Biofuels Value Chain Service (BVCS)

Comprehensive global biofuels, feedstocks and credit/ticket markets analysis and forecasting to inform strategic decisions

August 2020
Introduction to IHS Markit
Harnessing the deepest sources of information, analytics and expertise across industries that drive economies worldwide

New Intelligence: A comprehensive view of risk, opportunity and financial impact to drive future success.

IHS Markit provides leaders from multiple industries with the perspective and insights they need to make well-informed decisions with greater confidence and stay ahead of their competition.

Who we are:

- 16,000 colleagues globally
- 120+ offices globally
- 25+ countries globally
IHS Markit Expertise

Energy
Strategic insights & advisory services across all regions & fuel types, from geopolitics & upstream exploration through downstream fuel (including biofuels) & end-use markets

Maritime & Trade
Live ship positions, merchant & military ship identification; & ship owners, operators & manager databases

Financial Markets & Data Services
Information, analytics & solutions for firms operating in financial markets

Agribusiness
Fertilizers, crop science, animal health, food & agricultural commodities, biofuels food & agricultural policy

Economics & Country Risk
Country & economic analysis, with long-range economic forecasts & robust country & sovereign risk models

Digital & Web Solutions
Markit Digital advances the industry with design, technology & data innovation - building world-class websites, mobile apps & report capabilities

Chemical
Chemical market insight, pricing & long-term forecasts, process evaluations, company, capacity & supply-demand data & analysis

Automotive
Project planning & development, manufacturing & purchasing, new vehicle sales & marketing analysis & advisory

Product Design & Engineering
Standards, codes & specification; design tools & methods, & engineering & technical references
Biofuels Value Chain Service – Long-term clarity in a rapidly evolving sector

Maintain perspective and anticipate longer-term trends in the ever-changing biofuels markets

- Biofuels have been around for many years, but recent industry momentum has accelerated as decarbonization pressure and other trends have added support for expanding the sector.
- BVCS supports clients’ medium and long-term strategic decision-making regarding not only biofuels themselves, but also around their feedstocks and critically important supporting credit/ticket markets.
- The service enables new biofuels investment capacity planning and informs strategic sourcing and marketing decisions.
- BVCS looks beyond complimentary market news and short-term price discovery, to a more comprehensive, integrated view encompassing the entire biofuels value chain:
  - Extensive data supplemented with deep market expertise and analysis to give clients a unique biofuels picture
    - Fundamentals-based, medium to long-term analysis of biofuels markets and credit/ticket markets, with coverage of feedstocks markets as they apply to biofuels.
    - Supply/demand and price forecasts, with full accompanying analysis of market drivers and dynamics.
    - Bringing together interlocking analysis across the biofuels value chain:
      - **Upstream**: Feedstock markets directly related to biofuels
      - **Biofuels-Direct**: Biofuels supply/demand, and credit/ticket incentives
      - **Downstream**: Refined products demand markets, competitiveness versus oil and gas incumbents, regulatory mandates

Adjacent markets and **Biofuels Value Chain Service coverage**:

- Crude oil markets
- Traditional refined product markets
- Agricultural (and waste) markets
- Biofuels markets
- Credit/ticket markets
Fundamental insights to address market problems critical to biofuels and adjacent sectors:

**Key Market Problems:**
- How will structural biofuels policy and regulatory changes affect medium/long-term biofuels market fundamentals?
- Challenging to plan biofuels capacity investment in an uncertain demand and policy environment
- Managing risk and seizing opportunities in opaque credit/ticket markets, yet understanding their future evolution is of critical importance
- Developing medium/longer-term biofuels feedstock sourcing strategy in light of shifting demand trends, proliferating feedstocks, and challenged agricultural markets
- How can existing assets and infrastructure (including traditional oil refining assets) be most effectively employed—are there opportunities in the biofuels sector?
- How will biofuels sector development potentially affect related agricultural markets?
- What is the potential for new feedstocks, production technologies, and/or end uses to disrupt the biofuels or even wider transportation fuel markets?
- What are the future prospects for biofuels-related investment, where can I identify future investment opportunities in this constantly evolving sector?

