

Clean Hydrogen Market Report by Technology (Alkaline Electrolyzer, PEM Electrolyzer, SOE Electrolyzer), End User (Transport, Power Generation, Industrial, and Others), and Region 2024-2032

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Abstracts

The global clean hydrogen market size reached US\$ 1.7 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 5.6 Billion by 2032, exhibiting a growth rate (CAGR) of 13.7% during 2024-2032.

Clean hydrogen refers to hydrogen that is obtained through sustainable procedures and is instrumental in reducing the level of carbon emissions. Clean hydrogen can be produced through electrolysis powered by renewable sources (green hydrogen) or through steam methane reforming combined with carbon capture and storage (CCS) (blue hydrogen). The main advantage of clean hydrogen is its ability to produce and consume clean fuels without releasing direct greenhouse gas (GHG) or pollutants emissions, along with the availability of a wide range of clean production pathways. Additionally, hydrogen produced with biomass or biogas and carbon management technologies would result in negative emissions, thus removing traces of carbon dioxide (CO₂) emissions from the atmosphere. Clean hydrogen finds extensive applications in the refining and chemicals industries, power generation and energy storage, automobile, and heavy machinery.

Clean Hydrogen Market Trends:

The market is majorly driven by the escalating demand for carbon alternative fuels across the globe. This can be attributed to the growing environmental concerns regarding increasing carbon emissions from fossil fuel usage contributed from a wide range of end-use industries. Moreover, favorable policies and initiatives undertaken by government bodies of several countries supporting hydrogen economy are providing an

impetus to the market. The augmenting demand for clean hydrogen for charging fuel cell vehicles (FCV) to curb emissions from vehicles and minimize air pollution is also creating lucrative opportunities for clean hydrogen in transportation applications. The market is further propelled by a continual increase in fuel prices, along with increasing concerns regarding fossil fuel depletion. Apart from this, the rising awareness regarding global warming and climate change among the masses is creating a positive market outlook. Some of the other factors contributing to the market include rapid industrialization, inflating disposable income levels, and extensive research and development (R&D) activities conducted by key players.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global clean hydrogen market report, along with forecasts at the global, regional and country level from 2024-2032. Our report has categorized the market based on technology and end user.

Breakup by Technology:

- Alkaline Electrolyzer
- PEM Electrolyzer
- SOE Electrolyzer

Breakup by End User:

- Transport
- Power Generation
- Industrial
- Others

Breakup by Region:

- North America
 - United States
 - Canada
- Asia-Pacific
 - China
 - Japan
 - India
 - South Korea

Australia
Indonesia
Others
Europe
Germany
France
United Kingdom
Italy
Spain
Russia
Others
Latin America
Brazil
Mexico
Others
Middle East and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being Air Liquide S.A., Air Products and Chemicals Inc., Cummins Inc., Enapter S.r.l., Engie SA, Green Hydrogen Systems, Linde plc, Nel ASA, Plug Power Inc., SG H2 Energy Global LLC, Siemens Energy AG, SunGreenH2. Kindly, note that this only represents a partial list of companies, and the complete list has been provided in the report.

Key Questions Answered in This Report:

How has the global clean hydrogen market performed so far and how will it perform in the coming years?

What has been the impact of COVID-19 on the global clean hydrogen market?

What are the key regional markets?

What is the breakup of the market based on the technology?

What is the breakup of the market based on the end user?

What are the various stages in the value chain of the industry?

What are the key driving factors and challenges in the industry?

What is the structure of the global clean hydrogen market and who are the key players?

What is the degree of competition in the industry?

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