

# **United Kingdom Low-carbon Hydrogen Market Assessment, By Electricity Source [Renewable Energy (Solar, Wind, Biomass, Others), Non-renewable Energy (Fossil Fuel, Nuclear)], By Type [Green Hydrogen, Blue Hydrogen, Aqua Hydrogen], By Production Process [Electrolysis, Gasification], By End-use Industry [Transportation (Automotive, Aerospace, Marine, Locomotive), Power Generation, Oil Refineries, Steel, Fertilizers, Others], By Region, Opportunities and Forecast, 2016-2030F**

<https://marketpublishers.com/r/U5E29DD266EFEN.html>

Date: February 2025

Pages: 107

Price: US\$ 3,300.00 (Single User License)

ID: U5E29DD266EFEN

## **Abstracts**

United Kingdom low-carbon hydrogen market size was recorded at 0.92 tons in 2022, which is expected to grow to 4.17 tons in 2030, with a CAGR of 20.8% during the forecast period between 2023 and 2030. The bolstering of transportation and oil refinery sectors in the United Kingdom propels the demand for low-carbon hydrogen to ensure efficient substitution of traditional fossil fuels, driving market growth.

Furthermore, the United Kingdom government is implementing stringent regulatory measures to reduce the carbon footprint. The strict carbon emission standards are prompting high carbon footprint-generating industries such as fertilizers, steel, transportation, and others to adopt low-carbon hydrogen. The industries mentioned above generate approximately 25% or more of CO<sub>2</sub> emissions. As a result, the demand for low-carbon hydrogen is increasing in the United Kingdom. It in turn, is leading the manufacturers of hydrogen to develop new low-carbon hydrogen-generating plants in the United Kingdom, thereby creating a potential opportunity for market growth during

the projected forecast period.

### Bolstering the Transportation Industry is Supplementing the Market Growth

The low-carbon hydrogen fuel enables vehicles to travel longer distances with less refueling than traditional fossil fuels. Hence, low-carbon hydrogen is deployed in fueling public transit buses, aircraft, marine vessels, heavy-duty tractor-trailers, and others. The increasing investments in the new green hydrogen-powered marine vessel development and rising production of heavy-duty trucks are the prominent aspects boosting the transportation industry growth in the United Kingdom.

For instance, according to the Organisation Internationale des Constructeurs d'Automobiles (OICA), in 2021, the production of heavy trucks in the United Kingdom was 16,379 units, and in 2022, it was 20,507 units, an increase of 25%. Hence, the bolstering transportation industry in the United Kingdom fosters the demand for low-carbon hydrogen since it is deployed as a fuel in the internal combustible engine. This prime factor is propelling market growth.

### Rising Adoption of Low-carbon Hydrogen in the Oil Refineries

Low-carbon hydrogen provides aid in desulfurizing crude oil and eliminates carbon footprint generation into the atmosphere. The employment of low-carbon hydrogen manufactured from renewable energy sources is increasing in oil refinery applications such as reactors, heavy oil hydrotreating units, etc. The growth of the oil refinery industry in the United Kingdom is attributed to factors such as the increasing adoption of green hydrogen to maximize production output and the launch of new oil refineries.

For instance, in March 2022, Phillips 66 Limited announced its plans to adopt low-carbon hydrogen in the Phillips 66 Limited Humber Oil Refinery in the United Kingdom for industrial heaters application. Thus, the increasing adoption of low-carbon hydrogen in the oil refinery to achieve low-carbon targets in the United Kingdom benefits the market growth.

### Development of New Infrastructure for Low-Carbon Hydrogen Plants Will Augment the Market Growth

The transition of companies from reducing carbon emissions and government investments in low-carbon hydrogen ecosystems are prominent aspects driving the infrastructure development of low-carbon hydrogen manufacturing facilities in the United

Kingdom.

For instance, in August 2023, BP p.l.c. announced the progress in the government negotiations for developing the HyGreen Teesside facility. The HyGreen Teesside facility will manufacture green hydrogen in 2026. Thus, the new infrastructure development for low-carbon hydrogen manufacturing facility in the United Kingdom to ensure a low-carbon emission economy to create a lucrative growth opportunity for the market during the forecast period.

### Impact of COVID-19

The COVID-19 pandemic in 2020 disrupted the supply chain of non-essential products in the United Kingdom. As a result, the production activities in various industries diminished, including transportation, fertilizers, and others. For instance, according to the Organisation Internationale des Constructeurs d'Automobiles (OICA), in 2019, the production of buses and coaches in the United Kingdom was 1,945 units, and in 2020, it was 941 units, a decline of 107%. Since the transportation industry is a prominent end-user of low-carbon hydrogen, the halt in the production of the above industries impacted the revenue growth of the United Kingdom low-carbon hydrogen market.

However, by the end of 2020, the United Kingdom government implemented measures such as monetary stimulus packages for industries and ease of COVID-19 restrictions, which proliferated the market growth. In addition, the impact of the COVID-19 pandemic eradicated in the long run, which is leading to a robust growth of the United Kingdom low-carbon market hydrogen market in the forecast years.

### Impact of Russia-Ukraine War

Russia was ranked as the 3rd leading crude oil exporter in 2021. The United Kingdom is among the major importers of Russian crude oil. Russia's invasion on Ukraine posed volatility in fossil fuel markets, which prompted the utilization of clean energy technologies and a short-term supply constraint for oil and gas products. Also, the conflicts between Russia and Ukraine have resulted in countries diversifying their energy sources, promoting the development of new low-carbon hydrogen projects in the United Kingdom.

For instance, in December 2022, the United Kingdom government updated the hydrogen mission and implemented a regulatory framework to promote low-carbon hydrogen manufacturing. Therefore, the pro-government measures to counter Russian

fossil fuel imports are boosting the development of new hydrogen production facilities, including low-carbon hydrogen plants in the United Kingdom, which augments the market growth in the upcoming years.

### Key Players Landscape and Outlook

The leading players dealing in offering low-carbon hydrogen in the United Kingdom are leveraging their technological potential for developing low-carbon hydrogen plants in the country. The focus of the market players such as, Linde plc, Shell Plc, GeoPura, Ltd., Statkraft UK Ltd., and others is on adopting various strategies such as infrastructure development for new plants, reducing the overall production cost, increasing efficiency, etc.

For instance, in April 2022, Shell plc partnered strategically with Uniper SE to develop a blue hydrogen manufacturing facility in the United Kingdom. The major application of blue hydrogen is in various end-use industries such as transport, heavy industry, heating & power, and others. Therefore, developing new blue hydrogen plants will create a prominent opportunity for the United Kingdom low-carbon hydrogen market in the coming years.

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\*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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