

# Hydrogen Energy Storage Market Report by Product Type (Liquid, Solid, Gas), Technology (Compression, Liquefaction, Material Based), Application (Stationary Power, Transportation), End User (Industrial, Commercial), and Region 2024-2032

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## Abstracts

The global hydrogen energy storage market size reached US\$ 19.5 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 31.8 Billion by 2032, exhibiting a growth rate (CAGR) of 5.5% during 2024-2032.

Hydrogen energy storage (HES) is a process involving the utilization of power electrolysis through the surplus energy generated by renewables during the low energy demand. It assists in increasing the reliability of supply and reducing carbon emissions and the overall consumption of conventional petroleum fuels. It provides ancillary grid services and fuel for material handling equipment (MHE), such as forklifts and airport tugs. It also offers high storage capacity as compared with pumped storage hydropower (PSH) and compressed air energy storage (CAES). As a result, HES is used to store hydrogen as compressed gas, cryogenic liquid, and loosely bonded hydride compounds.

### Hydrogen Energy Storage Market Trends:

The growing demand for HES to utilize excess electric energy represents one of the key factors driving the market. Moreover, its increasing application in stationary power for providing clean, efficient, and reliable off-grid power to homes, businesses, and utilities is propelling the market growth. In addition, there is a rise in the employment of hydrogen as a fuel as it does not emit greenhouse gases and harmfully affects the environment. This, along with the augmenting use of hydrogen as a fuel cell in electric vehicles (EVs), is contributing to the growth of the market. Besides this, HES offers

multiple opportunities to increase resiliency and improve the economics of energy supply systems comprising electric grid and gas pipelines. This, coupled with stringent regulations imposed by the government of several countries to encourage the use of sustainable energy sources, is positively influencing the market. Furthermore, key market players are extensively investing in research and development (R&D) activities to develop enhanced equipment for improving the production efficiency of hydrogen.

#### Key Market Segmentation:

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

#### Breakup by Product Type:

- Liquid
- Solid
- Gas

#### Breakup by Technology:

- Compression
- Liquefaction
- Material Based

#### Breakup by Application:

- Stationary Power
- Transportation

#### Breakup by End User:

- Industrial
- Commercial

#### 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., Chart Industries Inc., H2go Power, Hexagon Composites ASA, ITM Power plc, Linde plc, McPhy Energy S.A., Plug Power Inc. and Pragma Industries.

#### Key Questions Answered in This Report

1. How big is the global hydrogen energy storage market?
2. What is the expected growth rate of the global hydrogen energy storage market during 2024-2032?
3. What are the key factors driving the global hydrogen energy storage market?
4. What has been the impact of COVID-19 on the global hydrogen energy storage market?
5. What is the breakup of the global hydrogen energy storage market based on the

product type?

6. What is the breakup of the global hydrogen energy storage market based on the technology?

7. What is the breakup of the global hydrogen energy storage market based on the application?

8. What is the breakup of the global hydrogen energy storage market based on the end user?

9. What are the key regions in the global hydrogen energy storage market?

10. Who are the key players/companies in the global hydrogen energy storage market?

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