

Europe Green Hydrogen Market Forecast to 2030 - Regional Analysis - by Technology (Alkaline Electrolysis and PEM Electrolysis), Renewable Source (Wind Energy and Solar Energy), and End-Use Industry (Chemical, Power, Food & Beverages, Medical, Petrochemicals, and Others)

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Abstracts

The Europe green hydrogen market is expected to grow from US\$ 1,456.82 million in 2022 to US\$ 29,146.42 million by 2030. It is estimated to grow at a CAGR of 45.4% from 2022 to 2030.

Growing Investment in Renewable Energy Fuels Europe Green Hydrogen Market According to the International Energy Agency (IEA), in 2022, the global energy demand will increase by 8%. Investments in cleaner technologies are significantly growing due to a structural shift in capital flows toward such technologies. For instance, according to the Solar Power Organization of Europe, Europe installed 41.4 GW of solar plants in 2022, showcasing an increase of 47% from 2021. To achieve net-zero emissions, there is a growing focus on expanding renewable energy capacity and integrating it into the energy mix. Green hydrogen provides a means to store and utilize excess renewable energy, especially from intermittent sources such as solar and wind. This synergy between renewable energy and green hydrogen supports the development of a sustainable and reliable energy system. Thus, the increasing investments in renewable energy are contributing to the growth of the green hydrogen market.

Europe Green Hydrogen Market Overview

Since Russia's invasion of Ukraine, the hydrogen sector has gained significant importance in Europe due to the need for energy security and the EU's commitment to achieving net zero emissions. As the world's second-largest producer of natural gas, Russia plays a critical role in global hydrogen production, which has prompted the

European Union to reevaluate its energy supply chains and reduce dependence on Russian fossil fuels. Renewable hydrogen has become a central focus of the EU's REPowerEU Plan, aimed at phasing out Russian fossil fuels as quickly as possible. By 2030, the EU aims to cut emissions by 55% compared to 1990 levels, and green hydrogen is a crucial component of this effort.

To bolster energy security and meet emission reduction goals, the EU has proposed producing 10 million metric tons of renewable hydrogen domestically and importing an additional 10 million metric tonnes by 2030. Several European countries, including Spain, France, Germany, and Portugal, have taken steps to cooperate and build a hydrogen pipeline by 2030. This pipeline will facilitate the transportation of ~2 million metric tonnes of hydrogen annually from these countries to France. As Europe looks to secure its energy supply and accelerate the transition to a carbon-neutral future, green hydrogen emerges as a vital resource and a key solution to reduce reliance on fossil fuels and achieve ambitious climate targets.

Europe Green Hydrogen Market Revenue and Forecast to 2030 (US\$ Million)

Europe Green Hydrogen Market Segmentation

The Europe green hydrogen market is segmented into technology, renewable source, end-use industry, and country.

Based on technology, the Europe green hydrogen market is bifurcated into alkaline electrolysis and PEM electrolysis. The alkaline electrolysis segment accounted a larger share of the Europe green hydrogen market in 2022.

By renewable source, the Europe green hydrogen market is divided into wind energy and solar energy. The solar energy segment held a larger share of the Europe green hydrogen market in 2022.

By end use, the Europe green hydrogen market is segmented into chemical, power, food and beverages, medical, petrochemicals, and others. In 2022, the power segment held a largest share of the Europe green hydrogen market.

Based on country, the Europe green hydrogen market is segmented into Germany, France, Italy, the UK, Russia, Spain, and the Rest of Europe. Germany dominated the Europe green hydrogen market in 2022.

Air Products & Chemicals Inc, Cummins Inc, Engie SA, L'Air Liquide SA, Linde Plc, Nel ASA, Orsted AS, Siemens Energy AG, Toshiba Energy Systems & Solutions Corp, and Uniper SE are some of the leading companies operating in the Europe green hydrogen market.

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