

Cellulosic Ethanol Market Is Projected To Increase at a CAGR of Around 46.4% By 2032

The U.S. stands as the leading player in the Cellulosic Ethanol Market, presenting exceptional financial growth exceeding \$18.1 billion in absolute dollar terms

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EINPresswire.com/ -- In 2021, the [Cellulosic Ethanol Market size](#) achieved global sales totaling US\$ 980.5 million. Forecasts indicate substantial growth with an impressive Compound Annual Growth Rate (CAGR) of 46.4% expected between 2022 and 2032. By the conclusion of 2032, the market is anticipated to reach a staggering US\$ 56.3 billion in total value. Notably, the Energy Crop-based Cellulosic Ethanol segment is poised to be the primary revenue driver, with an estimated CAGR surpassing 51.9% during the period spanning 2022 to 2032.

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Market Research that Inspires Growth

Comparison of Cellulosic Ethanol Market Revenue:

The demand for Cellulosic Ethanol is driven by several key factors. Firstly, increasing prices of conventional fuels play a significant role in driving the demand for alternative energy sources like cellulosic ethanol. Secondly, the carbon dioxide emissions associated with conventional fuels contribute to global warming, making the adoption of cleaner alternatives like cellulosic ethanol more appealing. Additionally, the use of coal for energy production can result in the release of cancer-causing chemicals such as ethyl benzene, xylene, toluene, and benzene. Cellulosic ethanol can serve as a viable substitute for these hazardous substances in traditional fuels.

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Furthermore, cellulosic ethanol has the potential to create employment opportunities. This is achieved by supporting farmers who can produce the raw materials needed for ethanol production, installing new gas pumps to facilitate distribution, and implementing water-saving plant layouts to optimize resource usage.

Moreover, nations that produce cellulosic ethanol locally can benefit from cost savings by reducing their reliance on crude oil imports. This not only promotes energy security but also contributes to a more sustainable and self-sufficient energy ecosystem.

Key Companies Covered:

- Dow
- Fiberight
- GranBio
- Abengoa
- Novozymes
- BP PLC
- BlueFire Renewables, Inc.
- Beta Renewables SpA
- Shandong Longlive Bio-Technology
- Poet-DSM Advanced Biofuels LLC

Balancing the Pros and Cons: Implications of Using Food-Related Feedstock for Cellulosic Ethanol Production

Several of the plants commonly used as feedstock for cellulosic ethanol production can serve as direct human food sources or be indirectly used as animal feed. However, redirecting these crops towards cellulosic ethanol production has the potential to lead to increased agricultural activity, heightened pollution levels, and elevated food prices. This competition for resources such as land, water, and fertilizer between cellulosic ethanol production and the food sector may arise.

Consequently, the production of cellulosic ethanol could result in a range of unintended consequences. Alterations in land use practices may lead to an increase in greenhouse gas (GHG) emissions due to the greater release of carbon dioxide into the atmosphere. Notably, cellulosic ethanol feedstock cultivated in regions experiencing tropical deforestation, such as soybeans in the Amazon and palm oil in Southeast Asia, is a primary contributor to high GHG emissions. Even the use of cellulosic feedstock itself can contribute to elevated food prices, fostering agricultural expansion in underdeveloped nations while simultaneously generating greenhouse gases and harming biodiversity.

Analysis by Country

Analysis of the U.S. Cellulosic Ethanol Market

By the conclusion of 2032, the United States is anticipated to dominate the market, with an estimated value of \$18.5 billion, showcasing substantial growth potential. This projection equates to an absolute dollar opportunity of \$18.1 billion. The United States currently leads the global bioethanol production and consumption landscape, with a daily utilization of 838 thousand barrels.

Within the U.S., ethanol commands a significant presence, constituting approximately 10% of the gasoline utilized in internal combustion engines, commonly referred to as E10 fuel. E10 is compatible with all gasoline-powered vehicles. Since 2001, mid-sized work vehicles, trucks, and standard cars have been capable of utilizing E15. Ethanol concentrations exceeding 15% are restricted to flexible fuel vehicles exclusively. The Midwest region typically offers E85, a specialized gasoline blend designed for flexible fuel tanks, containing ethanol concentrations ranging from 51% to 83%.

Furthermore, the United States government extends its support for the adoption of cellulosic ethanol through its policies. Individuals who own and operate land can benefit from financial assistance under the Biomass Crop Assistance Program (BCAP; Section 9010) by growing and supplying biomass feedstock crops to advanced biofuel manufacturing facilities. Eligible feedstock producers not only receive a 50% reimbursement for expenses incurred in establishing biomass feedstock crops but also have the opportunity to receive annual payments for a duration of up to five years for herbaceous feedstock and up to 15 years for woody feedstock.

Funding opportunities are available through the U.S. Department of Agriculture's Higher Blends Infrastructure Incentive Program (HBIIIP) to support the development, modification, or enhancement of fueling equipment and infrastructure essential for the distribution of ethanol blends exceeding 10% or biodiesel blends exceeding 5%.

Market Analysis:

Companies operating in the Cellulosic Ethanol market are dedicated to enhancing the production of cellulosic ethanol while minimizing waste. Key players in the cellulosic ethanol industry include Dow, Fiberight, GranBio, Abengoa, Novozymes, BP PLC, BlueFire Renewables, Inc., Beta Renewables SpA, Shandong Longlive Bio-Technology, and Poet-DSM Advanced Biofuels LLC.

Recent developments in the Cellulosic Ethanol market include:

- In March 2022, a contract was announced between a Hyderabad-based corporation and a

farmers' organization in Latur, Maharashtra. This marks the initiation of India's inaugural ethanol production refinery project, commencing with a daily capacity of 30,000 liters.

- In January 2022, Clariant disclosed its achievement of producing cellulosic ethanol from agricultural waste at its first commercial Sunliquid facility.

- In October 2022, Stuttgart Airport conducted trials of innovative bioethanol fuel provided by CropEnergies. The testing involved a 20% renewable ethanol fuel collaboration between CropEnergies, Stuttgart Airport, and Mabanaft Deutschland, a mineral oil company.

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The Growth of Corn as a Cellulosic Ethanol Powerhouse

Corn stands as the predominant energy crop for global Cellulosic Ethanol production. The period between 2017 and 2021 witnessed a robust 42.3% surge in the demand for grains as a raw material for Cellulosic Ethanol. Even more impressive, projections indicate an expected compound annual growth rate (CAGR) of 51.9% from 2022 to 2023.

The primary feedstock for ethanol production worldwide predominantly derives from starch and sugar-based sources. These materials possess readily extractable sugars, simplifying the fermentation process and enabling the efficient production of substantial ethanol quantities.

In the United States, corn reigns supreme as the cornerstone of domestic ethanol production. The Renewable Fuel Standard (RFS) mandates the inclusion of corn ethanol as a renewable fuel, with a target volume of 15 billion gallons. This assurance of a stable corn supply ensures that there will be an ample resource to satisfy both domestic and international markets, as well as the demand for animal feed.

Decades of infrastructure development and research have significantly enhanced corn yields. Producers have cultivated a deep knowledge and expertise in corn cultivation. Maize, due to its well-established infrastructure and the proficiency of growers, naturally lends itself to new applications like bio-ethanol production.

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Contact:

US Sales Office:

11140 Rockville Pike

Suite 400

Rockville, MD 20852

United States

Tel: +1 (628) 251-1583

Sales Team : sales@factmr.com

Follow Us: [LinkedIn](#) | [Twitter](#) | [Blog](#)

S. N. Jha

Fact.MR

+1 628-251-1583

[email us here](#)

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