

Bioethanol Market Assessment, By Feedstock [Starch-Based, Sugar-Based, Cellulose-Based, Others], By Fuel Generation [First Generation, Second Generation, Third Generation], By End-user Industry [Automotive and Transportation, Cosmetics, Pharmaceuticals, Others] By Region, Opportunities and Forecast, 2018-2032F

Market Report | 2025-02-19 | 237 pages | Market Xcel - Markets and Data

AVAILABLE LICENSES:

- Single User License \$4500.00
- Muti-User/Corporate Licence \$5700.00
- Custom Research License \$8200.00

Report description:

Global bioethanol market is projected to witness a CAGR of 5.72% during the forecast period 2025-2032, growing from USD 85.42 billion in 2024 to USD 133.30 billion in 2032.

The global bioethanol market is experiencing revolutionary expansion, driven by several factors emphasizing sustainability and environmental responsibility. Growing blending requirements from regulatory authorities and positive initiatives, along with increasing environmental concerns about the harmful effects of fossil fuel deterioration, are significant influences. These factors transform the energy domain by pressuring sectors to embrace renewable options that enhance energy security while simultaneously addressing climate change. The future of the bioethanol industry remains positive, reflecting a broader commitment to sustainability as governments worldwide enact supportive legislation and consumers become more environmentally conscious.

For instance, in July 2024 the Indian government announced the Pradhan Mantri JI-VAN Yojana, which aims to support the establishment of Second Generation (2G) bioethanol projects in the country. The scheme strives to provide remunerative income to farmers, address environmental pollution, create local employment, and contribute to India's energy security and self-reliance. It also supports the development of advanced biofuel technologies and promotes the Make in India Mission, aiming to achieve net-zero GHG emissions by 2070.

Increasing Favorable Initiatives and Blending Mandates by Government Entities

Globally, governments are implementing policies to encourage using renewable energy sources and lower greenhouse gas emissions. To improve market stability and stimulate investment in bioethanol production facilities, these programs frequently incorporate mandates that demand a specific percentage of bioethanol to be blended with gasoline. Additionally, the demand for

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

biofuels such as bioethanol is being driven by growing environmental concerns about the use of fossil fuels. Cleaner energy alternatives are urgently needed as people become more conscious of climate change and its effects. Compared to conventional fossil fuels, bioethanol, made from sustainable biomass sources, offers a competitive substitute that can drastically reduce carbon emissions. Government incentives to stimulate using renewable energy sources further promote this shift towards sustainability. North America is one of the prominent markets for bioethanol due to its large production capacity and government encouragement of renewable fuels. With massive expenditures in technology and infrastructure to enable its production, the United States is the world's largest consumer of bioethanol.

In June 2023, the United States Environmental Protection Agency announced a final rule to establish biofuel volume necessities and corresponding percentage standards for cellulosic biofuel, biomass-based diesel (BBD), advanced biofuel, and total renewable fuel for 2023-2025. Additionally, the regulation establishes a supplemental volume requirement of around 950 million liters (250 million gallons) of renewable fuel for 2023 in response to a court remand of the 2016 annual rule.

Rising Shift Towards Cleaner Energy Solutions for Environmental Protection Drives Market Growth

The spiraling awareness among the public regarding various environmental issues linked to fossil fuel usage is driving the bioethanol market across the globe. With increasing awareness of air pollution, global warming, and other harmful impacts of fossil fuels, finding more alternatives to clean energy becomes essential. Burning fossil fuels emits harmful chemicals that degrade air quality and contribute to several health issues. These problems are caused by accumulated greenhouse gases, which lead to extreme weather patterns, ecosystem changes, and global warming.

Numerous government groups and private companies worldwide are interested in finding more environmentally friendly solutions to these concerns. Bioethanol is one of the leading sources of green fuel, derived from renewable biomass feedstocks such as corn and sugarcane, thereby reducing emissions. The increasing popularity of bioethanol stems from its cleanliness as an alternative fuel, which supports global sustainability targets in light of policies enforcing stricter emission levels and mandating blending requirements with renewable fuels.

For instance, in September 2022, the Dutch biobased chemical start-up Syclus BV, Maastricht, was acquired by CropEnergies AG, Mannheim, Germany, holding a strong 50% of the enterprise's share capital. The investment in building an industrial-scale facility to produce renewable ethylene from renewable ethanol amounted to USD 1.90 million. Ethylene is a common chemical used in the chemical industry, especially in the plastics and polymers industries, and is produced from fossil fuels such as natural gas and crude oil.

