

Hydrogen Storage: Materials, Technologies and Global Markets

<https://marketpublishers.com/r/HC65604B9E8EN.html>

Date: June 2021

Pages: 153

Price: US\$ 2,750.00 (Single User License)

ID: HC65604B9E8EN

Abstracts

Report Scope

Hydrogen is identified as a key future energy source. However, storing hydrogen can be a challenge and requires the development of advanced storage methods. Hence, the hydrogen storage space requires the presence of companies that are specialized in various hydrogen storage technologies. BCC Research defines hydrogen storage technologies as various forms of materials, storage media and technology used to store hydrogen in a form that can be used as energy source as and when required.

Hydrogen can be stored physically, or it can be stored using chemical or material-based methods. Physical storage currently dominates the market, and in physical form, hydrogen can be stored as either a gas or a liquid. Materials-based hydrogen storage includes metal hydride, chemical hydrogen storage and sorbent materials.

Hydrogen storage is the key enabling technology for the advancement of hydrogen and fuel cell technologies in various end-user industries such as chemicals, oil refining, metal processing and transportation. Of these, the chemicals end-user segment accounts for the majority of the market; however, the transportation end-user segment is witnessing the strongest growth in almost all geographical regions. The transportation end-user segment includes the mobility sector.

To calculate and segment the market, BCC Research has considered physical, chemical and material-based storage technologies for the hydrogen storage market. Along with product and solutions revenue, BCC Research has also considered the services revenue that a company reports within its total revenue. The report covers distinct types of companies such as -

Hydrogen production, fuel cell and hydrogen storage material and technology providers.

Manufacturers of industrial gases and related products.

Metal and advanced material manufacturers.

Others, including storage (such as high-pressure cylinder) suppliers and manufacturers.

However, stand-alone service providers that most often provide post-sales services are out of the scope of this report. Services that are not directly related to hydrogen storage technologies such as education, consulting, training, etc., are also beyond the scope of this report. Further, other forms of energy storage providers (companies) are beyond the scope of this report and hence are not covered.

The report begins by introducing the reader to how the market for hydrogen storage materials and technologies has evolved over time and how various factors impact the market. Building on this, the study proceeds to identify the following -

Primary forces with a direct impact on the hydrogen storage materials and technologies markets.

Secondary forces that have an indirect impact.

Key funding and financing in this space.

Some key challenges that may hinder the growth of this market.

Key trends visible in the market.

Leading applications of hydrogen storage technologies, along with leading end-user segments.

Demand in APAC, North America, Europe, MEA and South America for hydrogen storage technologies.

Report Includes

33 data tables and 15 additional tables

An overview of the global markets, technologies, and materials for hydrogen storage

Estimation of the market size and analyses of global market trends, with data from 2020, estimates for 2021 with projections of compound annual growth rates (CAGRs) through 2026

Market share analysis of the hydrogen storage by type, application, end-user, and region

Identification of market drivers, restraints and other forces impacting the global market and evaluation of current market size and forecast, and assessment of the changes and new developments in the hydrogen storage technologies market

Discussion on hydrogen usage as an energy source and how hydrogen can be used as an alternative fuel, and coverage of benefits and evolution of the hydrogen storage market, and comparative description of physical storage vs material-based storage

Insights into government regulations and stringent environmental standards for cleaner fuel and discussion on effect of urbanization and increased disposable income on hydrogen storage market

Market share analysis of the key companies of the industry and coverage of their proprietary technologies, strategic alliances, and other key market strategies and a relevant patent analysis

Comprehensive company profiles of the leading players of the industry, including Air Products and Chemicals Inc., Cella Energy Ltd., Hexagon Composites, Linde AG, Plug Power Inc.

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