**Biofuels Value Chain Service solution:**
- BVCS helps clients understand evolving regulatory environments and analyses their impact on the key components across the value chain.
- Develop strategies on how much biofuels production capacity to develop, based on the combination of biofuels demand forecasts, credit/ticket market opportunities, and regulatory compliance concerns.
- Unique forward-looking coverage of biofuels credit/ticket markets, including long-term price forecasts and visibility on how they will influence biofuels markets in future.
- Develop feedstocks sourcing strategies by understanding the most cost-effective feedstock mix sufficient for expected biofuels production.
- Assess new trends such as leveraging/converting existing oil refining assets to biofuels production and build insight into planning for future demand/supply of biofuels and associated infrastructure.
- Anticipate changes in magnitude of demand from biofuels sector that may impact the agricultural sector (agricultural prices, land use, transport rates).
- Assess new trends such as the emergence of renewable diesel and its indirect impact on other biofuel products, or the emergence of niche feedstocks and end-use sectors.
- BVCS end-to-end value chain coverage and integrated medium to long-term view fortified by adjacent IHS Markit services and expertise provides valuable insight to investors and financial professionals.
<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Update cadence</th>
<th>Description</th>
<th>Coverage</th>
<th>Periodicity</th>
<th>Data bounds</th>
<th>Launch phase</th>
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<tbody>
<tr>
<td>Biofuels Supply/Demand Outlook</td>
<td>Annually</td>
<td>Data publication with historical and forecast supply/demand outlook and price outlook deliverables</td>
<td>Ethanol, FAME Biodiesels, Renewable Diesel (HVO)</td>
<td>Years</td>
<td>2010-2050</td>
<td>Phase 1</td>
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<td>Biofuels Price Outlook</td>
<td>Quarterly</td>
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<td>Phase 1</td>
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<tr>
<td>Feedstocks Demand Outlook</td>
<td>Annually</td>
<td>Data publication with historical and forecast supply/demand outlook and price outlook deliverables</td>
<td>Sugar, Corn, Rapeseed/Canola Oil, Soybean Oil, Palm Oil, Used Cooking Oil, Animal Fats/Tallow</td>
<td>Years</td>
<td>2010-2050</td>
<td>Phase 1</td>
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<tr>
<td>Feedstocks Price Outlook</td>
<td>Quarterly</td>
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<td>Phase 1</td>
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<tr>
<td>Mandate Tracker</td>
<td>Evergreen</td>
<td>Data publication with country-level detail on blend mandates by biofuel product and jurisdiction – with comparison against historical and forecast consumption</td>
<td>Announced/forecasted blend mandates and level of compliance</td>
<td>Years</td>
<td>N/A</td>
<td>Phase 1</td>
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<tr>
<td>Capacities Database and Analysis Tool</td>
<td>Evergreen</td>
<td>Interactive tool for analysis and interrogation of biofuels capacities data, enabling assessment of capacity by geography, feedstocks, facility level detail</td>
<td>Global biofuels-producing plants - fields include date of construction, capacity by type of biofuel produced and by feedstock used</td>
<td>N/A</td>
<td>N/A</td>
<td>Phase 1</td>
</tr>
<tr>
<td>Credit/Ticket Market Outlook</td>
<td>Quarterly</td>
<td>Forecasts of prices by market, with written analysis of market dynamics and impact on biofuels market</td>
<td>North America (Europe to be developed at later date)</td>
<td>Years</td>
<td>2010-2050</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Regional Legislative Overviews</td>
<td>Evergreen</td>
<td>Description and analysis of key regulations driving biofuel market development</td>
<td>Europe, North America, Latin America, Asia</td>
<td>N/A</td>
<td>N/A</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Regional Profiles</td>
<td>Evergreen</td>
<td>Forward-looking written analysis of integrated biofuels, feedstocks, and credit/ticket markets</td>
<td>Europe, North America, Latin America, Asia</td>
<td>N/A</td>
<td>N/A</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Strategic Insights</td>
<td>Ad Hoc</td>
<td>Short-form analytical pieces that dig into key key topics</td>
<td>Trends in biofuel types and feedstocks, legislative changes, company strategies, societal issues</td>
<td>N/A</td>
<td>N/A</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Feedstock Profiles</td>
<td>Quarterly</td>
<td>Individual publications by feedstock, with detailed discussion of the current and future biofuels-importance of each, and associated considerations</td>
<td>Sugar, Corn, Rapeseed/Canola Oil, Soybean Oil, Palm Oil, Used Cooking Oil, Animal Fats/Tallow</td>
<td>N/A</td>
<td>N/A</td>
<td>Phase 3</td>
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Biofuels Value Chain Service Deliverables

Mandate Tracker

Capacities Database

Biofuels Supply-Demand Outlook
IHS Markit Biofuels Services Portfolio
Biofuels Value Chain Service completes IHS Markit’s Biofuels Portfolio

IHS Markit services provide comprehensive market intelligence for the biofuels sector, enabling both decision-making relating to current procurement and short-term trading through market reporting and price discovery tools, and medium to long-term strategic planning via comprehensive analysis and fundamentals forecasts.