Automotive and Transportation Stands as the Largest End-user Market for Bioethanol

The largest end-user segment for bioethanol is the automotive industry, where it is primarily used as a fuel blend in gasoline formulation. This makes bioethanol attractive for enhancing fuel performance while lowering harmful emissions due to its compatibility with conventional internal combustion engines. Indeed, one of the best-selling fuel blends is E10, which consists of 10% ethanol blended with 90% gasoline. The increasing adoption of flexible fuel vehicles, which can run on higher blends of ethanol, such as 85%, supports this trend.

The automotive sector will be significant in driving bioethanol demand; consumers are seeking greener alternatives for transportation, and governments may encourage cleaner fuels through regulations or subsidies. Moreover, major automobile manufacturers are investing in research and development to improve engine efficiency with higher ethanol blends, further strengthening the position of bioethanol to play a pivotal role in achieving sustainability goals within the transportation sector. In February 2023, United Airlines, Tallgrass, and Green Plains Inc. formed a joint venture, Blue Blade Energy, to develop and commercialize Sustainable Aviation Fuel (SAF) technology using ethanol as its feedstock. The technology could provide enough SAF to fly over 50,000 flights annually, between Chicago and Denver. Also, it will offer a low-carbon alternative to traditional jet fuel with up to 85% lower lifecycle greenhouse gas emissions. Blue Blade Energy is expected to create the United's largest source of SAF, providing up to 510 million liters (135 million gallons) of fuel annually.

North America Dominates the Global Bioethanol Market

North America is currently the leading consumer in the global bioethanol market since a considerable portion of this region has a high production capability and is considered relatively lenient to the bioethanol manufacturers. The region is one of the leading producers and a massive consumer of bioethanol, mainly owing to its agricultural base with sufficient availability of corn, as a basic feedstock, and due to well-established infrastructures related to the manufacture of biofuels and their distribution network.

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Additionally, government policies are the main drivers of the North American bioethanol market growth. In this regard, the United States has its Renewable Fuel Standard program, which requires gasoline to be blended with renewable fuels, including bioethanol. These policy measures make the consumption of biofuels favorable and provide economic incentives for producers as market conditions begin to fall into place. The serious cut in the emission of greenhouse gases is quite convergent with the requirements of consumers, who seek sustainable alternative solutions for energy.

In August 2023, the U.S. clean energy advisory and investment firm Allotrope Partners and bioethanol technology provider Axens North America reached a partnership with Sumitomo Corporation through its wholly owned subsidiary Sumitomo Corporation of Americas to investigate the commercial production of bioethanol made from woody biomass in the State of California. The project intends to generate 60,000 tons of bioethanol yearly, mostly for manufacturing bio-chemicals and Sustainable Alternative Fuels (SAF). The feedstock will be locally sourced from agricultural leftovers and forest-thinning materials to lower the risk of forest fires. As per the United States Energy Information Administration data released in November 2024, fuel ethanol exports are increasing due to strong international demand and competitive domestic prices. In the first eight months of 2024, the United States fuel ethanol exports averaged 121,000 barrels daily, marking the highest volume for any year.

Future Market Scenario (2025 - 2032F)

□□The pharmaceutical industry's increasing focus on solubility enhancement and drug delivery systems has increased the demand for bioethanol as an excipient. This surging demand can be attributed to its role as an excipient in drug formulations, its effectiveness as a disinfectant, its use in extraction and purification processes, its application in pharmaceutical R&D, and its compliance with regulatory standards, which will drive the demand in coming years.

□□Innovations in production processes will enhance efficiency and reduce costs associated with bioethanol production, making it increasingly competitive against fossil fuels.

□□Growing consumer awareness regarding environmental sustainability will drive demand for renewable fuels such as bioethanol as individuals increasingly seek greener alternatives.

□□Collaborations between governments and private sectors will be pivotal in developing the infrastructure necessary for scaling up bioethanol production and distribution networks.

□□Governments focus on blending gasoline with bioethanol globally will boost the demand for bioethanol in the years ahead.

