## Opportunities in Biodiesel, 2006 to 2010

A syndicated report designed to provide subscribers with high-valued information and insights into

- Current and future demand for Biodiesel
- Trends and forecast
- Manufacturing economics and pricing
- Biodiesel industry analysis
- Business opportunities in Biodiesel



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#### **Opportunities in Biodiesel, 2006 to 2010**

#### BACKGROUND

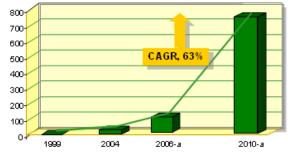
Although the biodiesel industry is in the introductory stage of it life cycle, biodiesel is big news and quickly becoming big business. Why? Because following the introductory stage of a product's life cycle it moves into the growth stage. And when that happens, there is money to be made. Well, we are there.

Where once biodiesel was an industry characterized as a niche market served by many small regional plants, today it's growing fast and gaining the attention of big fleets and major oil companies. One reason for the unprecedented growth in demand is EPA regulations that took effect in 2006. These regulations significantly reduce the allowable sulfur content in over-the-road diesel fuel and strongly favor biodiesel because it's sulfur free. In addition, the Environmental Protection Act (EPACT) regulations also allow energy tax credits for fleet owners that use biodiesel. These tax incentives, along with current and pending regulations, are spurring unprecedented growth in biodiesel demand. Because of

this, some forecasts suggest biodiesel demand will reach over 700 million gallons by 2010, up from an estimated 100 million gallons in 2006. This represents an average annual compounded growth rate in demand of a stunning 63%, as shown in Figure 1.

The installed/planned capacity of biodiesel has increased by an order of magnitude after these laws have gone in to effect. The growth of biodiesel industry is a boom to the

Figure 1 Biodiesel Moves into Growth Stage of Lifecycle



soy growers especially the farmers in the mid-west as they see the rise in the soy bean oil prices.

Biodiesel offers significant environmental benefits in terms of reduction of emissions when blended with diesel or used as B100. The automotive industry also recognized the benefits of the use of biodiesel and embraced it.

This report will analyze the impact of biodiesel growth on soy bean oil availability and the challenges it presents to the fuel distribution. The report will also examine the alternate feedstocks for the production of biodiesel, especially palm oil.



#### **REPORT BENEFITS**

This is a comprehensive report on the emerging biodiesel industry and is designed to provide objective analysis of the industry, insights, trends and market forecast to various industry participants.

Specifically this report will provide subscribers with an objective assessment of the biodiesel market, including an in-depth analysis of both supply and demand. The benefits of subscribing to this report include:

- Data on current and forecast biodiesel demand
- Identification of key end-use markets for biodiesel and demand drivers in these end-use industries
- Information on manufacturing economics and pricing
- Insights into feedstock supply issues and alternatives
- An understanding of the distribution challenges and potential solutions bio -diesel presents to the market
- Assessment of financial risks due to incentives by federal government and regulatory changes
- An independent assessment of strengths, weaknesses, opportunities, and threats in the biodiesel market

### This is a must-read report for all stakeholders in the biodiesel business, including...

- Investment banks, venture capitalists and law firms
- Soybean farmers and co-ops
- Biodiesel industry feedstock suppliers, manufacturers and chemical suppliers
- Biodiesel marketers and distributors
- > Petroleum refiners

This report benefits all the industry participants who are currently in the biodiesel space or who are contemplating to actively participate in the biodiesel industry. The objectivity and analysis provide insights to help industry participants to make knowledgeable decisions.

#### SCOPE

The geographic scope of this report is limited to the U.S., however, the growth of the biodiesel industry in Europe will be given special attention as Europe is ahead when compared to the rest of world in promoting the use of biodiesel through regulations and incentives.

This report will compare the properties of various biodiesel blends and their compatibility with the conventional ULSD diesel for light duty vehicles. Various batch and continuous production technologies for biodiesel will be compared and technology suppliers will be profiled in addition to soy crushing suppliers.

The manufacturing economics will assess the typical production costs of biodiesel along with sensitivity analyses of capacity and soy bean oil price based on a representative analysis of plants located on the gulf coast.

