

# Electrolyzer Market Set to Grow at a Strong 27%+ CAGR Through 2032

*Electrolyzer Market to Hit \$34.4 Billion by 2032, Driven by Surge in Green Hydrogen Projects*

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According to a new report published by Allied Market Research, the global [electrolyzer market](#) size was valued at \$3 billion in 2022 and is projected to reach \$34.4 billion by 2032, growing at a CAGR of 27.2% from 2023 to 2032. Electrolyzers are essential devices that split water into hydrogen and oxygen through electrolysis. The resulting hydrogen is used across diverse sectors — including chemical, automotive, industrial, and power generation — making electrolyzers a cornerstone technology in the global shift toward green hydrogen and clean energy.

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Electrolyzer market to surge from \$3B in 2022 to \$34.4B by 2032, driven by green hydrogen expansion, clean energy targets, and industrial decarbonization.”

*Allied Market Research*

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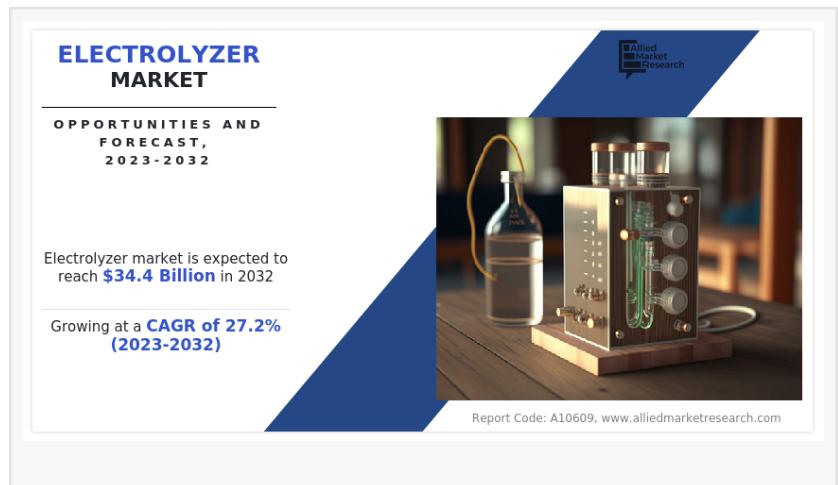
Alkaline electrolyzers currently dominate the market as the most widely adopted electrolysis method. However, emerging technologies such as solid oxide and proton exchange membrane (PEM) electrolyzers are expected to

accelerate future growth due to their high efficiency and scalability.

## □ Key Insights

The solid oxide electrolyzer segment is projected to grow at a CAGR of 28.1% during 2023–2032.

The Asia-Pacific region will exhibit the fastest revenue growth of 27.5%.



Global electrolyzer manufacturing capacity could reach 130 GW per year by 2030.

Europe and Asia-Pacific remain the leading hubs for [hydrogen infrastructure](#) development.

## □□ Market Dynamics

### □ Government Policies Driving Hydrogen Infrastructure

Supportive government initiatives and carbon reduction policies are major factors driving electrolyzer market growth. Countries worldwide are investing in hydrogen infrastructure — including pipelines, storage systems, charging stations, and industrial applications — to meet net-zero emission targets.

For instance, various national hydrogen roadmaps emphasize large-scale deployment of electrolyzers to decarbonize heavy industries and transport sectors. These initiatives, combined with public-private collaborations, are strengthening the global clean hydrogen supply chain.

### □ Technological Advancements and Cost Reduction

Continuous technological innovation and declining electrolyzer costs are making hydrogen production more competitive. Advances in materials science, automation, and system design are improving electrolyzer efficiency while reducing maintenance and operational expenses. This has encouraged greater adoption in industries transitioning toward renewable and sustainable power sources.

Moreover, ongoing investments in [renewable energy](#) projects — such as solar and wind — are expanding the use of electrolyzers to convert surplus renewable electricity into hydrogen, a process known as power-to-gas (P2G).

