

NEW

World Biodiesel Markets The Outlook to 2010

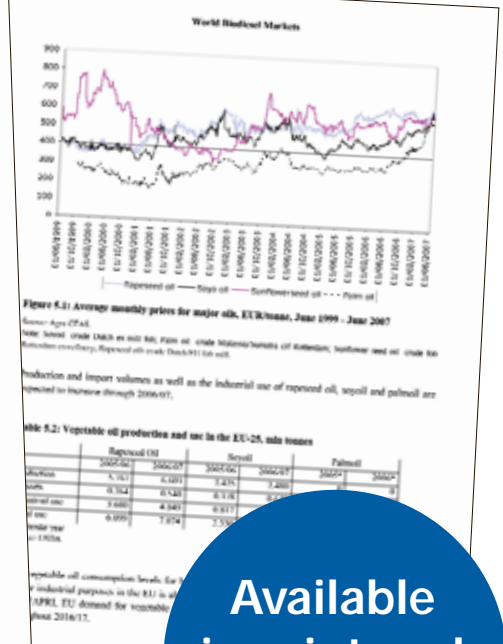
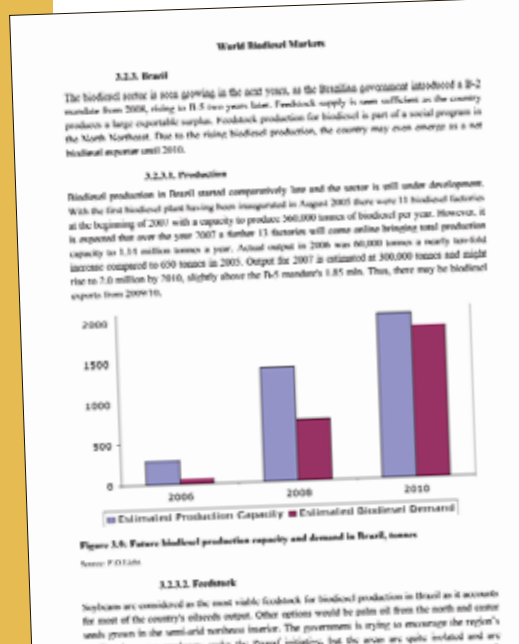
A special study from F.O. Licht and Agra CEAS

This important new study provides a detailed analysis of the global biodiesel market and the outlook for growth and development to the end of the decade.

The study examines the critical factors influencing the market, including the regulatory and trade framework, feedstock supply and price developments, biodiesel production processes and costs, and current and projected global biodiesel capacity. It includes profiles of the major national markets.

The study features almost 200 pages of data and analysis with more than 70 tables and charts.

- Outlook for the world biodiesel market to 2010
- In-depth profiles on Europe, the Americas and Asia/Pacific
- Feedstocks
- Biodiesel production processes
- Production costs
- Biodiesel as an alternative to diesel fuel
- Technological improvements
- Environmental aspects
- Diesel/biodiesel vs. gasoline/fuel ethanol
- Trade issues
- Prospects for world biodiesel market development
 - Food vs. fuel debate
 - The impact on feed production
- Operational biodiesel production capacities worldwide
- Biodiesel production capacity under construction and in planning
- Over 70 tables, graphs and charts



Available in print and on CD

World Biodiesel Markets The Outlook to 2010

The world biodiesel industry is still in its infancy but evolving rapidly. World output in 2007 is likely to reach 8.4 million tonnes, valued at about US\$7billion. By 2010, total biodiesel production could be as high as 20 million tonnes. High fuel prices and generous regulatory support have given the sector

healthy margins and relatively short investment payback times. The success enjoyed by the first movers, and bright prospects for future growth, are attracting investors from agribusiness, as well as a diverse range of industries, such as petroleum, biotechnology, chemicals, engineering, and financial services.

Biodiesel Feedstocks

The most common feedstocks for biodiesel are:

- Soyoil - used mainly in the US and in South America
- Rapeseed and sunflower oils - used mainly in Europe
- Palm oils - used mainly in Asia

Feedstock costs vary tremendously by region and could change significantly in the future. In most biodiesel operations feedstock accounts for 80% or more of production costs, so feedstock prices have a huge effect on producers' returns.

This unique market study looks in detail at traditional feedstocks and some of the new feedstocks currently being explored, such as jatropha, and examines relative production processes and costs.

