

Hydrogen Generation Market- Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 161 pages | Mordor Intelligence

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Report description:

The hydrogen generation market is expected to reach USD 171 billion by the end of this year and is projected to register a CAGR of over 4.3% 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 desulphurization, greenhouse gas emissions, and encouraged production and consumption of hydrogen are likely to drive the hydrogen generation market during the forecast period.

On the other hand, high capital costs of hydrogen energy storage are expected to restrain the hydrogen generation market. The steam methane reforming technology segment is expected to dominate the hydrogen market over the forecast period. Nevertheless, technological advancements in extracting hydrogen from renewable sources and increased applications of hydrogen as a fuel are likely to create lucrative growth opportunities for the hydrogen generation market during the forecast period.

Asia-Pacific is the fastest-growing market during the forecast period due to the rising hydrogen demand. This growth is attributed to increasing investments, coupled with supportive government policies in the countries of this region, including India, China, and Australia.

Hydrogen Generation Market Trends

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Blue Hydrogen Segment Expected to see Significant Growth

Blue hydrogen is made by combining natural gas with heated steam in the steam reforming process. Natural gas is used to produce blue hydrogen, a low-carbon fuel. It is used to power vehicles, generate energy, and heat buildings, among other things. The CO₂ created in blue hydrogen does not escape into the atmosphere. Instead, CO₂ is caught and stored separately at the production site. Carbon capture and storage (CCS) is a technique that aids in reducing carbon emissions into the atmosphere. As a result, it is more environmentally benign than grey hydrogen, although blue hydrogen increases the cost of carbon storage. The blue hydrogen market is expected to be driven by the growing use of hydrogen in fuel cell-powered automobiles. Fuel cells are an environment-friendly mode of transportation that can replace fossil fuels. Furthermore, governments from all over the world support the usage of fuel cell vehicles to minimize greenhouse gas emissions. Subsidies and tax breaks are being offered, and more money is being invested in developing infrastructure for fuel cell vehicles. As a result, the increased use of hydrogen in the vehicle industry is expected to drive the demand for blue hydrogen over the forecast period.

According to IEA, in January 2022, there were at least 50 blue hydrogen projects in the works around the world, with capacity expected to grow more than tenfold by 2030. One such project is a joint venture between Equinor and Engie to produce low-carbon hydrogen at a large scale and at competitive cost levels. They will use a process known as auto thermal reforming (ATR), which allows for decarbonization rates above 95%.

Hence, owing to the above points, the blue hydrogen segment is likely to see significant growth in the hydrogen generation market during the forecast period.

Asia-Pacific Region Fastest Growing Market

The Asia-Pacific region is the fastest-growing market due to the rising hydrogen demand for power generation in China and India. Furthermore, increased government measures to promote clean and green energy in countries such as India, Japan, and Australia are encouraging market growth.

The rapid development of numerous sectors in various economies, such as South Korea, China, Japan, and India, demonstrated a robust economic development that aided the growth of the hydrogen-generating industry in this region. The increasing demand for fuel cell-powered electric vehicles in the area is mainly responsible for the region's appealing growth. Aside from that, power generation via renewable energies is expanding in the region.

China is the most significant and fastest-growing market for hydrogen generation. In recent years, the country's oil and gas and manufacturing industries have experienced tremendous expansion.

According to the National Development and Reform Commission (NDRC) and energy regulator National Energy Administration (NEA), by 2025, China plans to manufacture 100,000-200,000 metric tons of green hydrogen from renewable sources per year, reducing CO₂ emissions by 1-2 million metric tons annually.

The factors mentioned above are likely to help the hydrogen market grow in the Asia-Pacific region during the forecast period.

Hydrogen Generation Market Competitor Analysis

The hydrogen generation market is moderately fragmented. Some of the major players in the market (in no particular order) include ITM Power plc, Linde plc, Engie SA, The Messer Group GmbH, and Air Liquide S.A.

Additional Benefits:

The market estimate (ME) sheet in Excel format

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