

Global Hydrogen Market Report Trends, Forecast, and Competitive Analysis Report 2022 – Astute Analytica

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/EINPresswire.com/ -- Astute Analytica reports that the [global hydrogen market](#) registered a revenue of US\$ 194,899 million in 2021. The global hydrogen market is expected to grow to US\$ 286,789.2 million by 2027 by registering a compound annual growth rate (CAGR) of 6.6% during the forecast period 2022-2027. The market will grow at a CAGR of 6.1% in terms of volume during the study period.

Hydrogen has a wide range of applications in the production of methanol, ammonia, and petroleum. Moreover, it is used in heat treatment, transportation, power generation, and the manufacturing of hydrogen fuel cells. The liquid form of hydrogen is easy to store.



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The production process of hydrogen, on the basis of greenhouse gas emissions, is segmented into grey, blue, brown, and green hydrogen.

While green and blue hydrogen is a low-carbon energy solution, the demand for these is less due to a lack of infrastructure and a significantly high cost of production. On the other side, grey hydrogen benefits users as it is cost-effective, ranging from less than US\$ 1/kg to US\$ 2/kg. However, the cost of green hydrogen is more than US\$ 3/kg.

Based on technology, the report analyses the thermal process and electrolytic processes. Coal gasification is the most cost-effective, costing around US\$ 2.08 per ton. However, the steam methane reforming segment registered a value of US\$ 88,135.1 million in 2021. Additionally, the polymer electrolyte membrane (PEM) electrolyzer is expected to grow at a potential CAGR of 9.5%. However, it costs around US\$ 7 per ton, which is significantly high and makes it the most expensive electrolytic process. Additionally, the transportation sector is a vast contributor to environmental pollution. The eleventh annual assessment by H2stations.org stated that there were nearly 369 hydrogen refueling stations across the globe during the start of 2019. Germany,

alone had 80 stations while Japan had the most at 96, and the United States stood third with 42 stations.

Based on Application, the popularity of hydrogen-powered fuel cells is expected to grow at a CAGR of 11.1% due to the growing scope of hydrogen fuel cells in the automotive sector. Various automotive manufacturers are fast adopting hydrogen-powered fuel cells as it offers high efficiency and is a potential zero-emission source of energy. For instance, General Motors made headlines in January 2022 as the firm announced to use of hydrogen to recharge electric vehicles. The firm has been long working on fuel cell technology to power trucks, rail transportation, etc.

COVID-19 Impact Analysis

COVID-19 brought challenges for the entire transportation industry, wherein most of the manufacturers closed their doors. The global hydrogen market recorded a sharp decline in the transportation sector. The pandemic recorded a significant slowdown in the expansion of clean energy. However, post-pandemic, the efforts related to the commitment towards mitigating climate change are increasing, which will open doors of opportunities for the global hydrogen market.

Factors Driving the Growth of the Global Hydrogen Market

The energy sector is fast evolving with the growing efforts to expand the applications of hydrogen. Various firms are investing more in ammonia-powered fuel cells. For instance, Woodside Petroleum announced that the firm will fund more than US\$ 1 Billion for constructing the plant for hydrogen and ammonia production. Additionally, the global production of ammonia was around 150 million metric tons.

Hydrogen-based iron is growing in popularity. The elimination of coal in the production of iron can lead to a significant decline in carbon emissions.

Hydrogen is used as chemical storage, energy carrier, and feedstock for industrial production, which is forcing various industry players to push the hydrogen development capacity. In response to the strengthening scope of green hydrogen, Gail (India) Ltd. made headlines as it announced the development of India's largest green hydrogen plant in October 2021.

Opportunities

The rapidly growing environmental awareness brings along untapped growth opportunities for the global hydrogen market. The global hydrogen market is expected to see an opportunity of US\$ 91,890.2 million in the market during the period 2021-2027.

Hydrogen technologies are the most promising zero-emission technologies for the new sustainable world. It significantly eliminates CO₂ emissions and contributes to carbon-free driving. Moreover, economies are making crucial efforts to reach carbon neutrality. For instance, European Union, in July 2021, unveiled a thorough plan to achieve carbon neutrality by 2050. The meeting included a dozen draft proposals.

Additionally, growing efforts aimed at expanding the manufacturing of hydrogen-powered fuel cell electric vehicles (FCEVs) will also boost the growth of the hydrogen market during the analysis period. Various automotive companies, including General Motors and Toyota, are fast transforming to clean energy resources in a bid to contribute to the new sustainable era. For instance, in September 2022, Kawasaki and Toyota announced their collaboration, intending to develop hydrogen engines for motorcycles. Toyota, which has made headlines for its robust automotive, also developed hydrogen versions of the Corolla and the Yaris. Therefore, such efforts are expected to drive the hydrogen market forward.

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Competitors in the market

Some of the prominent companies in the global hydrogen market include Air Liquide International S.A., Hydrogenics, NEL Hydrogen, Iwatani CO, Showa Denko, Air Products and Chemicals, Inc., Linde plc, Inox, Weldstar, Inc., Messer Group GmbH, Claind, HyTech Power, ITM Power, PowerTap, Teledyne Technologies Inc., Cummins, and others.

Regional Analysis

Based on regions, the Asia-Pacific hydrogen market held the largest share of 71% due to the presence of the world's biggest hydrogen-producing country, China. As of Feb 2022, China produces nearly 25 million tons (Mt) annually, which is around a quarter of the global production of hydrogen. Additionally, the government of China is taking crucial steps in a bid to accelerate hydrogen production. China is likely to reach the production capacity of 100,000 to 200,000 tons of renewable-based hydrogen annually by 2025. Apart from that, the Asian country is also home to the third largest Fuel Cell Electric Vehicles (FCEV) market, which defines the scope of the Asia-Pacific hydrogen market.

Market Segmentation

By Technology

Thermal Process

Steam Methane Reforming (SMR)

Partial Oxidation (POX)

Coal Gasification

Biomass Gasification

Electrolytic Process

SOEC

SOFC

PEM

Others

By Application

Methanol Production
Ammonia Production
Petroleum Refinery
Heat Treatment
Transportation
Power Generation
Renewable Energy
Hydrogen Fuel Cell
Fuel Cell Vehicles
Fuel Cell Ships
Fuel Cell Battery
Mobile Power Generation
Others

By Delivery Mode
Captive
Merchant

By Region/ Country
North America
The U.S.
Canada

Europe
The UK
Germany
France
Norway
The Netherlands
Rest of Europe

Asia Pacific
China
India
Japan
Australia
South Korea
Rest of Asia Pacific
Rest of the World

Middle East & Africa (MEA)
Latin America

Looking For Customization: <https://www.astuteanalytica.com/ask-for-customization/hydrogen-market>

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