Renewable Aviation Fuel Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 146 pages | Mordor Intelligence

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Report description:

The renewable aviation fuel market is expected to reach USD 3124 million by the end of this year and is projected to register a CAGR of over 47% during the forecast period. The market was negatively impacted by COVID-19 in 2020. Presently the market has reached pre-pandemic levels.

Key Highlights
Over the long term, factors such as increased government regulations for greenhouse gas emissions, and encouraging production and consumption of renewable aviation fuel are likely to drive the renewable aviation fuel market during the forecast period.
On the other hand, high costs of renewable aviation fuel are expected to restrain the growth of renewable aviation fuel market.
Nevertheless, increasing demand from emerging regions like southeast asia are exoected to create lucrative opportunities for the renewable aviation fuel market in the forecat period.
North America is likely to dominate the renewable aviation fuel market during the forecast period, with a majority of the demand coming from countries like the United States and Canada.

Renewable Aviation Fuel Market Trends

Hydroprocessed Esters and Fatty Acids (HEFA) Technology to Dominate the Market

In 2011, hydroprocessed esters and fatty acids (HEFA) technology received certification from the American Society for Testing and Materials (ASTM) for bio-jet fuel production. HEFA uses oleo-chemical feedstock, such as oil and fats, for renewable fuel

production.
A significant share of available commercial volumes of bio-jet fuels comes from HEFA biojet, with several commercial-scale facilities worldwide producing the same. However, renewable diesel (HEFA-diesel) is also produced during the process, with a larger market scope and a higher sales price. Thus, producers are focusing on HEFA-diesel instead of HEFA-jet.
In January 2022, Johnson Matthey launched an innovative technology, HyCOgenTM, by converting captured carbon dioxide (CO2) and green hydrogen into sustainable aviation fuel (SAF) using FT technology. Such developments in the renewable aviation fuel sector are likely to increase demand for FT technology during the forecast period.
Furthermore, in December 2021, the UK Department for Transport announced support of GBP 15 million to Advanced Biofuel Solutions (ABSL), which was likely to work on a detailed engineering design for a new facility in Cheshire. The plant is to be used for gasification and Fischer-Tropsch (FT) technology to convert an estimated 133,000 metric ton of waste a year into a biocrude that can be upgraded to aviation fuel. Thus, such investments in upcoming sustainable aviation fuel projects are likely to increase the demand for FT technology during the forecast period.
However, HEFA biojet fuel costs more than fossil-derived jet fuels, and the potential feedstock for the HEFA is also costly.
To decarbonize the aviation sector, companies such as Boeing are testing the technical suitability of high freezing point HEFA (HEFA+) aviation fuel in aircraft. HEFA+ is a synthetic hydrocarbon made from bio feedstock, such as vegetable oil or waste fats.
Therefore, owing to the above points, the HEFA segment is expected to dominate the renewable aviation fuel market during the forecast period.

North America to Dominate the Market

North America is one of the largest markets for the aviation industry and renewable aviation fuel. In 2020, air passenger transport in North America carried more than 397 million air passengers, which was approximately 22.2% of the world's traffic. Countries such as the United States and Canada accounted for the major share in air passenger count in 2020.
Between 1978 and 2021, US airlines improved fuel efficiency by over 130%, which resulted in nearly 5 billion metric tons of carbon dioxide savings. According to the Airlines for America (A4A), the country's airlines operate approximately 28,000 flights daily in the pre-pandemic stage. Most airline companies in North America posted heavy financial losses in 2020 and 2021. However, airline traffic is expected to recover during the forecast period. Further, as crude oil prices are increasing rapidly, the demand for renewable aviation fuel is expected to grow during the forecast period.
The Bio-Energy Technologies Office (BETO) of the United States and the Department of Energy (DOE), supported by Energy Efficiency and Renewable Energy (EERE), are making efforts to expand the adoption of sustainable, domestically produced alternative fuels for transportation and aviation to stimulate the growth of the renewable fuel industry.
In North America, the primary policy incentive for renewable aviation fuel production is the US Renewable Fuel Standard (RFS), which provides credits to refiners and importers of fuel who blend renewable fuel into transportation fuel to meet Renewable Volume Obligation standards.
In January 2022, the Environmental Protection Agency (EPA) issued proposed volume requirements, under the RFS program, for cellulosic biofuel, advanced biofuel, and total renewable fuel. Under this proposal, the renewable fuel standard for 2022 was set at 36 billion gallons, an increment of over 3 billion gallons over the previous year.
The existing framework of fuel policies in North America is expected to support hydroprocessed esters and fatty acids (HEFA) fuel production in the future, thereby increasing the opportunities for HEFA fuel producers in the region.
Therefore, such factors are expected to boost the dominance of North America in the market during the forecast period.

Renewable Aviation Fuel Market Competitor Analysis

The renewable aviation fuel market is moderately fragmented. Some of the major players in the market (in no particular order)

include TotaEnergies SE, Neste Oyj, Swedish Biofuels AB, Gevo Inc., and SG Preston Company.

Additional Benefits:

The market estimate (ME) sheet in Excel format
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