

Electrolyzers Market by Technology (Alkaline, Proton Exchange Membrane (PEM), Solid Oxide Electrolyzer, AEM), Application (Energy, Mobility, Industrial, Grid Injection), Power Rating (<500 kW, 500-2,000 kW, >2,000 kW), Region - Global Forecast to 2030

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Report description:

The global electrolyzers market is estimated to grow from USD 0.5 billion in 2023 to USD 57.2 billion by 2030; it is expected to record a CAGR of 97.7% during the forecast period. Growing investments in hydrogen-related infrastructure and projects from both the public and private sectors contribute to the growth of the electrolyzers industry. These investments accelerate the adoption and commercialization of electrolyzer technology. Government subsidies and regulatory frameworks aimed at promoting clean energy technologies further drive the growth of electrolyzers market.

"Alkaline Electrolyzers: The largest segment of the electrolyzers market, by technology "

Based on Technology, the electrolyzers market has been segmented into alkaline electrolyzers (AE), proton exchange membrane (PEM), solid oxide electrolyzers (SOE), and anion exchange membrane (AEM). The alkaline electrolyzers segment is expected to be the largest segment during the forecast period. Alkaline electrolyzers are experiencing growth as it among the established and commercially proven electrolysis technologies. Hydrogen is being investigated as a clean energy source by industries such as chemicals, refineries, and transportation. Alkaline electrolyzers are crucial in supplying hydrogen to these industries to reduce carbon emissions. According to industry experts, the energy efficiency of devices based on alkaline electrolyzer technology ranges between 55 and 60 percent and is highly dependent on electrolyzer capacity and hydrogen delivery pressure.

"By Power Rating, <500 kW segment is expected to be the fastest growing segment during the forecast period."

Based on the Power Rating, the electrolyzers market is segmented into <500 kW, 500-2,000 kW, and >2,000 kW. The <500 kW segment is expected to be the fastest growing segment of the electrolyzers market during the forecast period. Smaller capacity electrolyzers provide a solution for local energy production in places where grid connection is limited or inconsistent. They enable

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on-site hydrogen generation, minimising reliance on centralised energy sources. Electrolyzers with power rating <500 kW and 500-2,000 kW is also mostly utilized for grid injection, and power generation applications.

"Asia-Pacific is expected to be the second largest growing region in the electrolyzers market."

Asia Pacific is expected to be the second largest region in the electrolyzers market during the forecast period. Asia Pacific is one of the rapid growing economic region in the world with highest population in the world. Asia Pacific has the highest greenhouse gas emission in the world. To overcome such issues, Asia Pacific adopted green technology to efficiently meet the growing energy needs and reduce GHG emissions which presents opportunities for the electrolyzers. For example, The India Energy Storage Alliance's (IESA) MIGHT (Mobility and Infrastructure with Green Hydrogen Technologies) initiative aims to investigate options for India to utilize the potential of green hydrogen technologies for green energy acceleration and clean transportation uptake.

Breakdown of Primaries:

In-depth interviews have been conducted with various key industry participants, subject-matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information and assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 60%, Tier 2- 25%, and Tier 3- 15%

By Designation: C-Level- 35%, Director Level- 25%, and Others- 40%

By Region: North America- 25%, Europe- 25%, Asia Pacific- 30%, Rest of the World - 20%

Note: Others include sales managers, engineers, and regional managers.

Note: The tiers of the companies are defined on the basis of their total revenues as of 2022. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: < USD 500 million

The electrolyzers market is dominated by a few major players that have a wide regional presence. The leading players in the electrolyzers market are thyssenkrupp nucera (Germany) , John Cockerill (Belgium), Nel ASA (Norway), Plug Power Inc. (US), and Siemens Energy (Germany). The major strategy adopted by the players includes new product launches, contracts, agreements, partnerships, joint ventures, acquisitions, and investments & expansions.

Research Coverage:

The report defines, describes, and forecasts the global electrolyzers market by , source, technology, generation and delivery mode, application, and region. It also offers a detailed qualitative and quantitative analysis of the market. The report comprehensively reviews the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates in terms of value, and future trends in the electrolyzers market.

Key Benefits of Buying the Report

-□Government initiatives at the national and international levels amplify the impact of investment on the electrolyzer market.

Robust policy frameworks, often accompanied by financial incentives, subsidies, and regulatory support, encourage widespread adoption of electrolyzers for green hydrogen production. Factors such as high initial cost and lack of infrastructure restrain the growth of the market. The growing energy transition towards renewable energy sources and rapid urbanization are expected to present lucrative opportunities for the players operating in the electrolyzers market.

-□Product Development/ Innovation: The electrolyzers market is witnessing significant product development and innovation, driven by the growing demand for environmentally friendly, safe and sustainable products. Companies are investing in developing advanced electrolyzer technologies for various applications.

-□Market Development: Nel ASA has finalized an agreement valued at around USD 12.9 million, supplying 40 MW of alkaline electrolyzer equipment to HyCC, a leading partner in the production of green hydrogen for its H2eron project located in Delfzijl, Netherlands.

-□Market Diversification: John Cockerill announced to enter into the US hydrogen market by acquiring manufacturing space in Baytown, Houston, Texas, for a new gigafactory. The facility is expected to produce 1GW per year of electrolyzers

-□Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players, like

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include thyssenkrupp nucera (Germany), John Cockerill (Belgium), Nel ASA (Norway), Plug Power Inc. (US), and Siemens Energy (Germany), among others in the electrolyzers market.

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