With the launch of BVCS, our end-to-end coverage of feedstocks, credit/ticket markets, and regional biofuel markets is unique to the market:

- Supply/demand and price forecasts, with full accompanying exposition of analysis and core industry drivers.
- Profiles for key feedstocks analyzing their current and future importance to biofuels.
- Unrivaled news, price discovery, and historical data on the biofuels and feedstock markets.
- Consulting services for bespoke client projects.
### IHS Markit biofuels portfolio combined market coverage

#### Feedstock Markets

**Market News/Developments**
Daily, weekly and biweekly reporting and assessment along with ad-hoc strategic insight pieces on major developments

**Profiles & Market Analysis**
Regional profiles cover applicable feedstock markets

**Prices**
Daily, weekly, biweekly and quarterly current and historical pricing and forecast to 2050

**Demand Outlook**
Annual historical and forecast to 2050

#### Biofuels Markets

**Market News/Developments**
Daily, weekly and biweekly reporting and assessment along with ad-hoc strategic insight pieces on major developments

**Regulatory/Policy Coverage**
Daily, weekly and biweekly reporting and assessment plus mandate tracker and regional regulatory overviews

**Prices**
Daily, weekly, biweekly and quarterly current and historical pricing and forecast to 2050

**Capacities Databases**
Database and analysis tool

**Supply/Demand Outlook**
Annual historical and forecasts for 18-months (includes trade) and to 2050 (supply/demand only)

**Profiles & Market Analysis**
Country profiles, competitor profiles and regional profiles

#### Credit/ Ticket Markets

**Market News/Developments**
Daily and biweekly reporting and assessment along with ad-hoc strategic insight pieces on major developments

**Profiles & Market Analysis**
Regional profiles cover applicable credit/ticket markets

**Prices**
Daily and quarterly current and historical pricing and forecast to 2050

**Market Outlook**
Quarterly historical and forecast to 2050
# IHS Markit biofuels portfolio feature comparison

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<tbody>
<tr>
<td><strong>Carbon Market Report</strong></td>
<td>Americas</td>
<td>Daily</td>
<td>Daily Reporting and Assessment</td>
<td>Daily Current + Historical</td>
<td>-</td>
<td>-</td>
<td>Daily Reporting and Assessment</td>
<td>Daily Current + Historical</td>
<td>Daily Reporting and Assessment</td>
<td>-</td>
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<td>Daily Reporting and Assessment</td>
<td>Daily Current + Historical</td>
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<tr>
<td><strong>Ethanol and Biofuels Information Service</strong></td>
<td>Americas</td>
<td>Daily</td>
<td>Weekly/Biweekly Reporting and Assessment</td>
<td>Weekly/Biweekly Current + Historical</td>
<td>-</td>
<td>-</td>
<td>Weekly/Biweekly Reporting and Assessment</td>
<td>Weekly/Biweekly Current + Historical</td>
<td>Biweekly Reporting and Assessment</td>
<td>Database</td>
<td>Country Profiles + Competitor Profiles</td>
<td>Biweekly Reporting and Assessment</td>
<td>-</td>
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<tr>
<td><strong>Ethanol &amp; Biofuels Economics</strong></td>
<td>Global</td>
<td>Weekly/Biweekly</td>
<td>Weekly/Biweekly Reporting and Assessment</td>
<td>Weekly/Biweekly Current + Historical</td>
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<tr>
<td><strong>Biofuels Value Chain Service</strong></td>
<td>Global</td>
<td>Evergreen, Quarterly, Annual</td>
<td>Quarterly Strategic Insight pieces on major developments</td>
<td>Quarterly Historical and Forecast to 2050</td>
<td>Annual Historical and Forecast to 2050</td>
<td>Global Feedstock Profiles</td>
<td>Ad-Hoc Strategic Insight pieces on major developments</td>
<td>Quarterly Historical and Forecast to 2050</td>
<td>Annual Historical and Forecast to 2050</td>
<td>Mandate Tracker + Regional Regulatory Overviews</td>
<td>Database + Analysis Tool</td>
<td>Regional Value Chain Profiles</td>
<td>Ad-Hoc Strategic Insight pieces on major developments</td>
<td>Quarterly Historical and Forecast to 2050</td>
<td>Quarterly Updates</td>
<td>Regional Value Chain Profiles</td>
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