

# **Sustainable Fuel Market by Type (Renewable Fuels, Low Carbon Fossil Fuels), Fuel Type (Biofuels, E-Fuels, Hydrogen, Biomethane, CNG), End User (Road transportation, Marine, Aviation), State (Liquid, Gas) and Region - Global Forecast to 2029**

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## **Abstracts**

The global sustainable fuel market is estimated to grow from USD 193.8 billion in 2024 to USD 299.9 billion by 2029; it is expected to record a CAGR of 9.1% during the forecast period. Governments are enacting strict regulations and providing incentives to encourage the use of sustainable fuels. Additionally, the increasing global awareness of the necessity to combat climate change is propelling the sustainable fuel market. Furthermore, Sustainable fuels such as biofuels and green hydrogen contribute to diversifying energy sources and decreasing dependence on imported oil, thereby enhancing national energy security.

“Biofuels: The largest segment of the sustainable fuel market, by fuel type. “

Based on fuel type, the sustainable fuel market has been segmented into Biofuels, E-fuels, Hydrogen, Biomethane, and Compressed Natural Gas. The Biofuels segment is expected to be the largest segment during the forecast period. According to National Renewable Energy Laboratory (NREL), biofuels have the potential to reduce greenhouse gas emissions by 68% to 73% if equal volume of biofuel is substituted with petroleum-based fuels; therefore the need to reduce greenhouse gas emissions to boost the growth of the biofuels during the forecast period.

“Renewable fuels are expected to be the largest segment during the forecast period based on type.”

By type, the sustainable fuel market has been split into two types: renewable fuels and low carbon fossil fuels. The renewable fuels segment is expected to hold the largest market share during the forecast period. The goal of global economies to minimize their carbon footprint and greenhouse gas emissions has driven the adoption of clean and green energy alternatives. The rising energy demand, propelled by rapid industrialization and urbanization, has further hastened the shift towards renewable energy. Consequently, economies are increasingly utilizing renewable energy sources such as biomass, hydroelectric, and geothermal power.

“By state, liquid segment is expected to be the largest segment during the forecast period.”

Based on the State, the sustainable fuel market is segmented into liquid, and gas. The liquid segment is expected to be the largest growing segment of the sustainable fuel market during the forecast period. Liquid fuels have higher energy density compared to gases such as CNG, biomethane and hydrogen. Higher energy density refers to high amounts of energy per unit of volume. The higher density of liquid fuels is expected to drive the growth of the liquid segment during the forecast period.

“North America is expected to be the largest region in the sustainable fuel market.”

North America is expected to be the largest region in the sustainable fuel market during the forecast period. The growth is attributed to the enforcement of strict pollution control regulations, GHG emissions reduction efforts, and rising preference for low carbon and renewable energy alternatives. Reflecting the global trend towards sustainable fuels, investments in North America are increasing. These increasing investments in sustainable fuels boost the market growth during forecast period in the region.

#### Breakdown of Primaries:

In-depth interviews have been conducted with various key industry participants, subject-matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information and assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 65%, Tier 2- 24%, and Tier 3- 11%

By Designation: C-Level- 30%, Director Level- 25%, and Others- 45%

By Region: North America- 25%, Europe- 25%, Asia Pacific- 30%, Middle East & Africa- 10%, South America-10%

Note: Others include sales managers, engineers, and regional managers.

Note: The tiers of the companies are defined on the basis of their total revenues as of 2023. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: The sustainable fuel market is dominated by a few major players that have a wide regional presence. The leading players in the sustainable fuel market are ADM (US), Shell plc (UK), Saudi Arabian Oil Co. (Saudi Arabia), Siemens Energy (Germany) and Chevron Corporation (US). The major strategy adopted by the players includes new product launches, partnerships, collaboration, mergers, and investments & expansions.

#### Research Coverage:

The report defines, describes, and forecasts the global sustainable fuel market by fuel type, state, type, end user and region. It also offers a detailed qualitative and quantitative analysis of the market. The report comprehensively reviews the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates in terms of value, and future trends in the sustainable fuel market.

#### Key Benefits of Buying the Report

Increasing emphasis on net zero emission and supportive government policies are few of the key factors driving the sustainable fuel market. Factors such as limited availability and infrastructure of sustainable fuel restrain the growth of the market. The growing energy transition towards reducing carbon emission is expected to present lucrative opportunities for the players operating in the sustainable fuel market.

**Product Development/ Innovation:** The sustainable fuel market is witnessing significant product development and innovation, driven by the growing demand for environmentally friendly fuels to curb the transportation emissions. Companies are investing in developing advanced sustainable fuel technologies.

**Market Development:** ADM and Gevo, Inc., a pioneer in transforming renewable energy into low-carbon, energy-dense liquid hydrocarbons, announced that they

have signed a memorandum of understanding (MoU) to support the production of sustainable aviation fuel (SAF) and other low carbon-footprint hydrocarbon fuels.

**Market Diversification:** Repsol has begun its first renewable hydrogen in the Petronor industrial area in Biscay, Spain. With an expenditure of 11 million euros, this renewable hydrogen is used in the refinery itself, lowering the carbon footprint of the products.

**Competitive Assessment:** In-depth assessment of market shares, growth strategies, and service offerings of leading players, like ADM (US), Shell plc (UK), Saudi Arabian Oil Co. (Saudi Arabia), Siemens Energy (Germany) and Chevron Corporation (US) among others in the sustainable fuel market.

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\*Details on Business overview, Products/Services/Solutions offered, Recent Developments, MNM view might not be captured in case of unlisted companies.

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