

Hydrogen Market by Sector (Generation Type (Gray, Blue, Green), Storage (Physical, Material), Transportation (Long, Short)), Application (Energy (Power, CHP), Mobility, Chemical & Refinery (Refinery, Ammonia, Methanol)), Region - Global Forecast to 2030

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Abstracts

The global hydrogen market is estimated to grow from USD 242.7 Billion in 2023 to USD 410.6 Billion by 2030; it is expected to record a CAGR of 7.8% during the forecast period. Governments are enacting favourable regulations and offering financial incentives to boost the adoption of hydrogen technologies. These programmes include funding for research and development, subsidies for hydrogen production and infrastructure, and legislation that encourage the use of hydrogen in various industries. These type of initiatives attributed to the growth of hydrogen market.

“Gray Hydrogen: The largest segment in generation type of the hydrogen market, by sector “

Based on sector, the hydrogen market has been split into three segments: generation type, storage and transportation. These segments are bifurcated into the subsegments. By generation type, it offers gray hydrogen, blue hydrogen and green hydrogen. Blue hydrogen is expected to be the second largest segment followed by gray hydrogen. As countries and companies seek to decrease their carbon footprints, blue hydrogen provides a bridge solution that allows them to continue using current natural gas infrastructure while transitioning to a more sustainable energy source.

“Physical storage segment is expected to be the fastest growing segment during

forecast period based on storage in by sector”

By storage, the hydrogen market has been bifurcated into physical and material-based storage. The physical storage segment is expected to lead the hydrogen market during the forecast period owing to increasing demand for gaseous hydrogen storage tanks due to stringent regulations for cleaner fuel in oil refineries and rising demand for hydrogen in the fertilizer, chemical, and steel industries. Physical hydrogen storage is widely used in transportation, chemicals, oil refineries, and other end-use industries. South Korea, Japan, the US, France, and China have launched a roadmap for alternative fuels in the automotive & transportation industry. This is supported by increasing FCEVs and composite hydrogen storage tanks for transporting hydrogen via tankers and tube trailers.

“By application, the chemical & refinery segment is expected to be the largest segment during the forecast period.”

Based on application, the hydrogen market is segmented into energy, mobility, chemical & refinery and others. The chemical & refinery segment is expected to be the largest segment the hydrogen market during the forecast period owing to the rise in demand from the fertilizer industry. Also, The emerging hydrogen economy in the chemical industry is supported by policymaker initiatives at the European and country level, estimating a required investment of ? 430 billion by 2030. In North America, a significant rise is expected in methanol production. North American companies are forming strategic relations to strengthen methane and ammonia production. For instance, CF Industries Holdings, Inc. acquired a Waggaman ammonia production facility from Incitec Pivot Limited.

'Asia Pacific': The second-largest in the hydrogen market'

Asia Pacific is expected to have the second-largest market share in the hydrogen market between 2023–2030, followed by Europe and North America. Asia Pacific is one of the key markets for green technology adoption in order to satisfy government targets for lowering GHG emissions. Because of the commercial deployment of Japanese fuel cell micro-CHP products, Japan and South Korea have been significantly investing in fuel cell adoption since 2009. Over the last five years, investments in the energy sector have increased significantly, which is likely to benefit the hydrogen generation market. China and India are the world's most populous countries, and agricultural operations continue to play an important part in their economy.

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- 55%, Tier 2- 25%, and Tier 3- 20%

By Designation: C-Level- 35%, Director Levels- 30%, and Others- 35%

By Region: North America- 25%, Europe- 35%, Asia-Pacific - 25 %, South America – 10%, Middle East & Africa – 5%.

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 2022. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: The hydrogen market is dominated by a few major players that have a wide regional presence. The leading players in the hydrogen market are Linde plc (Ireland), Air products and Chemicals, Inc. (US), Air Liquide (France), Worthington Industries (US), Cryolor (France), Hexagon Purus (Norway), and NPROXX (Netherlands). The major strategy adopted by the players includes new product launches, contracts & agreements and, investments & expansions.

Research Coverage:

The report defines, describes, and forecasts the global hydrogen market by sector, application, 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 hydrogen market.

Key Benefits of Buying the Report

Increasing regulations concerning greenhouse gas emissions is the main factor driving the hydrogen market. Moreover, increasing efforts by governments for installation of hydrogen fueling stations and rising focus of government on

achieving net zero emissions targets by 2050 in the hydrogen market. Even though high production cost of green hydrogen is the major challenge faced by countries under hydrogen market.

Product Development/ Innovation: The hydrogen market is witnessing significant product development and innovation, driven by the growing demand for hydrogen from industries. Companies are investing in the development of advanced hydrogen production technology that are specifically designed for the unique requirements of industry.

Market Development: Linde plc has signed a long-term arrangement with Evonik, a well-known specialty chemicals firm, to supply green hydrogen. Linde will build, own, and operate a nine-megawatt alkaline electrolyzer facility on Jurong Island in Singapore under this arrangement. This plant's major output will be green hydrogen, which Evonik wants to employ in the synthesis of methionine, an essential element in animal feed.

Market Diversification: Air Products & Chemicals, Inc. announced that it has been chosen as the hydrogen and technology provider for Alberta's first hydrogen fuel cell passenger vehicle fleet by Edmonton International Airport. Air Products will deploy a mobile hydrogen refueler at the airport to deliver hydrogen for the Toyota Mirai hydrogen fuel cell vehicle fleet.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like include Linde plc (Ireland), Air products and Chemicals, Inc. (US), Air Liquide (France), Worthington Industries (US), Cryolor (France), Hexagon Purus (Norway), and NPROXX (Netherlands).

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*Details on Business overview, Products/Solutions/Services offered, Recent developments, Deals, MnM view, Key strengths/Right to win, Strategic choices, and Weaknesses and competitive threats might not be captured in case of unlisted companies.

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