EU-25 arable land. In total there are actually 185 fully operational biodiesel plants in Europe, other plants are under construction. In 2007, capacities for production will reach about 10.2 Mio. tonnes.

The EU policies play a crucial role with regard to the future development and use of renewable energy, especially biofuels. Individual Member States transpose EU policies into their own legislations, thus the EU has to develop policies that address all the issues of its 27 Member States.

Within the EU three main objectives drive the efforts to increase the use of biofuels:

- to increase the security of supply for transport fuels
- to ensure the further competitiveness of the EU and to keep the energy supply in a stable regulatory, and
- to promote environmental sustainability

Furthermore, biofuels are an interesting new option for agriculture and forestry and a major component of regional development.

The EU has already gained experience and knowledge on biofuels and will also export this knowledge. Research and technological development should be encouraged. This needs to be supported by a clear strategy on biofuels.

This report will briefly describe the majority of relevant documents and forward the reader to the relevant websites for further information on biofuels. First the main documents are described, followed by a description of the main steering instruments. An overview on important lobby organisations and a short outlook to further developments will complete the picture of biofuels in the European Union.

The most important EU biofuels documents

The first relevant EU document published with regard to biofuels was the European Commission's White Paper for a Community Strategy "*Energy for the future: Renewable Sources of Energy*". This document sets out a strategy how the share of renewable energies in gross domestic energy consumption can be doubled by 2010 to 12%. It also includes an Action Plan with a timetable how this objective can be achieved. Read more in [COM \(97\) 599](#).

In 2000 the European Commission came forward with the Green Paper "*Towards a European Strategy for the Security of Energy Supply*". Read more in [COM \(2000\) 769](#).

The EU "*Biofuels Directive 2003/30/EC*" was published in 2003. It sets reference values for the market share of biofuels, 2% by the end of 2005 and 5.75% by the end of 2010. The EU Member States are obliged to set national indicative targets, taking into account these reference values. Read more in Directive [2003 \(30\) EC](#).

The EU Biofuels Directive has led to the creation of favourable legislative frameworks in most Member States and has therefore triggered rapid market implementation of biofuels. By now all of the Member States have set national targets, most of them aim for the proposed 5.75% market share by 2010 or earlier. Each EU Member State has to send annual reports to the EC, stating the implemented measures, the annual biofuel production and the market share achieved. Read more in Directive [2003 \(30\) EC](#).

Necessary related documents are the “*Energy Taxation Directive*” and the work on the standardisation of transport fuels and biofuels for transport. The Energy Taxation Directive was adopted in October 2003. It encourages Member States to grant tax reductions and tax exemptions in favour of biofuels. These tax concessions may not be implemented without prior authorisation by the Commission. Read more in Directive [2003 \(96\) EC](#).

With the “*Fuel Quality Directive 2003/17/EC*” in 2003 the environmental specifications for market fuels were amended to establish specifications for petrol and diesel. The CEN (European Committee for Standardization) has set limits on biodiesel blending to no more than 5% share by volume (or 4.6% in energy terms) for technical reasons. The biodiesel itself needs to comply with EN 14214. With a maximum blend of 5% biodiesel the target of 5.75% biofuels by 2010 can not be met by blending alone. Read more in [2003 \(17\) EC](#).

The production of energy crops in the EU is encouraged by the *CAP – Common Agricultural Policy* with direct aids or incentives. Since 1992 these aids have been gradually decoupled from production. The CAP Reform in 2003 was the latest reform in this regard. The “*Single Payment Scheme*” helps to facilitate the supply of energy crops. Together with this the set-aside obligation has been integrated which allows the cultivation of non-food crops and energy crops on set-aside areas. Read more in [CAP Reform](#).

In December 2005, the Commission published the “*Biomass Action Plan*” describing how the use of energy derived from forestry, agriculture and waste materials can be increased. This plan also includes measures to improve the supply of and demand for biomass and to overcome technical barriers. Read more in [COM \(2005\) 628](#).

The Commission’s Communication “*An EU Strategy for Biofuels*” was published in February 2006. In this EU Strategy a range of market-based, legislative and research measures are presented to boost the production of biofuels. It complements the *Biomass Action Plan* of December 2005. Read more in [COM \(2006\) 34](#).

In 2006 the EC opened a public consultation on the Biofuels Directive that found wide interest in the fast-growing biofuels community and triggered 144 responses. These responses were summarized by the ECN (Energy Research Centre of the Netherlands) in a report called “*Review of EU Biofuels Directive – Public consultation exercise – Summary of the responses*” in October 2006. The main outcome was that the Biofuels Directive should be further pursued, and a lot of suggestions were made on possible modifications. Read more in [Review of the EU Biofuels Directive](#).

