



THE BIOFUELS BOOM

IMPLICATIONS FOR AGRICULTURE, ENERGY, AND AUTOMOTIVE

Countries and companies around the world are aggressively looking at biofuels as a way to reduce their dependence on traditional fuels. **Will energy prices and governments continue to support the development of this rapidly growing industry?**

In a new study entitled *The Biofuels Boom: Implications for Agriculture, Energy, and Automotive*, Global Insight examines how the global biofuels industry will evolve over the next 20+ years. Working with industry partners, our international team has produced one of the most complete views of the current and future market.

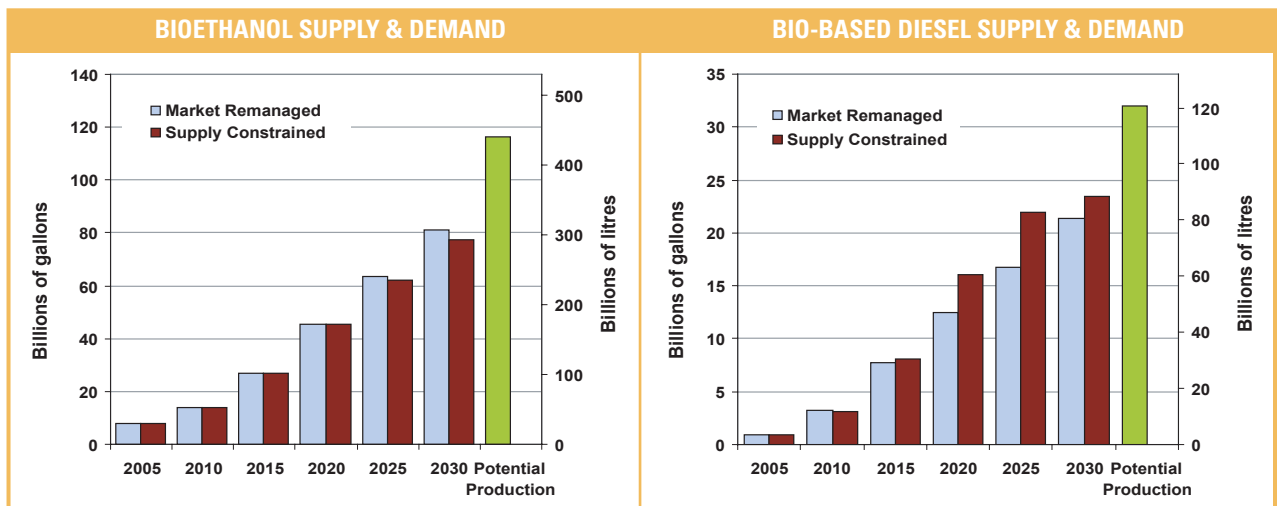
▶ KEY STRATEGIC QUESTIONS FACING THE INDUSTRY

Our report summarizes the global outlook—paying particular attention to the agriculture, energy, and automotive sectors—and answers key strategic questions, including:

- What are the global drivers of biofuels consumption?
- What role do the major economic powers play in biofuels growth?
- What is the range of long-term public policy objectives, and how do they vary by country?
- How is biofuels infrastructure evolving?
- What is the current state of technology, and how will it develop over the next 20+ years?
- What is the tipping point where biofuels will impact the agriculture, energy, and automotive markets?
- What are the expectations and limits to growth in the biofuels industry?

▶ FORECAST SCENARIOS

We used a scenario approach to investigate possible views of the future based on a range of different assumptions, including oil prices, global climate change, and technological advancements. Each scenario takes into consideration potential government policies, production and process technologies, costs, international trade issues, distribution and infrastructure issues, and global oil prices.



World demand for Bioethanol projected to reach 80 billion gallons by 2030; potential production will be sufficient.

World demand for Bio-based Diesel projected to reach over 20 billion gallons by 2030; potential production will be sufficient.

▶ KEY ACTIVITIES AND DELIVERABLES

- Final Report: Analysis and Results, Data CD, and Web-based Data Access
- On-site Presentation of Study Results

▶ FINAL REPORT: OUTLINE

- **Executive Summary**
- **Oil Prices and Scenarios**
 - Possible Future Oil Price Paths
 - Scenario Assumptions
- **Government Policy: Major Biofuels Driver**
 - Policy Goals Are Evolving
 - Review of Existing Biofuels Policies
 - Assumptions About Future Policy Development
- **Agriculture Sector Response**
 - First-Generation Ethanol Boosted by Gains in Yields
 - Food versus Fuel: Some Limitations, Especially for Bio-based Diesels
 - Agriculture Industry's Future Role in Biofuels
- **Biofuels Technology Screening and Status**
 - Feedstock Screening Summary
 - Technology Screening Summary
 - Biomass Propagation, Growth, Harvesting, and Collection
- Biomass Pretreatment
- Biomass Conversion: *Biochemical (Sugar) Route, Thermochemical Route – Gasification, and Thermochemical Route – Pyrolysis*
- Bio-based Diesel and Renewable Diesel
- Biobutanol
- **Lifecycle Greenhouse Gas Emissions: An Emerging Driving Force For Biofuels**
- **Biofuels Economics**
 - Biofuels Prices Relative to Petroleum
 - Cost Analysis/Cost Escalators
 - Experience Curves
 - Biofuels Costs: Results
 - Biofuels Margins: Profitability Comparisons
 - Feedstock Prices and Break-Even Values
- **Biofuels Production By Type and Region**
 - Supply Evolution
 - Projected Production Potential: Summary
 - Implications for Industry Structure: Agriculture or Refining?
- **Biofuels Demand: Overview and Analysis**
 - Biofuels Requirements Are Increased Around the World
 - Total Motor Fuel Demand Growth Will Be Limited
 - Deviations in Supply Constrained Scenario
- **Regional Demand and Supply Outlook**
 - Regional Ethanol Demand and Potential Production
 - Regional Bio-based Diesel Demand and Potential Production
- **Refining Implications**
 - Refining Industry Impacts: Ethanol Blending and Biobutanol
 - Refiners: Some Synergies
- **Automotive Industry Response**
 - Flex-fuel Vehicles
 - Ethanol Blends
 - Bio-based Diesel Blends
 - OEMs: Biofuel Conclusions
 - Fuel Efficiency Improvements

▶ FOR MORE INFORMATION

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THE POWER OF PERSPECTIVE

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