

# **Blue Hydrogen Market Forecasts to 2034 – Global Analysis By Production Technology (Steam Methane Reforming (SMR), Auto Thermal Reforming (ATR), Gas Partial Oxidation, Methane Pyrolysis with Carbon Capture, and Hybrid Reforming Technologies), Carbon Capture Technology, Distribution Mode, Application, End User and By Geography**

<https://marketpublishers.com/r/BB9112D9E5F7EN.html>

Date: August 2026

Pages: 0

Price: US\$ 4,150.00 (Single User License)

ID: BB9112D9E5F7EN

## **Abstracts**

According to Statistics MRC, the Global Blue Hydrogen Market is accounted for \$12.5 billion in 2026 and is expected to reach \$24.0 billion by 2034 growing at a CAGR of 11.4% during the forecast period. Blue hydrogen refers to hydrogen produced from natural gas through steam methane reforming or auto thermal reforming processes, where the resulting carbon dioxide emissions are captured and permanently stored or utilized, achieving significantly lower lifecycle emissions than conventional grey hydrogen. The production process involves reacting methane with steam to produce hydrogen and carbon monoxide, followed by the water-gas shift reaction to generate additional hydrogen and CO<sub>2</sub>. Carbon capture technologies, including post-combustion, pre-combustion, and oxy-fuel combustion systems, separate CO<sub>2</sub> from the process stream for compression and geological storage. Blue hydrogen serves as a transitional low-carbon fuel and feedstock for industrial applications while green hydrogen production scales to commercial viability.

Market Dynamics:

Driver:

Natural gas infrastructure leverage

The extensive global natural gas infrastructure provides a significant advantage for blue hydrogen deployment by enabling rapid scale-up without requiring entirely new supply chains. Existing natural gas pipelines can be adapted for hydrogen blending or pure hydrogen transport with modifications. Proven steam methane reforming technology offers reliable production at scale. Major oil and gas companies possess the subsurface expertise needed for carbon storage development. This infrastructure leverage allows blue hydrogen to achieve commercial volumes faster than green hydrogen alternatives.

#### Restraint:

##### Methane leakage concerns

Concerns about methane leakage throughout the natural gas supply chain undermine the climate credentials of blue hydrogen and create reputational risks for producers and buyers. Methane is a potent greenhouse gas with a global warming potential significantly higher than carbon dioxide over short timeframes. Studies suggest that leakage rates above certain thresholds can negate the climate benefits of carbon capture. Measurement and mitigation of fugitive emissions add operational complexity and cost. These concerns influence policy treatment and corporate procurement decisions.

#### Opportunity:

##### Carbon capture integration

Advances in carbon capture technology integration with hydrogen production present opportunities to improve capture rates and reduce costs for blue hydrogen facilities. Next-generation solvents and solid sorbents achieve higher CO<sub>2</sub> capture efficiency with lower energy penalties. Modular capture systems enable retrofitting of existing hydrogen plants. Integration with enhanced oil recovery can generate revenue from captured CO<sub>2</sub>. These technological improvements enhance the competitiveness of blue hydrogen as a near-term low-carbon solution.

#### Threat:

##### Green hydrogen cost decline

The rapid projected decline in green hydrogen production costs through electrolyzer

scale-up and renewable energy cost reductions threatens the long-term market position of blue hydrogen. Industry analysts forecast green hydrogen cost parity with blue hydrogen by the early 2030s in regions with favorable renewable resources. Corporate buyers increasingly prefer green hydrogen for its zero-emission credentials. Policy frameworks may shift support from blue to green hydrogen as the latter achieves commercial scale. This transition risk constrains long-term investment planning for blue hydrogen projects.

#### Covid-19 Impact:

The COVID-19 pandemic disrupted natural gas supply chains and delayed blue hydrogen project development timelines. However, the crisis reinforced the importance of energy security and diversified supply chains. Post-pandemic, government hydrogen strategies included blue hydrogen as a near-term decarbonization pathway. Major oil and gas companies accelerated hydrogen diversification plans. Sustained industrial demand for ammonia and refining feedstock supports production continuity.

The steam methane reforming (SMR) segment is expected to be the largest during the forecast period

The steam methane reforming (SMR) segment is expected to account for the largest market share during the forecast period, due to its status as the most mature and widely deployed hydrogen production technology globally. SMR facilities account for the vast majority of existing hydrogen production capacity and offer proven operational reliability. The technology is well-understood by engineering contractors and operators. Carbon capture retrofit options are commercially available for SMR plants. The extensive installed base creates opportunities for blue hydrogen conversion through capture system additions.