Key Players Landscape and Outlook

The bioethanol market is supremely competitive with several key players actively shaping its growth and development. These players include major agricultural processors, renewable energy companies, and specialized biofuel manufacturers, all contributing to expanding bioethanol production and consumption. A significant portion of the market is dominated by companies that utilize various feedstocks, such as corn, sugarcane, and agricultural residues. These companies largely concentrate on maximizing bioethanol output from these feedstocks. They are investing in newer advanced production technologies that promise increased yields and cost savings, thereby improving the overall sustainability of bioethanol. Additionally, these companies support the market by operating large infrastructures for biofuel production, which include biorefineries and distribution networks. Such infrastructures are crucial for ensuring a steady supply of bioethanol needed across various industries, particularly in the automotive sector

In May 2024, Brazilian ethanol manufacturer Raizen announced the opening of a new cellulosic ethanol plant with a capacity of 82 million liters per year and an investment of around USD 230.63 million. The plant is situated in Guariba, Sao Paulo, Brazil, near Bonfirm Bioenergy Park. It will produce second-generation (2G) cellulosic ethanol using sugarcane bagasse feedstock. Raizen claimed contracts to be signed for 80% of the plant's output volumes.

Table of Contents:

- 1.□□Project Scope and Definitions
- 2.□□Research Methodology
- 3.□□Executive Summary
- 4.□□Voice of Customer
- 4.1.□□Respondent Demographics
- 4.2.□□Factors Considered in Purchase Decisions

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 4.2.1.1. Price and Availability
- 4.2.1.2. Quality and Product Specifications
- 4.2.1.3. Lead Time
- 4.2.1.4. Supply Chain
- 5. Global Bioethanol Market Outlook, 2018-2032F
 - 5.1. Market Size Analysis & Forecast
 - 5.1.1. By Value
 - 5.1.2. By Volume
 - 5.2. Market Share Analysis & Forecast
 - 5.2.1. By Feedstock
 - 5.2.1.1. Starch-Based
 - 5.2.1.2. Sugar-Based
 - 5.2.1.3. Cellulose-Based
 - 5.2.1.4. Others
 - 5.2.2. By Fuel Generation
 - 5.2.2.1. First Generation
 - 5.2.2.2. Second Generation
 - 5.2.2.3. Third Generation
 - 5.2.3. By End-user Industry
 - 5.2.3.1. Automotive and Transportation
 - 5.2.3.2. Cosmetics
 - 5.2.3.3. Pharmaceuticals
 - 5.2.3.4. Others
 - 5.2.4. By Region
 - 5.2.4.1. North America
 - 5.2.4.2. Europe
 - 5.2.4.3. Asia-Pacific
 - 5.2.4.4. South America
 - 5.2.4.5. Middle East and Africa
 - 5.2.5. By Company Market Share Analysis (Top 5 Companies and Others - By Value, 2024)
 - 5.3. Market Map Analysis, 2024
 - 5.3.1. By Feedstock
 - 5.3.2. By Fuel Generation
 - 5.3.3. End-user Industry
 - 5.3.4. By Region
- 6. North America Bioethanol Market Outlook, 2018-2032F*
 - 6.1. Market Size Analysis & Forecast
 - 6.1.1. By Value
 - 6.1.2. By Volume
 - 6.2. Market Share Analysis & Forecast
 - 6.2.1. By Feedstock
 - 6.2.1.1.1. Starch-Based
 - 6.2.1.1.2. Sugar-Based
 - 6.2.1.1.3. Cellulose-Based
 - 6.2.1.1.4. Others
 - 6.2.1.2. By Fuel Generation
 - 6.2.1.2.1. First Generation