Basing on the responses gathered through the public consultation in 2006, the Commission reviewed the Biofuels Directive and thereupon published the “*Biofuels Progress Report*” in January 2007. According to this report the Commission estimates that the incorporation rate of biofuels in the EU will be at about 4.2% in 2010. This setback towards the Directive objective of 5.75% indicates that the European biofuel production needs further support. Read more in [COM \(2006\) 845](#).

A further evaluation of policy instruments was made under the “*PREMIA*” project. The most important key drivers for biofuel support could be evaluated for the future as well as the conditions that influence a Member State’s potential and interest in producing and consuming biofuels. Read more in [PREMIA](#).

The development of a powerful EU biofuels strategy is still ongoing: In March 2006 the European Commission set out its vision for a “*Strategic EU Energy Review*”. In the beginning of 2007 the so-called “*Renewable Energy Roadmap*” and the “*Energy Policy for Europe*” were published, aspiring to a 20% share of renewables in the EU’s energy mix and a minimum target of 10% for biofuels in transport by 2020. Member States are required to establish National Action Plans that outline their specific objectives and sectoral targets for each of the renewable energy sectors – electricity, biofuels and heating and cooling. Read more in [Latest measures](#).

EU steering instruments with regard to biofuels

The main instruments to steer further research and development activities on biofuels are the funding schemes of *FP7* and *IEE* and the implementation of the *EU Biofuels Technology Platform*.

The 7th Framework Programme

In its *7th Framework Programme* the European Commission continues to support the development of biofuels. This domain is seen as one with a strong potential for excellent research and technological development and for converting the results into high social and economic benefits. Special focus is laid on the “bio-refinery” concept as well as on second-generation biofuels. *Read more on the FP7 Website (http://europa.eu.int/comm/research/future/themes/index_en.cfm)*

IEE

The *Intelligent Energy – Europe Programme* is the EU’s tool for funding action to improve the conditions to save energy and encourage the use of renewable energy sources in Europe and to move us towards a more energy intelligent Europe. The Intelligent Energy - Europe programme covers action in the following fields:

- energy efficiency and rational use of resources (SAVE)
- new and renewable energy resources (ALTERNER)
- energy in transport (STEER) to promote energy efficiency and the use of new and renewable energy sources in transport, and
- integration of initiatives combining several of the aforementioned fields or relating to certain Community priorities.

Read more on the IEE website (http://ec.europa.eu/energy/intelligent/index_en.html)

European Biofuels Technology Platform

This industry-led *EU Biofuels Technology Platform* was encouraged by the Commission and aims at providing a common European strategy for the production and use of biofuels for transport. Major biofuels stakeholders are engaged with this platform, representing the agricultural and forestry sector, biofuels industry, oil companies and their distributors, car producers and research institutes. *Read more on the EU Biofuels Technology Platform Website* (<http://www.biofuelstp.eu/>)

Lobby organisations

EBB European Biodiesel Board

The *EBB European Biodiesel Board* is a non-profit organisation established in January 1997 and represents the opinion of the EU biodiesel industry. It gathers 55 companies and associations and tries to promote the use of biodiesel in Europe. The EBB member companies account for about 80% of the EU biodiesel production. *Read more on the Website:* www.ebb-eu.org

eBIO

Founded in 2005, the *European Bioethanol Fuel Association eBIO* serves as the voice of the European bioethanol fuel industry, providing advocacy, authoritative analysis and important industry data to its members, the European institutions, strategic partners, media and other opinion leaders. Its objectives are to promote the increased production and use of bioethanol fuel, to participate in educational activities, and to provide eBIO Members with the knowledge necessary for informed business decisions. *Read more on the eBIO Website:* <http://www.ebio.org/home.php>

AGQM

The *Arbeitsgemeinschaft Qualitätsmanagement Biodiesel e.V* (AGQM, working group on quality management of biodiesel) was founded by the most important German producers and marketers of biodiesel with the aim to assure that only quality biodiesel is sold by its members. The implemented quality management has built consumer confidence in Germany. *Read more on the AGQM Website:* http://www.agqm-biodiesel.de/_10____.html

UFOP

In 1990, the *Union zur Förderung von Öl- und Proteinpflanzen e.V.* (UFOP, Union for the Promotion of Oil and Protein Plants) was established by the Society of German Farmers and the Federal Society of German Plant Breeders. All companies, associations and institutions participating in the production, processing and marketing of indigenous oil and protein-bearing plants are gathered under the UFOP banner. In past years, UFOP has produced numerous ideas to optimise agricultural production and to promote sales. It has therefore significantly contributed to the German biodiesel success story. *Read more on the UFOP Website:* http://www.ufop.de/english_news.php

