

Comprehensive Report on the Green Hydrogen Market: Opportunities and Challenges

The Business Research Company's Green Hydrogen Global Market Report 2025 – Market Size, Trends, And Global Forecast 2025-2034

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/EINPresswire.com/ -- What Is The Expected Cagr For The [Green Hydrogen Market](#) Through 2025?

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contributed to growth during this historic period, including the expansion of emerging markets, a low interest rate climate, the great environmental impact of traditional power generation methods, and a surge in demand from the chemical industry.

The [green hydrogen market size](#) is projected to witness substantial growth over the coming years, reaching \$16.29 billion in 2029 with a compound annual growth rate (CAGR) of 43.9%. This growth during the forecast period can be credited to a stronger economy, governmental initiatives,

an increasing global population coupled with urbanization, escalated investments in renewable energy production, an emphasis on lessening the dependency on foreign oil, a heightened demand from end-use sectors, and worldwide partnerships for preserving the environment. Notable trends during the forecast period consist of the implementation of AI technology to enhance operational efficiency, providing IoT-based advisory solutions to improve operational effectiveness, the utilization of digital twin technology approaches to mitigate risks, the implementation of smart meters to precisely assess the flow rate and the concentration of hydrogen gas, escalating investments to leverage the growing demand, and honing in on growth

strategies to cultivate a collaborative approach for expanding market share.

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What Are The Driving Factors Impacting The Green Hydrogen Market?

Growing environmental concerns are likely to stimulate the green hydrogen market during the forecast period. Green hydrogen, produced by electrolyzing water with low-carbon electricity, helps reduce emissions. The International Energy Agency (IEA) aims to achieve net-zero energy-related CO₂ emissions by 2050. Fossil fuels, which supply 80% of global energy, contribute heavily to poor air quality. The IEA estimates by 2050 indoor air pollution could cause 1.77 million premature deaths, and outdoor pollution 4.97 million deaths. Additionally, the WHO reports 4.2–7 million deaths annually from air pollution, with nine out of ten people exposed to high pollution levels. These factors are supporting green hydrogen market growth.

Which Players Dominate The Green Hydrogen Industry Landscape?

Major players in the Green Hydrogen include:

- Linde
- Siemens Energy AG
- Air Liquide
- Toshiba Energy Systems & Solutions Corporation
- Engie
- Ballard Power Systems
- Cummins Inc.
- Green Hydrogen Systems
- Larsen & Toubro (L&T)
- Engie Renewables

What Are The Key Trends Shaping The Green Hydrogen Industry?

The leading businesses in the green hydrogen market are making strategic moves to furrow a path towards creating a Green Hydrogen Electrolyzer Gigafactory. This development could lead to global progress in obtaining carbon neutrality and nurturing sustainable energy systems. Essentially, a Green Hydrogen Electrolyzer Gigafactory is a large plant solely committed to manufacturing electrolyzers, a crucial component in producing green hydrogen via electrolysis. Ohmium International, for instance, unveiled India's inaugural Green Hydrogen Electrolyzer Gigafactory in October 2023, as mentioned in a report. The lofty factory plans to manufacture 500 MW Proton Exchange Membrane (PEM) hydrogen electrolyzers annually, with the intention to eventually scale up to 2 GW. The facility's purpose is to decrease India's reliance on imported electrolyzers and enhance the production of green hydrogen, a carbon-free fuel that can be utilized in various sectors like fertilizer and steel production. This move by Ohmium International is in line with India's clean energy objectives and signals the country's potential to emerge as a world leader in the green hydrogen domain.

Global Green Hydrogen Market Segmentation By Type, Application, And Region

The green hydrogen market covered in this report is segmented –

- 1) By Technology: Alkaline Electrolyzer, Proton Exchange Membrane Electrolyzer, Solid Oxide Electrolyzer
- 2) By Application: Power Generation, Transport, Other Applications
- 3) By End User Industry: Petrochemicals, Food And Beverages, Medical, Chemical, Glass, Other End-Use Industries

Subsegments:

- 1) By Alkaline Electrolyzer: Low-Pressure Alkaline Electrolyzers, High-Pressure Alkaline Electrolyzers
- 2) By Proton Exchange Membrane Electrolyzer (PEM): Standard PEM Electrolyzers, High-Temperature PEM Electrolyzers
- 3) By Solid Oxide Electrolyzer: Intermediate Temperature Solid Oxide Electrolyzers, High-Temperature Solid Oxide Electrolyzers

View the full green hydrogen market report:

<https://www.thebusinessresearchcompany.com/report/green-hydrogen-global-market-report>

Which Region Holds The Largest Market Share In The Green Hydrogen Market?

In 2024, Europe dominated the green hydrogen market. The market report includes profiles of various regions such as Asia-Pacific, Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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