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E-kerosene Market Assessment, By Application [Commercial Aircraft, Cargo Aircraft, Military Aircraft, Others], By Region, Opportunities and Forecast, 2022-2032F

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Abstracts

Global E-kerosene Market is expected to be driven by the European market with Europe expected to produce about 1.83 million tonnes of e-kerosene by 2030. According to the International Council on Clean Transportation estimates the average e-kerosene production cost in the United States is USD 8.80 per gallon in 2020 which is expected to decrease to USD 4 per gallon by 2050. The overall global e-kerosene market is expected to grow at a CAGR of 37.3% by 2030. The rising carbon emission concerns from the aviation sector and the surging adoption of e-kerosene in commercial aircraft are the primary factors to augment the traction in the global e-kerosene market growth.

The aerospace industry is among the leading sources of carbon footprint as aircraft consume a higher quantity of fuel. For instance, according to the International Energy Agency (IEA), the aviation sector generated 2% of global carbon emissions, reached 800 million tonnes in 2022. Thus, the higher carbon footprint generation due to the aerospace industry is prompting the development of new alternatives for fossil fuel-based kerosene. As a result, the demand for e-kerosene composed of carbon dioxide and hydrogen is increasing in the aviation industry to blend with conventional jet fuel so that flight emissions are minimized, driving market growth.

Increasing Traction from Commercial Aircrafts is Benefiting Market Growth

E-kerosene is a carbon-neutral fuel since the manufacturing uses renewable energy sources, including wind, solar and hydro. Furthermore, e-kerosene is manufactured from carbon dioxide and hydrogen, which minimizes greenhouse gas emissions. As a

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result, e-kerosene is deployed in commercial aircraft to ensure 2% additional specific energy than fossil kerosene.

For instance, in 2021, Lufthansa, a Germany-based airline company, announced its plan to procure 25,000 liters of E-kerosene yearly in the coming five years. Hence, the significant adoption of E-kerosene in commercial aircraft to ensure reduced maintenance costs is spurring the global e-kerosene market size growth.

Recently Developed Infrastructure to Increase the Supply of E-kerosene

E-kerosene industry is an emerging market, due to which the manufacturers of aviation fuel are investing in infrastructure development to manufacture renewable energy-powered e-kerosene plants. The prime focus of the companies involved in the manufacturing of aviation fuel is to target the production of e-kerosene so that the availability of e-fuel for the aviation sector is increased in the global market.

For instance, in October 2021, Atmosfair opened a new power-to-liquid plant in Germany. The plant manufactures carbon-neutral renewable electricity-based e-kerosene. Henceforth, the recently developed e-kerosene manufacturing facilities are fostering the supply of the product in the global market, which in turn, is proliferating the market growth.

Rising Adoption of E-kerosene in Europe is Supplementing the Market Growth

Europe has the presence of major aviation companies involved in the manufacturing and operation of aircraft. As a result, the aerospace industry is among the prominent sources of carbon emissions in Europe. For instance, according to Greenpeace International, 2022, the aviation industry in Europe generated 3,385,538 tonnes of carbon emission, which was more than double as compared to 2021.

E-kerosene is an eco-friendly alternative to fossil fuel as the Fischer-Tropsch process is deployed to ensure superior sustainability in the manufacturing process. Thus, the adoption of e-kerosene is increasing in the European region to reduce the negative impact of carbon emissions in the aerospace sector, which is amplifying market growth.

Future Market Scenario

The gradual reduction in the prices of renewable energy sources and hydrogen will diminish the overall cost of e-kerosene. For instance, according to the International

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Council on Clean Transportation (ICCT), the price of e-kerosene is 7 times higher in the United States and 10 times more in Europe as compared to kerosene. However, innovation in technologies will lower the prices of e-kerosene in the upcoming years. The average production of e-kerosene in the United States was USD 8.8 per gallon in 2020 and will reach USD 4 per gallon by 2050. Therefore, the reduced prices of e-kerosene will boost the adoption of the product, thereby creating a lucrative opportunity for market growth.

The e-kerosene manufacturing facilities development is increasing to meet the growing demand from the aviation sector. For instance, in June 2022, companies such as Uniper, Airbus, Sasol, and Siemens Energy announced the production of 10,000 tonnes of e-kerosene each year in a new manufacturing facility located in Germany. Thus, the development of new manufacturing facilities for e-kerosene, which utilize the Fischer-Tropsch process will create a significant potential for market growth in the coming years.

Government agencies at the international level are implementing measures for jet fuels to accomplish the carbon emission targets. For instance, in September 2023, the European Union approved a law stating that 70% of jet fuels at airports should be green, composed of synthetic fuels, such as e-kerosene by 2050. Hence, the increasing legislative measures to promote green fuel deployment in the aerospace industry is creating a prosperous outlook for the e-kerosene market.

In April 2022, companies, including CEMEX, ENERTRAG, and ecoFT formed a strategic collaboration to produce e-kerosene from green hydrogen and carbon dioxide extracted from cement in Germany. CEMEX will supply carbon dioxide produced from cement plant, ENERTRAG will provide green hydrogen, and ecoFT will deploy technology to convert carbon dioxide and green hydrogen into E-kerosene. Henceforth, international partnerships will create a favorable growth opportunity for the market in the upcoming years.

Key Players Landscape and Outlook

The existing and upcoming market players in the global e-kerosene market are HY2GEN, Atmosfair, Synkero B.V., Nordic Electrofuel AS, P2X-Europe GmbH & Co. KG, Reuze, Arcadia eFuels, INERATEC GmbH, Biorefinery ?strand AB, and XFUELS Gmbh. These existing and upcoming players are involved in the manufacturing and supply of e-kerosene and are investing in strategies such as new technology innovation, acquisitions, and facility development to increase their market revenue and volume

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share in the global e-kerosene industry.

Furthermore, biofuel manufacturers are investing in the development of new e-kerosene manufacturing facilities. Thus, the entry of new players in the e-kerosene market will increase in the upcoming years. As a result, the market competition in the e-kerosene industry will increase, thereby creating a favorable market growth outlook during the projected forecast period.

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