Green Hydrogen: Global Markets

Market Research Report | 2024-12-04 | 177 pages | BCC Research

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Report description:

Description

Report Scope
In this report, the global market for green hydrogen is segmented by technology, power source, end-use industry and regional market analysis. The market size has been provided in value ($ Millions) and volume (kilotons). The report also analyzes competitive intelligence, which covers the market share of prominent companies based on their product offerings and revenues generated from the green hydrogen industry. It also provides details of market dynamics, emerging technologies and global developments in the industry.
The report covers hydrogen production from water electrolysis using renewable energy sources such as wind and solar. The report also covers the two prominent electrolyzer technologies: alkaline and PEM electrolysis. Hydrogen from water electrolysis using other energy sources, such as natural gas, is not part of the report's scope.
Report Includes
- 77 data tables and 63 additional tables
- An up-to-date overview of the global markets for green hydrogen
- Analysis of the global market trends, with data from 2023, estimates for 2024, forecasts for 2025, 2027, and projections of compound annual growth rates (CAGRs) through 2029
- Evaluation of the current market size and revenue growth prospects, accompanied by a market share analysis by technology, power source, end user, and geographic region
- A look at the key market drivers and restraints that will shape the market for green hydrogen over the next five years (2024-2029)
- A discussion on ESG challenges and practices of the industry
- Assessment of the vendor landscape, including the market shares of leading companies, their product portfolios and financial overviews
- Information on recent mergers, acquisitions, expansions, collaborations, investments, divestments, product launches, and other

strategic developments
- Profiles of the leading market vendors, including ACWA Power, BP Plc, ITM Power Plc, Air Liquide, and Bloom Energy

Executive Summary

Summary:

The increasing demand for sustainable energy sources across hard-to-abate industries and technological advances to reduce cost and increase efficiency are among the major driving forces for the global green hydrogen market. To speed up the commercialization of green hydrogen across industries, the development of a hydrogen economy is crucial. However, the high cost and low competitiveness with conventional fuels are major bottlenecks in the market's growth.

The chemicals and petrochemicals market segment holds the largest market share globally. Most green hydrogen demand arises from existing sub-segments such as ammonia, methanol, chemicals and refining uses. Green hydrogen is an ideal solution for refineries. Although transportation currently occupies the least market share, it is expected to witness the fastest growth rate during the forecast period. Growth will be led by rising demand for green hydrogen to decarbonize the transportation industry, including heavy-duty trucking, aviation and maritime transportation.

Favorable mandatory usage initiatives by governments such as the EU will act as a key driver in supplementing demand for green hydrogen within transportation. The rising penetration of fuel-cell vehicles is also expected to act as a growth driver for green hydrogen demand.

Green steel is expected to emerge as a key growth contributor within the other end-use industries segment. The demand for green hydrogen within the steel industry will likely proliferate over the years, with the expected decline in the production cost of green hydrogen. In addition, amid strengthening regulations pertaining to life cycles, automakers such as Mercedes Benz are playing a key role in driving demand for green steel. Transport involves nearly 20% of steel consumption, so it presents lucrative growth avenues for green steel companies.

Regionally, Europe leads the global market in terms of value and volume. The region is characterized by large installed electrolyzer capacity, increasing environmental concerns on GHG emissions and rising demand for clean energy. To facilitate a shift to green hydrogen, the European Commission (EC) is playing a key role in implementing key laws, merging standards and mandatory use targets for industrial consumers. The mandatory targets, which aim to utilize 42.5% of all hydrogen consumed by industry to be green within its Renewable Energy Directive, will play a major role in driving the overall demand for green hydrogen in Europe through 2039 (EU, 2023).

The APAC market is expected to experience robust demand for green hydrogen in the coming years. Asian economies, which have relied mainly on fossil-based energy sources, are rapidly evolving and committing to decarbonization and net-zero targets. The region is also observing significant expansion in the number of installed electrolyzers as well as renewable energy capacity additions, especially in China and India. The renewable energy generation witnessed significant growth additions especially from China, strengthening the goal of achieving net-zero emissions.

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