

Hydrogen Storage Market to Witness Significant Growth Amid Energy Transition

The global hydrogen storage market holds high growth potential, driven by its role in advancing hydrogen and fuel cell technologies for power and transportation

WILMINGTON, DE, UNITED STATES, March 4, 2025 /EINPresswire.com/ -- The [hydrogen storage market](#) was valued at \$2.8 billion in 2022, and is estimated to reach \$8.6 billion by 2032, growing at a CAGR of 12.7% from 2023 to 2032. Hydrogen storage is a key enabling technology for the advancement of hydrogen and fuel cell technologies in applications including stationary power, portable power, and transportation. Hydrogen has the highest energy per mass of any fuel; however, its low ambient temperature density results in a low energy per unit volume, therefore requiring the development of advanced storage methods that have potential for higher energy density.

Hydrogen storage system refers to the industry involved in the development, manufacture, and distribution of technologies and infrastructure required for the safe and efficient storage of hydrogen. Hydrogen storage systems play a critical role in enabling the utilization of hydrogen as an energy carrier for various applications. Hydrogen energy storage encompasses a range of storage technologies and solutions such as compresses gas storage, liquid storage, metal and chemical hydride storage, and solid-state storage.

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Increase in rate of adoption of hydrogen as a clean energy carrier and the need for efficient and reliable storage solutions are positively impacting the hydrogen storage system market development. The hydrogen storage system business includes various stakeholders, including technology providers, equipment manufacturers, infrastructure developers, research institutions, and government entities.

Hydrogen is a promising alternative for fossil fuels in numerous applications. Some of these applications are in the domain of hydrogen energy, and no other alternatives can compete with hydrogen, such as heavy and long-distance transport (e.g., heavy-duty trucks, ships, and planes), as well as energy-intensive manufacturing sectors (e.g., ferrous, and nonferrous metals, petroleum refining, chemicals, and cement).

These sectors are difficult to electrify, and other alternatives (for instance bio energy) that cannot

cater to the demand with the current technology. Therefore, various industries have adopted hydrogen as a replacement for fossil fuels to decarbonize and meet the need for energy. This is estimated to offer significant hydrogen storage system market opportunities for vendors during the forecast period. Hydrogen energy is important for supporting energy security and renewable energy, zero emission pathway, and economic growth.

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Hydrogen is an ideal option for an energy-intensive manufacturing sector, grid electrical supply, heavy and long-distance transport, and gas networks. Moreover, it is a key ingredient for producing chemicals. Usage of fossil fuels leads to carbon emissions; therefore, several industries are adopting hydrogen as an alternative for fossil fuels.

The transportation sector is a significant contributor to greenhouse gas emissions. Hydrogen fuel cells have gained attention as a zero-emission alternative for various modes of transportation, including cars, buses, trucks, and trains. Hydrogen storage systems enable the safe storage and efficient delivery of hydrogen to fuel cell vehicles, thereby boosting the adoption of this clean transportation solution. Analysis of the latest hydrogen storage system industry research report reveals that hydrogen fuel cell powered electric vehicles have been gaining traction among automakers for the last few years. Advances in hydrogen fuel cell technology are expected to drive the development of hydrogen energy storage and expansion of hydrogen storage infrastructure.

The hydrogen storage market is segmented into type, storage form, end-use industry, and region. On the basis of type, the market is categorized into cylinder, merchant, on-site, and on-board. On the basis of storage, the market is bifurcated into material-based hydrogen storage and physical hydrogen storage. On the basis of end-use industry, the market is classified into chemical, oil refineries, automotive & transportation, metalworking, and others. On the basis of region, it is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

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Major players operating in the hydrogen storage market are Air Liquide, Linde Plc, Worthington Industries Inc, Luxfer Holdings PLC, Hexagon Composites ASA, Chart Industries, Inc., INOXCVA, Hbank Technologies Inc., PRAGMA INDUSTRIES and Steelhead Composites.

Key Findings Of The Study

- By type, the cylinder segment is estimated to display the highest growth rate, in terms of revenue, from 2023 to 2032.
- By storage, the physical segment is estimated to display the highest growth rate, in terms of revenue, registering a CAGR of 13.4% from 2023 to 2032.
- By end-use industry, the chemical segment is estimated to display the highest growth rate, in

terms of revenue, from 2023 to 2032.

- By region, Asia-Pacific garnered the highest share of more than 40% in 2022, in terms of revenue.

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