The hybrid carbon capture segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the hybrid carbon capture segment is predicted to witness the highest growth rate, driven by the development of integrated capture systems that combine multiple technologies to achieve higher overall capture rates and lower energy consumption. Hybrid approaches optimize capture across different process streams and operating conditions. These systems can achieve capture rates exceeding 95% compared to 90% for single-technology approaches. Research programs are advancing novel hybrid configurations. Industrial partnerships are piloting these systems at

commercial hydrogen production facilities.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to abundant low-cost natural gas resources and favorable geology for carbon storage. The United States Gulf Coast offers extensive natural gas infrastructure and depleted oil fields suitable for CO<sub>2</sub> injection. Canada's oil sands industry is a major hydrogen consumer and carbon capture developer. Government tax credits support blue hydrogen production and carbon capture investment. Major oil and gas companies headquartered in the region are investing in hydrogen diversification.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by government hydrogen strategies in Japan, South Korea, and China that include blue hydrogen as a near-term supply source. Japan is developing international blue hydrogen supply chains from Australia and the Middle East. South Korea is investing in domestic production and import infrastructure. China's coal-rich regions are exploring coal gasification with carbon capture for hydrogen production. Regional industrial demand for ammonia and chemicals creates substantial offtake.

Key players in the market

Some of the key players in Blue Hydrogen Market include Shell plc, BP plc, Exxon Mobil Corporation, Equinor ASA, Air Products and Chemicals, Inc., Linde plc, Air Liquide S.A., Technip Energies N.V., Baker Hughes Company, SLB, Aker Carbon Capture ASA, Johnson Matthey Plc, Topsoe A/S, Mitsubishi Heavy Industries, Ltd., Siemens Energy AG, Worley Limited and Chevron Corporation.

Key Developments:

In June 2026, Shell plc commissioned a large-scale blue hydrogen production facility in the Netherlands, integrating carbon capture with steam methane reforming to supply industrial customers in Northwest Europe.

In May 2026, Air Products and Chemicals, Inc. expanded its blue hydrogen production capacity in the United States Gulf Coast, capturing over one million tonnes of CO<sub>2</sub> annually for enhanced oil recovery and permanent storage.

In April 2026, Equinor ASA achieved an operational milestone at its Norwegian blue hydrogen facility, demonstrating 98% carbon capture efficiency from natural gas reforming operations.

#### Production Technologies Covered:

Steam Methane Reforming (SMR)

Auto Thermal Reforming (ATR)

Gas Partial Oxidation

Methane Pyrolysis with Carbon Capture

Hybrid Reforming Technologies

#### Carbon Capture Technologies Covered:

Post-Combustion Capture

Pre-Combustion Capture

Oxy-Fuel Combustion

Chemical Looping

Hybrid Carbon Capture

#### Distribution Modes Covered:

Pipeline

Liquid Hydrogen Transport

Compressed Gas Transport

Ammonia Transport

Liquid Organic Hydrogen Carriers (LOHC)

Applications Covered:

Ammonia Production

Oil Refining

Chemical Manufacturing

Power Generation

Industrial Heating

Transportation

End Users Covered:

Oil and Gas

Chemical Industry

Power Utilities

Steel Industry

Transportation

Industrial Manufacturing

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

#### Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

#### Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

#### Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

## Contents

### **1 EXECUTIVE SUMMARY**

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

### **2 RESEARCH FRAMEWORK**

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
  - 2.4.1 Data Collection (Primary and Secondary)
  - 2.4.2 Data Modeling and Estimation Techniques
  - 2.4.3 Data Validation and Triangulation
  - 2.4.4 Analytical and Forecasting Approach

### **3 MARKET DYNAMICS AND TREND ANALYSIS**

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

### **4 COMPETITIVE AND STRATEGIC ASSESSMENT**

- 4.1 Porter's Five Forces Analysis
  - 4.1.1 Supplier Bargaining Power
  - 4.1.2 Buyer Bargaining Power
  - 4.1.3 Threat of Substitutes
  - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

## **5 GLOBAL BLUE HYDROGEN MARKET, BY PRODUCTION TECHNOLOGY**

- 5.1 Steam Methane Reforming (SMR)
- 5.2 Auto Thermal Reforming (ATR)
- 5.3 Gas Partial Oxidation
- 5.4 Methane Pyrolysis with Carbon Capture
- 5.5 Hybrid Reforming Technologies

