

Advanced Biofuel - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Advanced Biofuel Market is expected to register a CAGR of greater than 5.3% during the forecast period.

The market was negatively impacted by COVID-19 in 2020. The market has now reached pre-pandemic levels.

Key Highlights

- Over the long term, the demand for secure, sustainable, and clean energy coupled with government mandates for increasing blending in automotive fuels is expected to propel the demand for advanced biofuels globally.
- On the flip side, the lack of awareness regarding the advantages of advanced biofuels is restraining the market. Due to this, the adoption of biofuels is limited to some countries only.
- Nevertheless, research is underway to develop additional feedstocks that could be used to make biofuels, along with production processes that are safe for the environment and take less toll on it, which is likely to present many opportunities in the future.
- North America is likely to witness significant growth in the advanced biofuels market during the forecast period.

Advanced Biofuel Market Trends

Biodiesel Fuel Type to Witness Significant Growth

- Biodiesel is a mixture of monoalkyl esters of long-chain fatty acids derived from renewable biological sources such as vegetable oils. It emerged as an alternative fuel for the transportation sector in recent years.

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- The conventional method of producing biodiesel is through homogeneous catalytic transesterification. However, increased production costs associated with downstream purification steps have led to the development of more cost-effective and environment-friendly technologies. These advanced production technologies involve heterogeneous or enzymatic catalysts to produce biodiesel, as well as no catalysts in supercritical conditions.
- In the last two decades, the production and consumption of liquid biofuels increased exponentially worldwide. The rising consumption of biofuels is driven by public policies that authorize and, in many cases, advocate for their use. One of the most used instruments by major countries is biofuel use mandates.
- Indonesia, the United States, and Brazil are among the largest biodiesel producers in the world, totaling some 9.5, 6.9, and 6.2 billion liters, respectively, in 2021. Global biodiesel production reached 734 thousand barrels of oil equivalent per day, i.e., an increase of about 3% when compared to 2020 (712 thousand barrels of oil equivalent per day).
- In March 2022, Repsol started its construction of a biofuel plant in Spain. The company is planning to invest an amount of nearly USD 210.33 million in the project. After completion, the plant can produce 250,000 tons of advanced biofuels per year, such as biodiesel, bio-jet, bio naphtha, and bio-propane. The new facility is expected to be operational in 2023. The project uses the circular economy, accelerating the energy transition and achieving Repsol's goal of becoming a net-zero emissions company by 2050.
- Therefore, based on the above-mentioned factors, biodiesel fuel type is likely to witness significant growth in the global advanced biofuel market during the forecast period.

North America Expected to Witness Significant Growth

- The North American region houses one of the biggest aviation markets and a well-established terrain transportation infrastructure primarily on fossil fuels. North America has been at the forefront of lowering emissions to limit the greenhouse effect.
- In North America, the United States is the largest producer of advanced biofuels, with significant investments in R&D with a substantial number of patents for biofuels to their credit. In 2021, according to the BP Statistical Review of World Energy 2022, the United States produced 643 thousand barrels of oil equivalent of biofuel per day, i.e., an increase of about 7.1% when compared to the previous year's value (602 thousand barrels of oil equivalent per day).
- Strong mandates drive the advanced biofuel market in the country. There are policies that specify reductions in fuel life-cycle carbon intensity, such as California's low carbon fuel standard. These policies may boost the demand for biofuel and support the deployment of novel and advanced biofuels.
- The new US Renewable Fuels Standard (RFS), signed recently as part of the revised Energy Bill, set high goals for the country's biofuel industry. It set a production target of 36 billion gallons of biofuels annually, mainly ethanol and biodiesel, with 21 billion gallons coming from "advanced biofuels," which can be produced using multiple feedstocks and technologies.
- The RFS also set a production target of roughly 16 billion gallons of "cellulosic biofuels," derived from plant sources such as trees and grasses. The potential of cellulosic ethanol remains enormous, with the Department of Energy having identified 1.3 billion tons of harvestable cellulosic biomass in the United States alone. This can meet more than one-third of the domestic demand for transportation fuel. For advanced biofuels, such as cellulosic ethanol and HVO, North America accounts for the largest share, i.e., 94% of global production.
- Based on the above factors, North America is expected to witness significant growth in the global advanced biofuel market during the forecast period.

Advanced Biofuel Industry Overview

The advanced biofuel market is moderately fragmented in nature. Some of the major players in the market (in no particular order)

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include Abengoa Bioenergy, DuPont Industrial Biosciences, Chemtex Group, Bankchak Petroleum, and Clariant Produkte GmbH.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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