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 6.2.1.2.2. □ Second Generation
- 6.2.1.2.3. □ Third Generation
- 6.2.1.3. □ By End-user Industry
 - 6.2.1.3.1. □ Automotive and Transportation
 - 6.2.1.3.2. □ Cosmetics
 - 6.2.1.3.3. □ Pharmaceuticals
 - 6.2.1.3.4. □ Others
- 6.2.1.4. □ By Country Share
 - 6.2.1.4.1. □ United States
 - 6.2.1.4.2. □ Canada
 - 6.2.1.4.3. □ Mexico
- 6.3. □ Country Market Assessment
 - 6.3.1. □ United States Bioethanol Market Outlook, 2018-2032F*
 - 6.3.1.1. □ Market Size Analysis & Forecast
 - 6.3.1.1.1. □ By Value
 - 6.3.1.1.2. □ By Volume
 - 6.3.1.2. □ Market Share Analysis & Forecast
 - 6.3.1.3. □ By Feedstock
 - 6.3.1.3.1. □ Starch-Based
 - 6.3.1.3.2. □ Sugar-Based
 - 6.3.1.3.3. □ Cellulose-Based
 - 6.3.1.3.4. □ Others
 - 6.3.1.4. □ By Fuel Generation
 - 6.3.1.4.1. □ First Generation
 - 6.3.1.4.2. □ Second Generation
 - 6.3.1.4.3. □ Third Generation
 - 6.3.1.5. □ By End-user Industry
 - 6.3.1.5.1. □ Automotive and Transportation
 - 6.3.1.5.2. □ Cosmetics
 - 6.3.1.5.3. □ Pharmaceuticals
 - 6.3.1.5.4. □ Others
 - 6.3.2. □ Canada
 - 6.3.3. □ Mexico

*All segments will be provided for all regions and countries covered

- 7. □ Europe Bioethanol Market Outlook, 2018-2032F
 - 7.1. □ Germany
 - 7.2. □ France
 - 7.3. □ Italy
 - 7.4. □ United Kingdom
 - 7.5. □ Russia
 - 7.6. □ Netherlands
 - 7.7. □ Spain
 - 7.8. □ Turkey
 - 7.9. □ Poland
- 8. □ Asia-Pacific Bioethanol Market Outlook, 2018-2032F
 - 8.1. □ India
 - 8.2. □ China

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 8.3. □Japan
 - 8.4. □Australia
 - 8.5. □Vietnam
 - 8.6. □South Korea
 - 8.7. □Indonesia
 - 8.8. □Philippines
 - 9. □South America Bioethanol Market Outlook, 2018-2032F
 - 9.1. □Brazil
 - 9.2. □Argentina
 - 10. □Middle East and Africa Bioethanol Market Outlook, 2018-2032F
 - 10.1. □Saudi Arabia
 - 10.2. □UAE
 - 10.3. □South Africa
 - 11. □Porter's Five Forces Analysis
 - 12. □PESTLE Analysis
 - 13. □Market Dynamics
 - 13.1. □Market Drivers
 - 13.2. □Market Challenges
 - 14. □Market Trends and Developments
 - 15. □Case Studies
 - 16. □Competitive Landscape
 - 16.1. □Competition Matrix of Top 5 Market Leaders
 - 16.2. □SWOT Analysis for Top 5 Players
 - 16.3. □Key Players Landscape for Top 10 Market Players
 - 16.3.1. □POET LLC
 - 16.3.1.1. □Company Details
 - 16.3.1.2. □Key Management Personnel
 - 16.3.1.3. □Products and Services
 - 16.3.1.4. □Financials (As Reported)
 - 16.3.1.5. □Key Market Focus and Geographical Presence
 - 16.3.1.6. □Recent Developments/Collaborations/Partnerships/Mergers and Acquisition
 - 16.3.2. □Archer Daniels Midland Company
 - 16.3.3. □Blue Biofuels Inc. (BIOF)
 - 16.3.4. □Alto Ingredients, Inc.
 - 16.3.5. □Valero Energy Corporation
 - 16.3.6. □Tereos
 - 16.3.7. □CropEnergies AG
 - 16.3.8. □Gran Investimentos SA
 - 16.3.9. □Raizen S.A.
 - 16.3.10. □SEKAB Biofuels & Chemicals AB
- *Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.
- 17. □Strategic Recommendations
 - 18. □About Us and Disclaimer

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Bioethanol Market Assessment, By Feedstock [Starch-Based, Sugar-Based, Cellulose-Based, Others], By Fuel Generation [First Generation, Second Generation, Third Generation], By End-user Industry [Automotive and Transportation, Cosmetics, Pharmaceuticals, Others] By Region, Opportunities and Forecast, 2018-2032F

Market Report | 2025-02-19 | 237 pages | Market Xcel - Markets and Data

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	\$4500.00
	Muti-User/Corporate Licence	\$5700.00
	Custom Research License	\$8200.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>
Zip Code*	<input type="text"/>	Country*	<input type="text"/>

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Date

2026-03-02

Signature

A large, empty rectangular box intended for a signature.

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com