The supply/demand section will analyze the biodiesel capacities along the lines of conventional PAD districts to follow the diesel market. Various end-use market segments including transportation, industrial, residential and power generation will be analyzed to forecast the growth and assess the supply vs. demand balance.

The report will summarize our findings by analyzing the opportunities for biodiesel growth, the limiting factors and also the industry consolidation that is expected in the next few years. The regulatory impact on future growth and sustainability with/without incentives will be addressed as well. In the end, the growth of the biodiesel industry in the U.S. and its impact on the rest of the world will be assessed.

#### METHODOLOGY

The foundation of the report will be primary research conducted during the third quarter of 2006. This research will include phone and field interviews, survey, and other market research mechanisms used to gather information not necessarily available in the public domain.

The interviews and surveys will focus on obtaining data pertaining to insights and opinions on the effective utilization of biodiesel. The Petroleum Trends International, Inc. project team has a strong background in the understanding and utilization of biodiesel, market size and segmentation, manufacturing economics, and strategic and tactical planning.

In addition to primary research, the report will include information gathered from such secondary sources as Internet websites, trade magazines, associations and other public domain publications and channels.

#### PRICE AND PUBLICATION DATE

The pre-launch price for **Opportunities in Biodiesel, 2006 to 2010** is \$6,500 (US). This price will be extended to subscriptions received prior to August 31, 2006. The post launch price, after August 31, 2006, is \$10,500 (USD).

Assuming a sufficient number of subscribers to this report are obtained by July 31, the study will be delivered in October.

The report will include an estimated 175 pages of text, charts, tables. In addition, charter subscribers (those subscribing prior to August 31, 2006) will be entitled to one hour of free telephone consultation.



#### 1. Executive Summary

#### 1. Introduction

#### 2. Regulatory issues and tax incentives

- 2.1. Incentives and credits
- 2.2. Review of various federal and state regulations
- 2.3. Future of incentives

#### 3. Products and properties

- 3.1. B2
- 3.2. B10
- 3.3. B20
- 3.4. B100

#### 4. Feedstocks

- 4.1. Biodiesel feedstocks
- 4.2. Crushing capacity
- 4.3. Competing uses
- 4.4. Feedstock pricing
- 4.5. Acreage availability and risks
- 4.6. Impact of Ethanol industry

#### 5. Manufacturing Technology

- 5.1. Technology suppliers
- 5.2. Byproduct glycerin
- 5.3. New trends in biodiesel technology
- 5.4. Major technology suppliers

#### 6. Supply

- 6.1. Capacity by location
  - 6.1.1. By manufacturer
- 6.2. Forecast capacity 2006 to 2010 6.2.1. By location

#### 7. Manufacturing economics

- 7.1. Representative cost analysis
- 7.2. Sensitivity analysis to feedstock pricing
- 7.3. Capacity economics
- 7.4. Margin analysis
- 7.5. Costs of distribution

#### 8. Pricing and margins

- 8.1. Factors influencing biodiesel pricing
- 8.2. Margin analysis and profitability

#### 9. Demand by end-use application

(Details for each end-use are shown in Table 1)

- 9.1. Transportation
  - 9.1.1. Trucking
  - 9.1.2. Transit
  - 9.1.3. Passenger vehicles
  - 9.1.4. School buses
  - 9.1.5. Others
- 9.2. Industrial
  - 9.2.1. Marine
  - 9.2.2. Power generation and
    - transmission
  - 9.2.3. Mining
  - 9.2.4. Agriculture
- 9.3. Residential heating

#### 10. Supply and demand balance

- 10.1. By region
- 10.2. Biodiesel distribution
  - 10.2.1. Regional distribution
  - 10.2.2. Distribution infrastructure
  - 10.2.3. Rail car and truck
  - transportation
  - 10.2.4. Blending

#### 11. Financial analysis and opportunities

- 11.1. Profitability of the Biodiesel industry
- 11.2. Investment risks
- 11.3. Consolidation of the current fragmented industry
- 11.4. Opportunity assessment for investments
- 11.5. Financial viability of the industry