Major Biodiesel Markets

The second part of the study focuses on the major biodiesel markets around the world and considers the policy that supports and encourages the production and use of biodiesel and the constraints posed by the domestic feedstock market. It includes in-depth profiles of the following areas:

- **European Union**
Germany, France, Italy, Spain, UK, Poland, Austria
- **The Americas**
USA, Brazil, Colombia, Argentina, Canada
- **Asia/Pacific**
Malaysia, Indonesia, Australia, China, India, Philippines, Thailand, Singapore

World Trade

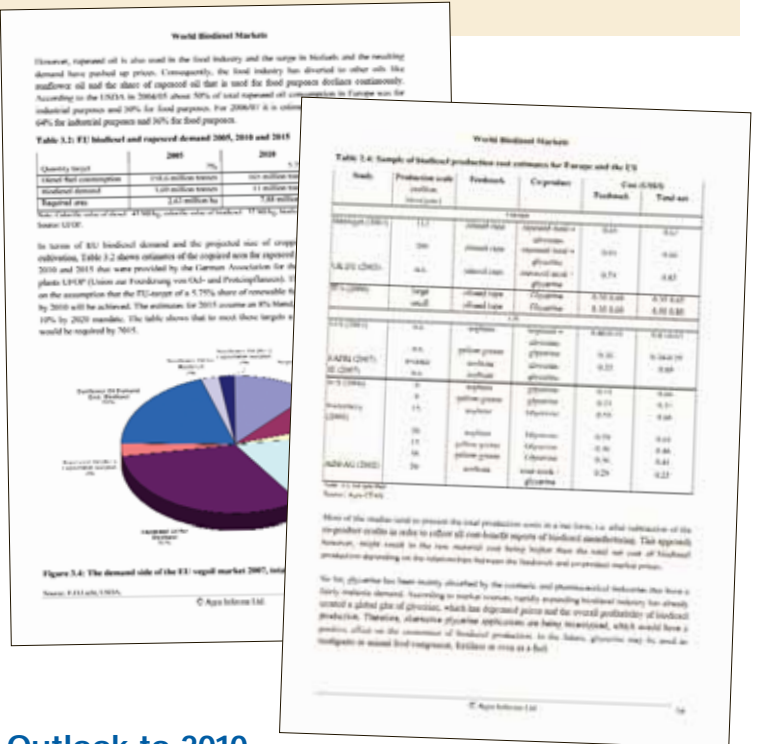
Only a small fraction of world biodiesel production is currently exchanged internationally, but this may change in the future. The EU is by far the world's largest producer of biodiesel, and has a high demand for additional feedstocks which are met through imports. The study provides an overview of world vegetable oil trading patterns which is currently of major importance to biodiesel producers as an increasing volume of vegetable oil ends up in biodiesel refineries.

Prospects for World Biodiesel Market Development

The study considers the role of biodiesel in the value chain of food and feed production and looks at:

- Food versus fuel debate - the use of land and water resources
- The interrelation of oils for biodiesel production and oil meals as animal feed ingredients

The study also considers the relative fuel properties of diesel and biodiesel and compares emissions and the effects on agriculture and the environment.



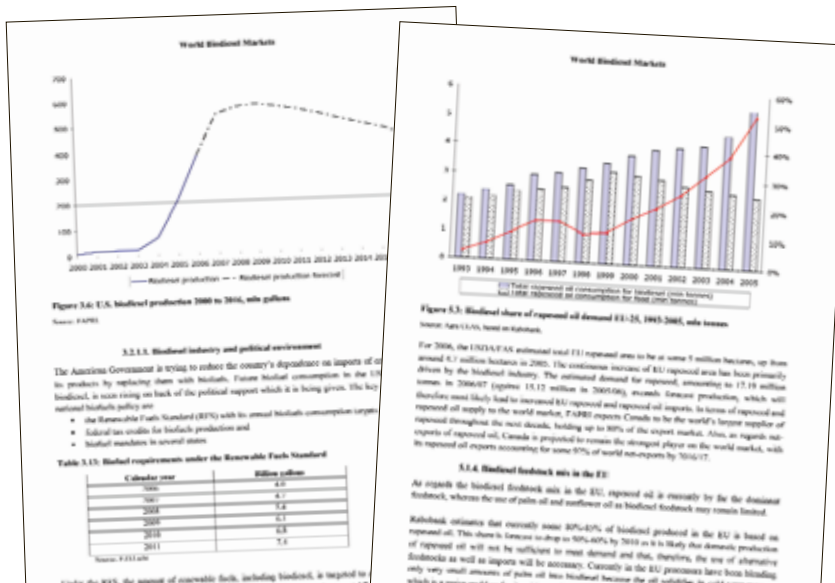
Outlook to 2010

The study considers three key factors which will be major influences in the growth of the biodiesel industry over the coming years and looks at the prospects in the main producing and consuming regions:

- Global diesel demand
 - Economic viability of biodiesel production
 - Domestic policy and political support
- European Union ● USA ● South America ● Southeast Asia

Biodiesel Production Capacities Worldwide

Current and planned biodiesel production capacities are listed in the study by country and company, and indicate the feedstock used.