Outlook on the further development

In its *Renewable Energy Roadmap*, the Commission has proposed new, legally binding targets for renewables in the overall EU's energy mix (20% by 2020) and for biofuels in transport in special (10% by 2020). Nevertheless, the Member States still need flexibility in promoting renewables according to their potential and priorities. Therefore the EC endorsed in its *Presidency Conclusions* in March 2007 again a 10% minimum binding target to be achieved by all Member States for the share of biofuels in overall EU transport fuels. The binding character of this target aims to afford second-generation biofuels becoming commercially available and the Fuel Quality Directive being amended to allow for adequate levels of blending. *Read more in the document 'Presidency Conclusions'* (http://www.consilium.europa.eu/eudocs/cms_Data/docs/pressdata/en/ec/93135.pdf)

The EU leaders furthermore agreed that different national targets should be derived from the overall 20% binding EU figure on renewables that also take into account the different national starting points and potentials with regard to renewables. The EC is therefore working on a methodology to calculate how much each Member State must take up of the 20% overall renewable "burden". Countries with a large share of renewables, like Denmark or Austria, will therefore have to contribute a larger share than countries with low sources for renewable energy ("Burden sharing").

With regard to standardisation stringent quality requirements should be included. Biodiesel should also be produced from other raw materials than rapeseed oil, because biofuels should not compete against food crops. International standardisation is on the way, fuel standards might be changed to accommodate up to 10% biodiesel in diesel fuel and 10% bioethanol in gasoline.

Furthermore it is undeniable that a balance between food provision and energy needs must be found. Biofuels are still mainly produced from crops that could also be used for food purposes. The availability of food at affordable prices, especially for people living in developing countries, must be guaranteed. Even in the EU some competition on land use could arise. These impacts have to be monitored continuously.

The Commission intends to bring forward a proposal for a directive on the promotion of renewable energy before the end of 2007. The proposed directive will prescribe the figures proposed in the Renewable Energy Roadmap. It will replace the existing electricity and biofuels directives and will also cover heating. As part of the directive, there will be measures to promote the sustainability of the biofuels used to fulfil the targets.

Links to documents and websites

Link to abstract	Link to website
EU Biofuels Directive	http://ec.europa.eu/energy/res/legislation/doc/biofuels/en_final.pdf
Energy Taxation Directive	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0096:en:HTML
Annual Reports to the Biofuels Directive	http://ec.europa.eu/energy/res/legislation/biofuels_members_states_en.htm
White Paper	http://europa.eu.int/comm/energy/library/599fi_en.pdf
Green Paper	http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2000&nu_doc=769
Fuel Quality Directive	http://eur-lex.europa.eu/LexUriServ/site/en/oj/2003/l_076/l_07620030322en00100019.pdf
CAP Reform	http://ec.europa.eu/agriculture/capreform/index_en.htm
Biomass Action Plan	http://ec.europa.eu/energy/res/biomass_action_plan/doc/2005_12_07_comm_biomass_action_plan_en.pdf
EU Strategy for Biofuels	http://ec.europa.eu/comm/agriculture/biomass/biofuel/com2006_34_en.pdf
ECN - Review of EU Biofuels Directive	http://ec.europa.eu/energy/res/legislation/doc/biofuels/contributions/2006_08_23_summary_responses.pdf
Biofuels Progress Report	http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0845en01.pdf
PREMIA	www.premia-eu.org/

Renewable Energy Roadmap	http://ec.europa.eu/energy/energy_policy/doc/03_renewable_energy_roadmap_en.pdf
Strategic EU Energy Review	http://ec.europa.eu/energy/green-paper-energy/index_en.htm
An Energy Policy for Europe	http://ec.europa.eu/energy/energy_policy/doc/01_energy_policy_for_europe_en.pdf
FP7 – 7 th Framework Programme	http://europa.eu.int/comm/research/future/themes/index_en.cfm
IEE Intelligent Energy Europe	http://ec.europa.eu/energy/intelligent/index_en.html
European Biofuels Technology Platform	http://www.biofuelstp.eu/
EBB European Biodiesel Board	www.ebb-eu.org
eBIO – European Bioethanol Fuel Association	http://www.ebio.org/home.php
AGQM – Arbeitsgemeinschaft Qualitätsmanagement Biodiesel e.V.	http://www.agqm-biodiesel.de/_10____.html
UFOP – Union zur Förderung von Öl- und Proteinpflanzen e.V.	http://www.ufop.de/english_news.php
Presidency Conclusions March 2007	http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/ec/93135.pdf