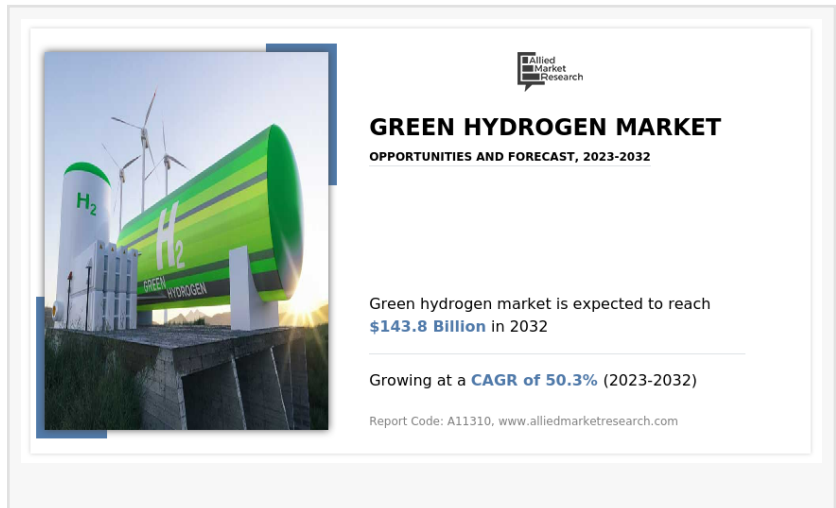


Green Hydrogen Market Soars with 50.3% CAGR, Driven by Renewable Energy Adoption

□ *Green Hydrogen Market to Reach \$143.8 Billion by 2032, Fueled by Global Clean Energy Transition*

WILMINGTON, DE, UNITED STATES,
October 15, 2025 /EINPresswire.com/ --

According to a new report published by Allied Market Research, the global [green hydrogen market](#) size was valued at \$2.5 billion in 2022 and is projected to reach \$143.8 billion by 2032, growing at an impressive CAGR of 50.3% from 2023 to 2032. The exponential rise of this market highlights the world's rapid shift toward clean and sustainable energy solutions to meet net-zero goals.



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Green hydrogen market to hit \$143.8 billion by 2032, driven by renewable energy adoption and global decarbonization goals. □□”
Allied Market Research

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□ Key Findings from the Study

The proton exchange membrane [electrolyzer](#) segment accounted for over half of the market share in 2022.

The transport application segment represented nearly half of the market revenue in 2022.

The chemical industry accounted for less than one-third of the total market share.

Asia-Pacific dominated with over two-fifths of global revenue in 2022 and is projected to continue its lead.

□ Understanding Green Hydrogen

Green hydrogen, also known as renewable hydrogen, is produced using renewable energy sources such as solar, wind, or geothermal power. It is widely regarded as a crucial enabler for decarbonizing heavy industries, transportation, and power generation. By replacing fossil fuels with hydrogen derived from clean energy, industries can significantly reduce greenhouse gas emissions while enhancing energy security.

Among the technologies powering the green hydrogen revolution, proton exchange membrane (PEM) electrolyzers and alkaline electrolyzers are the most promising. Alkaline electrolyzers, in particular, are recognized for their high efficiency and cost-effectiveness, converting electricity into hydrogen gas with up to 70% efficiency. This makes them a key technology for sustainable hydrogen production.

□□ Key Market Drivers

The green hydrogen market growth is primarily driven by:

Rising demand from food & beverage, medical, chemical, and petrochemical sectors.

Increasing power generation needs due to rapid urbanization and industrialization.

Strong global policies promoting decarbonization and renewable energy adoption.

As the global population expands, so does the demand for electricity. Traditional fossil fuel-based systems struggle to meet this demand sustainably. Green hydrogen presents a viable alternative, providing clean power while complementing renewable grids.

The food and beverage industry is expected to grow at a CAGR of 51.6%, as it increasingly adopts hydrogen-based solutions for high-energy operations such as refrigeration, processing, and packaging.

□ Transportation Leading the Charge

Based on application, the transportation segment dominated the market in 2022, accounting for nearly half of the global green hydrogen market revenue. This is due to the growing adoption of [hydrogen fuel cell vehicles \(FCVs\)](#), which offer longer range and faster refueling times than battery electric vehicles.

Government incentives, infrastructure investments, and strategic partnerships among automakers are accelerating the adoption of hydrogen-powered mobility. Moreover, the push for decarbonization in freight and aviation sectors further strengthens green hydrogen's foothold in transportation.

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□ Regional Insights

In 2023, Asia-Pacific led the global market, accounting for more than two-fifths of the total revenue. The region's strong presence is attributed to:

Massive investments in renewable energy infrastructure.

Government initiatives promoting hydrogen economy roadmaps in countries like Japan, South Korea, India, and China.

Rapid industrial expansion and growing clean fuel adoption.

Europe and North America follow closely, driven by strategic policy frameworks and funding programs that support green hydrogen projects and hydrogen hubs.

□ Industrial and Government Support

According to Carbon Solutions, less than 1% of the 10 million metric tons of hydrogen produced annually in the U.S. is green. However, this is expected to change rapidly. The U.S. Department of Energy (DOE) aims to produce 10 million tons of clean hydrogen annually by 2030, 20 million tons by 2040, and 50 million tons by 2050.

The U.S. government's \$8 billion investment in hydrogen hubs will play a critical role in scaling up production and adoption. Similarly, European and Asian governments are funding hydrogen infrastructure, R&D programs, and renewable projects to build a sustainable energy ecosystem.

□ Technological Advancements

The market is also witnessing continuous innovation, with R&D focusing on improving electrolyzer efficiency, scalability, and cost reduction. As production costs decline, green hydrogen is expected to achieve price parity with conventional hydrogen sources, unlocking vast new applications in steel manufacturing, ammonia production, and power storage.

□ Key Market Players

Prominent players shaping the global green hydrogen industry include: Green Hydrogen Systems, Air Liquide, Shell plc, Enapter S.r.l., Plug Power Inc., Ballard Power Systems, Linde plc, Reliance Industries, GAIL (India) Limited, and Adani Green Energy Ltd.

These companies are actively pursuing strategic partnerships, technology collaborations, and large-scale project deployments to strengthen their global presence.

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□ Conclusion

The green hydrogen market stands at the forefront of the clean energy revolution. With governments, industries, and technology providers aligning to decarbonize global economies, hydrogen is rapidly transitioning from a futuristic concept to a mainstream energy source. As innovation accelerates and costs decline, green hydrogen will play a pivotal role in achieving net-zero emissions and building a sustainable energy future for generations to come. □□

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Pawan Kumar, the CEO of Allied Market Research, is leading the organization toward providing high-quality data and insights. We are in professional corporate relations with various companies and this helps us in digging out market data that helps us generate accurate research data tables and confirms utmost accuracy in our market forecasting. Each and every data presented in the reports published by us is extracted through primary interviews with top officials from leading companies of domain concerned. Our secondary data procurement methodology includes deep online and offline research and discussion with knowledgeable professionals and analysts in the industry.

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