Contents

Introduction

The product

- The history of biodiesel
- Feedstocks
 - Soyoil
 - Rapeseed oil
 - Sunflower oil
 - Palm oil
 - Other feedstocks
 - Comparison of yields
- Production process
- Biodiesel as an alternative to diesel fuel
 - Performance of biodiesel versus diesel fuel
 - Biodiesel standards
 - The cost of production
- Technological improvements
 - Feedstock production
 - Oil processing
- Environmental aspects of biodiesel production and consumption
 - The benefits: lower air emissions, low toxicity
 - Local emissions of air pollutants
 - GHG emissions
 - Human and eco-toxicity
 - The rate of fossil energy preservation
 - Adverse impact: agriculture
 - Agricultural operations
 - Fertilisation
 - Land conversion and loss of biodiversity
 - Environmental impact of biodiesel
- Diesel/biodiesel versus gasoline/fuel ethanol

Biodiesel markets

- European Union
 - Biodiesel production
 - Feedstock

- Biofuels policy
- Germany
 - Production
 - Feedstock
 - Biofuels policy
- France
 - Production
 - Feedstock
 - Biofuels policy
- Italy
- Spain
- Poland
- Austria
- UK
- The Americas
 - USA
 - Biodiesel industry and political environment
 - Domestic biodiesel production capacity
 - Soybeans versus maize - the feedstock market
 - The outlook
 - Canada
 - Production
 - Feedstock
 - Biofuels policy

- Brazil
 - Production
 - Feedstock
 - Biofuels policy
- Argentina
 - Production
 - Feedstock
 - Biofuels policy
- Colombia
- Asia/Pacific
 - Malaysia
 - Production
 - Feedstock
 - Biofuels policy
 - India
 - China
 - Thailand
 - Indonesia
 - Philippines
 - Singapore
 - Australia
 - Other Asia/Pacific

World biodiesel trade

- Biodiesel import tariff rates and trade issues
 - EU vegetable oil imports
 - Global vegetable oil trade

Prospects for world biodiesel market development

- Food versus fuel debate
 - Overview of the oilseed market
 - Key factors in the food versus fuel debate
 - Vegetable oil market
 - Biodiesel feedstock mix in the EU
- Biodiesel production and feed production
 - Oil meal characteristics
 - Global oilseed crushing volumes and the oil meal market
 - Conclusion
- Glycerine

Outlook for the world biodiesel market in 2010

- The European Union
- United States
- South America
- Southeast Asia

Over 70 tables, graphs and charts including

World vegetable oil production, 2002/03-2005/06, mln tonnes
 Major suppliers of soybeans, 2003-2005, '000 tonnes
 Major suppliers of rapeseed oil, 2004/05-2006/07, '000 tonnes
 Major suppliers of palm oil, 2002/03-2006/07, '000 tonnes
 Oil yields of different feedstocks
 Diesel versus biodiesel: comparison of fuel properties
 Sample of biodiesel production cost estimates for Europe and the US
 Loss and profit scenario for biodiesel production in Europe
 Exhaust emissions of biodiesel compared to fossil diesel
 GHG reduction potential of biodiesel (B-100)
 Fertiliser requirements of biodiesel feedstock crops
 Summary on environmental impact of biodiesel
 EU biodiesel production by country, 2002-2006, '000 tonnes
 Vegetable oil production in the EU-27, 2004/05-2006/07, '000 tonnes
 EU biodiesel and rapeseed demand 2005, 2010 and 2015
 Biofuels use and national indicative targets
 Biodiesel taxation in Germany
 Tax-reduced biofuel production quotas in France, '000 tonnes

Biofuel shares according to the Spanish Renewable Energy Plan
 Monthly biodiesel sales in the UK, mln litres
 U.S. biodiesel production 2000 to 2016, mln gallons
 Biofuel requirements under the Renewable Fuels Standard
 Canada - biodiesel production capacity
 Future biodiesel production capacity and demand in Brazil, tonnes
 Brazilian biodiesel tax incentives
 Argentinean biodiesel output, 2006-2010, tonnes
 Oilseeds production in South East Asia, '000 tonnes
 Biodiesel production in Malaysia, 2006-2010, tonnes
 Malaysia's palm oil production and exports, mln tonnes
 Australia biofuels excise rates
 Production volume of main oilseeds in the world, mln tonnes
 Average monthly prices for major oils, EUR/tonne, June 1999 - June 2007
 EU rapeseed and rapeseed oil balance sheet 2003/04-2005/06
 Biodiesel share of rapeseed oil demand EU-25, 1993-2005, mln tonnes
 Main world oil meal producers 2000-2005, mln tonnes
 World biodiesel production estimate 2005-2010, tonnes

