

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

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## **Abstracts**

The Global Electrolysis Merchant Hydrogen Generation Market reached USD 2.1 billion in 2023 and is projected to grow at 8.2% CAGR from 2024 to 2032. This market involves hydrogen production via electrolysis technology specifically for commercial distribution to various sectors, including transportation, chemicals, and energy, allowing businesses to access clean hydrogen without the need for their production infrastructure. A significant driver of market growth is the push for decarbonization to combat climate change, aligning with global climate agreements like the Paris Agreement. Government initiatives, such as the Green Deal and Hydrogen Strategy, are propelling the adoption of low-emission hydrogen production methods to meet international climate targets. These initiatives are fueling demand for clean hydrogen, boosting its adoption across industries as a sustainable fuel source.

Substantial investments are being made in developing advanced electrolysis technologies, including proton exchange membranes and solid oxide electrolyzers, which offer higher efficiency and lower costs. Innovations like modular electrolyzer strategies and large-scale, gigawatt-capacity projects are accelerating deployment and scaling, making hydrogen generation more feasible and cost-effective on a commercial scale. In terms of application, the petroleum refining sector is expected to see significant growth, with the electrolysis hydrogen generation segment likely to exceed USD 1.5 billion by 2032. Increasing environmental regulations on greenhouse gas emissions are pressing refineries to adopt zero-emission processes, particularly when powered by renewable energy sources, to produce green hydrogen. This aligns with refinery decarbonization strategies focused on reducing the carbon footprint of hydrogen supply and overall emissions, positioning green hydrogen as a viable solution for sustainable fuel production.

The Asia Pacific region is expected to dominate, with its market anticipated to surpass USD 2 billion by 2032. Government-backed hydrogen strategies, such as targets for electrolyzer capacity and broader hydrogen utilization, are driving green hydrogen adoption throughout the region. The expanding industrial sector and a strong emphasis on clean energy in countries like Japan and South Korea are further bolstering the market. Key industries, including steel production, are increasingly exploring clean fuel-based processes, which is enhancing the demand for electrolysis-based hydrogen and fostering industry growth.

## Contents

### Report Content

#### **CHAPTER 1 METHODOLOGY & SCOPE**

- 1.1 Research design
- 1.2 Base estimates & calculations
- 1.3 Forecast model
- 1.4 Primary research & validation
  - 1.4.1 Primary sources
  - 1.4.2 Data mining sources
- 1.5 Market definitions

#### **CHAPTER 2 EXECUTIVE SUMMARY**

- 2.1 Industry 360° synopsis, 2021 – 2032

#### **CHAPTER 3 INDUSTRY INSIGHTS**

- 3.1 Industry ecosystem
- 3.2 Regulatory landscape
- 3.3 Industry impact forces
  - 3.3.1 Growth drivers
  - 3.3.2 Industry pitfalls & challenges
- 3.4 Growth potential analysis
- 3.5 Porter's analysis
  - 3.5.1 Bargaining power of suppliers
  - 3.5.2 Bargaining power of buyers
  - 3.5.3 Threat of new entrants
  - 3.5.4 Threat of substitutes
- 3.6 PESTEL analysis

#### **CHAPTER 4 COMPETITIVE LANDSCAPE, 2023**

- 4.1 Introduction
- 4.2 Strategic dashboard
- 4.3 Innovation & technology landscape

## **CHAPTER 5 MARKET SIZE AND FORECAST, BY APPLICATION, 2021 – 2032 (USD BILLION)**

- 5.1 Key trends
- 5.2 Petroleum refinery
- 5.3 Chemical
- 5.4 Metal
- 5.5 Others

## **CHAPTER 6 MARKET SIZE AND FORECAST, BY REGION, 2021 – 2032 (USD BILLION)**

- 6.1 Key trends
- 6.2 North America
  - 6.2.1 U.S.
  - 6.2.2 Canada
  - 6.2.3 Mexico
- 6.3 Europe
  - 6.3.1 Germany
  - 6.3.2 Italy
  - 6.3.3 Netherlands
  - 6.3.4 Russia
- 6.4 Asia Pacific
  - 6.4.1 China
  - 6.4.2 India
  - 6.4.3 Japan
- 6.5 Middle East & Africa
  - 6.5.1 Saudi Arabia
  - 6.5.2 Iran
  - 6.5.3 UAE
  - 6.5.4 South Africa
- 6.6 Latin America
  - 6.6.1 Brazil
  - 6.6.2 Argentina
  - 6.6.3 Chile

## **CHAPTER 7 COMPANY PROFILES**

- 7.1 Air Liquide

- 7.2 Cummins
- 7.3 H2B2
- 7.4 ITM Power
- 7.5 McPhy Energy
- 7.6 Nel Hydrogen
- 7.7 Plug Power
- 7.8 Siemens Energy
- 7.9 Sunfire
- 7.10 Thyssenkrupp
- 7.11 Verdag

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