## **6 GLOBAL BLUE HYDROGEN MARKET, BY CARBON CAPTURE TECHNOLOGY**

- 6.1 Post-Combustion Capture
- 6.2 Pre-Combustion Capture
- 6.3 Oxy-Fuel Combustion
- 6.4 Chemical Looping
- 6.5 Hybrid Carbon Capture

## **7 GLOBAL BLUE HYDROGEN MARKET, BY DISTRIBUTION MODE**

- 7.1 Pipeline
- 7.2 Liquid Hydrogen Transport
- 7.3 Compressed Gas Transport
- 7.4 Ammonia Transport
- 7.5 Liquid Organic Hydrogen Carriers (LOHC)

## **8 GLOBAL BLUE HYDROGEN MARKET, BY APPLICATION**

- 8.1 Ammonia Production
- 8.2 Oil Refining
- 8.3 Chemical Manufacturing
- 8.4 Power Generation
- 8.5 Industrial Heating
- 8.6 Transportation

## **9 GLOBAL BLUE HYDROGEN MARKET, BY END USER**

- 9.1 Oil and Gas
- 9.2 Chemical Industry
- 9.3 Power Utilities
- 9.4 Steel Industry
- 9.5 Transportation
- 9.6 Industrial Manufacturing

## **10 GLOBAL BLUE HYDROGEN MARKET, BY GEOGRAPHY**

- 10.1 North America
  - 10.1.1 United States
  - 10.1.2 Canada
  - 10.1.3 Mexico
- 10.2 Europe
  - 10.2.1 United Kingdom
  - 10.2.2 Germany
  - 10.2.3 France
  - 10.2.4 Italy
  - 10.2.5 Spain
  - 10.2.6 Netherlands
  - 10.2.7 Belgium
  - 10.2.8 Sweden
  - 10.2.9 Switzerland
  - 10.2.10 Poland
  - 10.2.11 Rest of Europe
- 10.3 Asia Pacific
  - 10.3.1 China
  - 10.3.2 Japan
  - 10.3.3 India
  - 10.3.4 South Korea
  - 10.3.5 Australia
  - 10.3.6 Indonesia
  - 10.3.7 Thailand
  - 10.3.8 Malaysia
  - 10.3.9 Singapore
  - 10.3.10 Vietnam
  - 10.3.11 Rest of Asia Pacific
- 10.4 South America
  - 10.4.1 Brazil

- 10.4.2 Argentina
- 10.4.3 Colombia
- 10.4.4 Chile
- 10.4.5 Peru
- 10.4.6 Rest of South America
- 10.5 Rest of the World (RoW)
  - 10.5.1 Middle East
    - 10.5.1.1 Saudi Arabia
    - 10.5.1.2 United Arab Emirates
    - 10.5.1.3 Qatar
    - 10.5.1.4 Israel
    - 10.5.1.5 Rest of Middle East
  - 10.5.2 Africa
    - 10.5.2.1 South Africa
    - 10.5.2.2 Egypt
    - 10.5.2.3 Morocco
    - 10.5.2.4 Rest of Africa

## **11 STRATEGIC MARKET INTELLIGENCE**

- 11.1 Industry Value Network and Supply Chain Assessment
- 11.2 White-Space and Opportunity Mapping
- 11.3 Product Evolution and Market Life Cycle Analysis
- 11.4 Channel, Distributor, and Go-to-Market Assessment

## **12 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES**

- 12.1 Mergers and Acquisitions
- 12.2 Partnerships, Alliances, and Joint Ventures
- 12.3 New Product Launches and Certifications
- 12.4 Capacity Expansion and Investments
- 12.5 Other Strategic Initiatives

## **13 COMPANY PROFILES**

- 13.1 Shell plc
- 13.2 BP plc
- 13.3 Exxon Mobil Corporation
- 13.4 Equinor ASA

- 13.5 Air Products and Chemicals, Inc.
- 13.6 Linde plc
- 13.7 Air Liquide S.A.
- 13.8 Technip Energies N.V.
- 13.9 Baker Hughes Company
- 13.10 SLB
- 13.11 Aker Carbon Capture ASA
- 13.12 Johnson Matthey Plc
- 13.13 Topsoe A/S
- 13.14 Mitsubishi Heavy Industries, Ltd.
- 13.15 Siemens Energy AG
- 13.16 Worley Limited
- 13.17 Chevron Corporation