#### 12. Business opportunities

- 12.1. Outlook for the biodiesel industry12.2. Emerging local and international trends
- 12.3. Impact of new technologies
- 12.4. Integrated biodiesel companies
- 12.5. Impact of major petroleum companies

# Table 1 A) Applications B) Fuel specifications and prices C) Fuel consumption i) By type (a) Diesel (b) Biodiesel (c) Others ii) By Region D) Major customers i) Customer comments ii) Unmet needs E) Purchasing practices

#### CREDENTIALS

#### Petroleum Trends International, Inc.

Petroleum Trends International, Inc. is an independent strategic planning and market research consulting firm based in Metuchen, New Jersey. The firm specializes in lubricant and fuel issues related to market size and segmentation, new business development, manufacturing economics, competitive forces, and customer intelligence, strategic and tactical planning, and benchmarking and best practices. It assists its clients to increase sales and grow by identifying business opportunities and emerging market trends, and to achieve operational excellence and reduce costs.

#### Petroleum Trends International studies include:

- **FACTORS FOR SUCCESS IN THE MARINE FUEL AND LUBRICANTS BUSINESS UNITED STATES**
- BUSINESS OPPORTUNITIES IN DIESEL FUEL ADDITIVES UNITED STATES AND CANADA
- **LUBRICANT SUPPLIER-DISTRIBUTOR RELATIONS, 2005**
- THE OUTLOOK FOR ANTIOXIDANTS IN THE UNITED STATES' LUBRICANTS AND FUELS BUSINESS
- KEYS TO SUCCESS IN SELLING YOUR BUSINESS FUEL AND LUBRICANT JOBBERS
- ACHIEVING EXCELLENCE IN FUEL AND LUBRICANT SUPPLIER -DISTRIBUTOR RELATIONS
- OPPORTUNITIES IN NON-CONVENTIONAL BASE STOCKS, 2002 TO 2007

In addition to its solid consulting experience, the firm's staff, and network of industry partners has a reputation built on decades of real-world experience in lubricant sales, technical service and product development, jobber relations, blending and packaging, supply and distribution, strategic planning and other lubricant and fuel related issues.

Thomas F. Glenn, president of Petroleum Trends International, Inc. is a well known industry thought leader who is published monthly in columns with Lubes 'n' Greases magazine and Compounds magazine. In addition, his papers and articles have been published in Gas-to-Liquids News, NLGI Spokesman, and other lubricant related trade journals. Glenn is also a regular presenter and moderator at NPRA, ILMA, STLE, NLGI, and other industry trade meetings and conferences.

#### SUBSCRIPTION AGREEMENT

#### **Opportunities in Biodiesel, 2006 to 2010**

Our company (hereafter "Client") will subscribe to the Petroleum Trends International, Inc. report, **Opportunities in Biodiesel, 2006 to 2010 -** in accordance with the following terms and conditions:

- 1) The report will be published in October 2006
- 2) Petroleum Trends International, Inc. will provide Client with two (2) hard copies of the report.
- 3) The report and its content is for the sole use by Client and will be retained by Client as a confidential document for its own use and use by any affiliates and subsidiaries where Client has 51 percent or greater ownership. Client cannot, however, make the report and/or its contents available to an affiliate or subsidiary (regardless of ownership position) if affiliate or subsidiary is in the publishing business or the business of market and marketing research, or management consulting. Client agrees not to reproduce (copy, scan, or otherwise) the report or any pages within the report. The obligations defined in this agreement shall remain in effect for five (5) years from receipt of the report(s).
- 4) Client understands that if a sufficient number of subscribers to this report are not obtained, the study will be cancelled before an invoice is submitted.
- 5) The pre-launch price for the report is as \$6,500 (USD), excluding applicable sales taxes. The post launch price, after August 31, 2006, is \$10,500 (USD).

AGREED AND ACCEPTED	AGREED AND ACCEPTED
Company:	Petroleum Trends International, Inc.
Name:	Name:
Title:	Title:
Date:	Date:

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