

# **Electrolysis Captive Hydrogen Generation Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 - 2032**

<https://marketpublishers.com/r/E78276FE37B1EN.html>

Date: October 2024

Pages: 75

Price: US\$ 4,365.00 (Single User License)

ID: E78276FE37B1EN

## **Abstracts**

The Global Electrolysis Captive Hydrogen Generation Market was valued at USD 11.1 billion in 2023 and is expected to grow at a CAGR of 7% between 2024 and 2032. This market centers on the on-site hydrogen production at industrial facilities and power plants through electrolysis, a process that splits water into hydrogen and oxygen using electricity. Termed "captive" hydrogen, this method is designed for internal or localized use rather than for widespread distribution. The increasing demand for cleaner energy and the need to reduce greenhouse gas emissions are key factors driving the adoption of electrolysis for hydrogen generation. This method enables industries to produce hydrogen without the associated carbon emissions, helping them comply with strict environmental regulations and sustainability goals.

Furthermore, supportive government policies, including tax incentives and subsidies for green hydrogen production, accelerate the transition to this cleaner technology. In terms of application, the chemical sector is projected to dominate the electrolysis captive hydrogen generation market, surpassing USD 11 billion by 2032. With growing regulatory pressure to reduce emissions, chemical manufacturers increasingly turn to electrolysis as a cleaner production method. Many large facilities integrate renewable energy sources, such as solar and wind, to power hydrogen production, ensuring a stable, cost-effective, and clean fuel supply. This shift also helps reduce dependency on external energy sources and the grid.

The Asia Pacific region is poised for significant growth, with the electrolysis captive hydrogen generation market expected to exceed USD 12 billion by 2032. Rapid industrialization, coupled with robust hydrogen policies like Japan's "Basic Hydrogen Strategy" and South Korea's "Hydrogen Economy Roadmap," is boosting the sector.

These policies aim to establish a large-scale hydrogen economy and promote fuel cell vehicles, further strengthening the market's expansion across the region.

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