

Hydrogen Industry to Expand at 10.4% CAGR, Reaching \$47.83 Billion by 2034

Hydrogen's zero-emission potential, tech advancements, and global investments drive its adoption in industries, transport, and clean energy.

ROCKVILLE, MD, UNITED STATES, February 24, 2025 /EINPresswire.com/ -- According to a new report by Fact.MR, The global [hydrogen market](#) is valued at US\$ 18.23 billion in 2024 and is growing at a robust 10.4% CAGR through 2034. As a zero-emission fuel, hydrogen is a key driver in reducing



greenhouse gas emissions and advancing sustainability across transportation, power generation, and industry. Innovations in electrolysis, fuel cells, and storage are enhancing efficiency, while global collaborations among governments and industries are accelerating technological advancements and market growth.

Governments worldwide are prioritizing carbon emission reduction, fueling the demand for clean energy alternatives like hydrogen. Advancements in electrolysis, fuel cells, and storage technologies are improving hydrogen production efficiency and cost-effectiveness. Industries such as refineries, chemicals, and steel are increasingly adopting hydrogen to minimize emissions. Hydrogen fuel-cell vehicles are emerging as a zero-emission alternative, driving investments in infrastructure. Both private and public sectors are investing in hydrogen-related projects, R&D, and infrastructure development. Growing awareness of hydrogen's environmental benefits is further stimulating its adoption across various industries.

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Hydrogen, when produced using renewable energy or low-carbon methods like electrolysis, offers a viable pathway to decarbonize multiple sectors. As a clean energy carrier that emits no harmful pollutants or CO₂ during use, hydrogen is crucial in achieving global climate goals. Governments worldwide are setting ambitious emission reduction targets, positioning green

hydrogen as a key solution in the transition to a carbon-neutral economy. Industries such as refineries, chemicals, and steel, traditionally reliant on fossil fuels, are increasingly adopting hydrogen to lower their carbon footprints. It plays a vital role in desulfurization, cleaner fuel production, and ammonia synthesis for fertilizers. With rising sustainability pressures, hydrogen's eco-friendly attributes make it essential for fostering cleaner industrial operations and driving a low-carbon economy.

Key Takeaways from the Market Study:

The global hydrogen market is expected to reach US\$ 47.83 billion by the end of 2034, growing at a strong CAGR of 10.4% from 2024 to 2034.

East Asia leads the global hydrogen market, with China and South Korea at the forefront of adoption. China, the world's largest greenhouse gas emitter, is aggressively shifting towards cleaner energy to meet its carbon neutrality targets. The country's hydrogen market is driven by strong policy support, financial incentives, and substantial investments in hydrogen production and utilization. Favorable policies, such as subsidies and production targets, create a conducive environment for industry players. China's industrial and technological expertise enables large-scale hydrogen production, reducing costs and improving efficiency through advancements in fuel cells, electrolysis, and storage technologies. The growing interest in hydrogen fuel-cell vehicles has further accelerated investments in infrastructure, positioning China as a key player in global hydrogen adoption. International collaborations are also aiding knowledge exchange, technology transfer, and market expansion, reinforcing China's role as a leader in the hydrogen sector.

In North America, the United States is rapidly advancing its hydrogen market with strong policy backing, abundant renewable resources, and infrastructure readiness. With a vast supply of wind and solar energy, the U.S. has a significant advantage in producing green hydrogen through electrolysis. The country's established energy infrastructure further facilitates scaling up hydrogen production, storage, and distribution. The transportation sector plays a crucial role in hydrogen adoption, with major automotive and technology firms investing in fuel-cell technology to drive innovation and cost reduction. Government grants and incentives are encouraging the development of hydrogen-powered vehicles, enhancing their market appeal and competitiveness. These collaborative initiatives are fostering advancements in hydrogen technology, positioning the U.S. as a significant contributor to the global hydrogen economy.

Key players in Hydrogen Market:

Key players in the hydrogen Industry are Messer Group GmbH; Hydrogenics Corp.; Nel ASA; Teledyne Technologies Inc.; Southern Industrial Gas Sdn Bhd; Linde plc; Air Products and Chemicals, Inc.; Air Liquide; Chevron Corporation; Saudi Arabian Oil Co.; Uniper SE; Worthington Industries; Gulf Cryo Holding C.S.C; Hexagon Purus; Bristol Gases - Concorde Corodex Group; Oxygen Service Company, Inc.; BayoTech; Luxfer Gas Cylinders; Quantum Fuel Systems LLC; AMS

Composite Cylinders; Weldship Corporation.

Hydrogen Adoption Across Industries and the Rise of Centralized Production

Hydrogen is increasingly being utilized across various industries, from transportation to industrial manufacturing. Fuel-cell vehicles, including hydrogen-powered trains and buses, are emerging as zero-emission alternatives, contributing to pollution reduction. Industries such as refining, ammonia production, and steel manufacturing are integrating hydrogen to enhance efficiency and lower carbon emissions.

Centralized hydrogen production dominates the market due to its efficiency, economies of scale, and technological advancements. Large-scale facilities leverage electrolysis, steam methane reforming (SMR), and other advanced methods to optimize costs and ensure a stable supply. These hubs facilitate better integration of carbon capture and storage (CCS) or carbon capture, utilization, and storage (CCUS) technologies, aligning with sustainability goals. Additionally, centralized production simplifies transportation logistics through dedicated pipelines and bulk transport methods, ensuring cost-effective hydrogen distribution across industries.

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Competitive Landscape in the Hydrogen Market

Leading companies in the hydrogen market, including Messer Group GmbH, Nel ASA, Southern Industrial Gas Sdn Bhd, Air Liquide S.A., and The Linde Group, are actively competing for market share. These industry giants leverage their expertise and significant investments in research and development to drive innovation in efficient and cost-effective hydrogen production, maintaining their leadership positions.

The market's competitive landscape is defined by continuous innovation, strategic partnerships, and advancements in hydrogen technologies to enhance sustainability and efficiency. In April 2023, Linde plc signed a long-term agreement with Evonik to supply green hydrogen, reinforcing its commitment to clean energy solutions. Similarly, in July 2023, Air Liquide and KBR announced a collaboration to provide fully integrated low-carbon ammonia solutions utilizing Autothermal Reforming (ATR) technology.

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[Green Hydrogen Market](#): The green hydrogen market is valued at US\$ 6.2 billion in 2023 and is expected to expand at a remarkable CAGR of 31.3% from 2023 to 2033, reaching US\$ 94 billion by the end of the forecast period.

[Industrial Hydrogen Market](#): The global industrial hydrogen market size is forecasted to reach a

valuation of US\$ 19,800 million in 2024, showing a consistent growth trajectory with a projected CAGR of 4.9% until 2034. This anticipated expansion is expected to raise the market to a size of US\$ 31,946.3 million by 2034.

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