## List Of Tables

### LIST OF TABLES

Table 1 Global Blue Hydrogen Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global Blue Hydrogen Market Outlook, By Production Technology (2023-2034) (\$MN)

Table 3 Global Blue Hydrogen Market Outlook, By Steam Methane Reforming (SMR) (2023-2034) (\$MN)

Table 4 Global Blue Hydrogen Market Outlook, By Auto Thermal Reforming (ATR) (2023-2034) (\$MN)

Table 5 Global Blue Hydrogen Market Outlook, By Gas Partial Oxidation (2023-2034) (\$MN)

Table 6 Global Blue Hydrogen Market Outlook, By Methane Pyrolysis with Carbon Capture (2023-2034) (\$MN)

Table 7 Global Blue Hydrogen Market Outlook, By Hybrid Reforming Technologies (2023-2034) (\$MN)

Table 8 Global Blue Hydrogen Market Outlook, By Carbon Capture Technology (2023-2034) (\$MN)

Table 9 Global Blue Hydrogen Market Outlook, By Post-Combustion Capture (2023-2034) (\$MN)

Table 10 Global Blue Hydrogen Market Outlook, By Pre-Combustion Capture (2023-2034) (\$MN)

Table 11 Global Blue Hydrogen Market Outlook, By Oxy-Fuel Combustion (2023-2034) (\$MN)

Table 12 Global Blue Hydrogen Market Outlook, By Chemical Looping (2023-2034) (\$MN)

Table 13 Global Blue Hydrogen Market Outlook, By Hybrid Carbon Capture (2023-2034) (\$MN)

Table 14 Global Blue Hydrogen Market Outlook, By Distribution Mode (2023-2034) (\$MN)

Table 15 Global Blue Hydrogen Market Outlook, By Pipeline (2023-2034) (\$MN)

Table 16 Global Blue Hydrogen Market Outlook, By Liquid Hydrogen Transport (2023-2034) (\$MN)

Table 17 Global Blue Hydrogen Market Outlook, By Compressed Gas Transport (2023-2034) (\$MN)

Table 18 Global Blue Hydrogen Market Outlook, By Ammonia Transport (2023-2034) (\$MN)

Table 19 Global Blue Hydrogen Market Outlook, By Liquid Organic Hydrogen Carriers

(LOHC) (2023-2034) (\$MN)

Table 20 Global Blue Hydrogen Market Outlook, By Application (2023-2034) (\$MN)

Table 21 Global Blue Hydrogen Market Outlook, By Ammonia Production (2023-2034) (\$MN)

Table 22 Global Blue Hydrogen Market Outlook, By Oil Refining (2023-2034) (\$MN)

Table 23 Global Blue Hydrogen Market Outlook, By Chemical Manufacturing (2023-2034) (\$MN)

Table 24 Global Blue Hydrogen Market Outlook, By Power Generation (2023-2034) (\$MN)

Table 25 Global Blue Hydrogen Market Outlook, By Industrial Heating (2023-2034) (\$MN)

Table 26 Global Blue Hydrogen Market Outlook, By Transportation (2023-2034) (\$MN)

Table 27 Global Blue Hydrogen Market Outlook, By End User (2023-2034) (\$MN)

Table 28 Global Blue Hydrogen Market Outlook, By Oil and Gas (2023-2034) (\$MN)

Table 29 Global Blue Hydrogen Market Outlook, By Chemical Industry (2023-2034) (\$MN)

Table 30 Global Blue Hydrogen Market Outlook, By Power Utilities (2023-2034) (\$MN)

Table 31 Global Blue Hydrogen Market Outlook, By Steel Industry (2023-2034) (\$MN)

Table 32 Global Blue Hydrogen Market Outlook, By Transportation (2023-2034) (\$MN)

Table 33 Global Blue Hydrogen Market Outlook, By Industrial Manufacturing (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

## I would like to order

Product name: Blue Hydrogen Market Forecasts to 2034 – Global Analysis By Production Technology (Steam Methane Reforming (SMR), Auto Thermal Reforming (ATR), Gas Partial Oxidation, Methane Pyrolysis with Carbon Capture, and Hybrid Reforming Technologies), Carbon Capture Technology, Distribution Mode, Application, End User and By Geography

Product link: <https://marketpublishers.com/r/BB9112D9E5F7EN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/BB9112D9E5F7EN.html>