

# Global Hydrogen-based Decarbonization Technology Market Growth (Status and Outlook) 2026-2032

<https://marketpublishers.com/r/GB9BB2EA982FEN.html>

Date: May 2026

Pages: 115

Price: US\$ 3,660.00 (Single User License)

ID: GB9BB2EA982FEN

## Abstracts

The global Hydrogen-based Decarbonization Technology market size is predicted to grow from US\$ 17610 million in 2025 to US\$ 64400 million in 2032; it is expected to grow at a CAGR of 20.7% from 2026 to 2032.

In 2025, the average global price of hydrogen-based decarbonization technology is projected to be \$1.5 million per megawatt (equivalent to \$1.5 per watt). This price primarily reflects the technological cost of the core component of green hydrogen production—the water electrolysis hydrogen production system. Hydrogen-based decarbonization technology refers to a comprehensive system that uses hydrogen energy (especially 'green hydrogen' and 'blue hydrogen') to replace fossil fuels, thereby directly reducing or eliminating carbon dioxide emissions. It addresses the persistent high-carbon emissions in industries, transportation, and power generation—sectors difficult to electrify—as well as the challenges of large-scale, long-term storage and cross-regional distribution of renewable energy. Its role is to provide scalable zero-carbon solutions for energy-intensive industries such as steel, chemicals, and shipping through hydrogen production and utilization, serving as a strategic pillar for achieving deep decarbonization and energy security. The upstream sector comprises clean hydrogen production and infrastructure, including manufacturers of hydrogen production equipment such as electrolyzers, renewable energy power suppliers, and builders of hydrogen pipelines and refueling stations. The downstream sector encompasses a diverse application market, directly connecting with heavy industrial users in steel, synthetic fuels, and chemicals, as well as energy sectors such as fuel cell vehicles, distributed power generation, and energy storage.

Key market drivers for hydrogen-based decarbonization technology: 1. Mandatory global climate policy: National carbon neutrality legislation, carbon pricing mechanisms,

and national hydrogen energy strategies create mandatory market demand for green/blue hydrogen through regulations and fiscal incentives. 2. Strategic guarantee for national energy security: Aiming to reduce dependence on fossil fuel imports and enhance energy self-sufficiency and system resilience by integrating and storing domestic renewable energy through hydrogen energy. 3. Restructuring and competition in the industrial value chain: On the one hand, it drives high-carbon industries such as steel and chemicals to transform for survival; on the other hand, it spawns new high-end equipment industrial chains such as electrolyzers and fuel cells, forming a huge new economic growth point. 4. Continuous improvement in techno-economic viability: The continuous decline in renewable energy power generation costs and the large-scale manufacturing of core equipment such as electrolyzers jointly drive the rapid decline in the cost of green hydrogen, making it economically feasible.

LPI (LP Information)' newest research report, the “Hydrogen-based Decarbonization Technology Industry Forecast” looks at past sales and reviews total world Hydrogen-based Decarbonization Technology sales in 2025, providing a comprehensive analysis by region and market sector of projected Hydrogen-based Decarbonization Technology sales for 2026 through 2032. With Hydrogen-based Decarbonization Technology sales broken down by region, market sector and sub-sector, this report provides a detailed analysis in US\$ millions of the world Hydrogen-based Decarbonization Technology industry.

This Insight Report provides a comprehensive analysis of the global Hydrogen-based Decarbonization Technology landscape and highlights key trends related to product segmentation, company formation, revenue, and market share, latest development, and M&A activity. This report also analyses the strategies of leading global companies with a focus on Hydrogen-based Decarbonization Technology portfolios and capabilities, market entry strategies, market positions, and geographic footprints, to better understand these firms' unique position in an accelerating global Hydrogen-based Decarbonization Technology market.

This Insight Report evaluates the key market trends, drivers, and affecting factors shaping the global outlook for Hydrogen-based Decarbonization Technology and breaks down the forecast by Type, by Application, geography, and market size to highlight emerging pockets of opportunity. With a transparent methodology based on hundreds of bottom-up qualitative and quantitative market inputs, this study forecast offers a highly nuanced view of the current state and future trajectory in the global Hydrogen-based Decarbonization Technology.

This report presents a comprehensive overview, market shares, and growth opportunities of Hydrogen-based Decarbonization Technology market by product type, application, key players and key regions and countries.

#### Segmentation by Type:

Zero-carbon Hydrogen Production

Low-carbon hydrogen Production

#### Segmentation by Technology Integration:

Hydrogen Energy Provides Power for Carbon Capture

Hydrogen Energy and Carbon-Containing Gas Co-Processing

Direct Replacement with Hydrogen Energy Coupled with Carbon Capture

#### Segmentation by System Scale:

Small-scale Distributed System

Medium-scale Clustered System

Large Hub and National-level Network System

#### Segmentation by Application:

Industrial

Transportation

Energy

Architecture

Other

This report also splits the market by region:

### Americas

United States

Canada

Mexico

Brazil

### APAC

China

Japan

Korea

Southeast Asia

India

Australia

### Europe

Germany

France

UK

Italy

Russia

Middle East & Africa

Egypt

South Africa

Israel

Turkey

GCC Countries

The below companies that are profiled have been selected based on inputs gathered from primary experts and analyzing the company's coverage, product portfolio, its market penetration.

Linde plc

Air Products & Chemicals, Inc

thyssenkrupp nucera AG & Co. KGaA

Siemens Energy AG

Plug Power Inc

Bloom Energy Corporation

Kawasaki Heavy Industries, Ltd.

TotalEnergies SE

LONGi Hydrogen Energy

State Power Investment Corporation Limited (SPIC)

Johnson Matthey Plc

Sungrow Power Supply Co., Ltd.

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