### □ Rapid Expansion of Manufacturing Capacity

Global electrolyzer manufacturing capacity grew by over 25% in 2022, reaching nearly 11 GW per year. Europe and China together accounted for two-thirds of this capacity. However, utilization rates remain low as most new installations are still ramping up.

By 2030, electrolyzer production capacity could exceed 130 GW annually, according to industry projections. This would meet over 75% of the capacity required to achieve net-zero emissions under the NZE scenario. However, with less than 10% of projects reaching a final investment decision (FID), long-term growth will depend on stable policy frameworks and financing support.

## □ Market Opportunities

**Rising Green Hydrogen Demand:** The global focus on decarbonizing energy systems is driving investments in large-scale hydrogen projects.

**Industrial Integration:** Electrolyzers are increasingly used in steelmaking, ammonia production, and chemical manufacturing.

**Transport Applications:** The rise of fuel cell electric vehicles (FCEVs) is boosting demand for high-capacity electrolyzers.

**Energy Storage Solutions:** Hydrogen produced from electrolysis serves as a flexible energy storage medium, balancing grid supply and demand.

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□ Market Segmentation

By Product

Alkaline Electrolyzer

Proton Exchange Membrane (PEM) Electrolyzer

Solid Oxide Electrolyzer

Anion Exchange Membrane (AEM) Electrolyzer

The alkaline electrolyzer segment dominated in 2022 due to its long-standing use and cost-effectiveness. However, the solid oxide electrolyzer segment is expected to register the fastest CAGR of 28.1%, supported by its superior efficiency, thermal stability, and compatibility with renewable power.

By Capacity

Less than 500 kW

500 kW to 2 MW

Above 2 MW

In 2022, electrolyzers with capacities between 500 kW and 2 MW led the market, driven by industrial installations and pilot-scale projects. However, the above 2 MW segment is projected to witness robust growth during 2023–2032 due to increasing use in large-scale industrial and

transportation applications.

By Application

Power Generation

Transportation

Industry Energy

Industry Feedstock

Building Heat & Power

Others

The power generation segment accounted for the largest market share in 2022, primarily due to rising adoption in industrial hydrogen production. Meanwhile, the transportation segment is projected to grow at the highest CAGR, as governments and automakers invest heavily in hydrogen-powered mobility solutions.

By Region

North America (U.S., Canada, Mexico)

Europe (UK, Germany, France, Italy, Spain, Rest of Europe)

Asia-Pacific (China, Japan, India, South Korea, Rest of Asia-Pacific)

LAMEA (Brazil, South Africa, Saudi Arabia, Rest of LAMEA)

The Asia-Pacific region is expected to witness the fastest growth (CAGR 27.5%) through 2032, driven by rising electric vehicle adoption, renewable energy expansion, and large-scale hydrogen projects in China, Japan, South Korea, and India. Europe and Asia-Pacific together dominated the market in 2022, reflecting strong regional commitment to green hydrogen economies.

□ Key Market Players

Prominent players in the global electrolyzer market include: Cummins Inc., Nel ASA, Siemens AG, Toshiba Corporation, Air Liquide, Plug Power Inc., McPhy Energy, ITM Power, Iberdrola S.A., and Bloom Energy.

These companies are focusing on strategic collaborations, mergers, and capacity expansions to

strengthen their global footprint and support the growing hydrogen economy.

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## □ Conclusion

The electrolyzer market is poised to play a pivotal role in achieving global decarbonization goals and advancing the clean hydrogen economy. Backed by government incentives, technological progress, and surging renewable energy adoption, the market is on track for exponential growth. As nations expand their hydrogen infrastructure, electrolyzers will remain a key enabler in building a sustainable, carbon-neutral, and energy-secure future.

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David Correa

Allied Market Research

+ + + + + + + + + + +1 800-792-5285

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