World Biodiesel Markets

Overview on biodiesel production capacity under the (end of June 2007)

Country	Location	Prod. Cap. (2007)	Operational Start of Construction
GERMANY			
Campe Biofuel	Streditz	200,000	July 2007
Deutsche Bioenergie AG (DBE)	Hessendorf	50,000	January 07
Evonik Bioethanol	Lohr	50,000	02/2008
EUROPE			
Avicel	Stines	100,000	January 07
Bio-Oleum	Mühlberg	75,000	April 07
Archimede Bioenergie GmbH (ABG)	Zell	110,000	N.A.
Totum Bioeth	Graf	30,000	N.A.
BioEnergy AG (AG) BioEnergy	Burglind	50,000	2007
Biofuel Plant 1	Levernau	300,000	N.A.
Biofuel 100 GmbH	Mettach	100,000	N.A.
ABP	Münster	300,000	N.A.
Delta Bioener	Driftwaded	100,000	N.A.
AGCO	Deppendorf	170,000	N.A.
Andromed Bio	Wessmann	20,000	N.A.
Walden Bioenergie AG (WBG)	Neuenberg	80,000	N.A.

World Biodiesel Markets

2. The product

Biodiesel is a cleanburning, renewable diesel replacement fuel obtained from vegetable oils or animal fats. Both, diesel and its substitute, have a variety of applications, such as road transportation as well as in heating, industry and for electric power generation and heating.

2.1. The history of biodiesel

The history of biodiesel is as long as the history of the diesel engine itself. Having experimented with a number of fuels, a German engineer, Rudolf Diesel, designed a successful prototype engine powered by peanut oil in 1893. He claimed that "the use of vegetable oils for engine fuels may seem insignificant today, but such oils may become, in the course of time, as important as petroleum and the coal-oil products of the present time".

Nevertheless, in the early 1900s, when abundant sources of coal and oil were available, diesel engines manufactured from petroleum diesel, which was a less costly alternative to the first based on vegetable oils. This more effectively excluded the opportunity to power diesel engines on a mass scale with renewable, vegetable oil for the following 60 years.

Figure 2.1: World vegetable oil production, 2002/03-2006/07, mln tonnes

Source: UNCTAD

The oil crisis and energy supply concerns of the 1970s renewed interest in biodiesel. In 1979, in South Africa, research on canola oil extraction and refining was initiated. By 1981 the production process for quality engine tested biodiesel was completed and an American company, Conduco, obtained the technology. In November 1987 it built the first pilot plant for biodiesel and in April 1989 it built the

Table 2.1: Summary on environmental impact of biodiesel

Category	Positive impact		Impact Neutral		Potential
	GHG	Other	GHG	Other	
GHG emissions	✓				
Land use					
Water and energy					
Food usage					
Transportation					
Land conversion					
Human and eco-toxicity					
GHG emissions					

F.O. Licht is the leading soft commodity analyst with over 140 years' experience and produces a range of regular market reports which include:

- World Ethanol and Biofuels Report
- European Ethanol Price Report
- World Biodiesel Price Report
- World Grain Markets Report
- International Sugar & Sweetener Report
- World Molasses & Feed Ingredients Report
- International Coffee Report
- World Tea Markets Monthly

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For more information go to www.agra-net.com or e-mail marketing@agra-net.com or phone +44 (0) 20 7017 7500.

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We work extensively with our sister company **F.O. Licht**, the leading international commodity analyst and information provider in the biofuels and ethanol sector, to provide independent advice and analysis for the global biofuels and ethanol industry. Our unrivalled understanding of the international biofuels and ethanol industry spans the entire length and breadth of the biofuels and ethanol value chain, from feedstock to fuel. We are uniquely placed to offer a wide range of consulting services, including:

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- Biofuels and agricultural policy analysis and business impact assessments
- Due diligence market, economic and financial reports and support
- Plant feasibility studies and support
- Scenario planning/sensitivity analysis
- Global market information and sector reviews
- Agriculture/feedstock analysis

For more information on Agra CEAS research and consultancy services please go to www.ceasc.com or e-mail info@ceasc.com or phone +44 (0) 1233 812181.

Yes!

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