

Hydrogen Pipelines Market Forecasts to 2034 – Global Analysis By Pipeline Type (Onshore Pipelines, and Offshore Pipelines), Infrastructure (New Hydrogen Pipelines, and Repurposed Natural Gas Pipelines), Hydrogen Type, Pressure Level, Material, Network Type, Application, End User, and By Geography

<https://marketpublishers.com/r/H279507FF026EN.html>

Date: April 2026

Pages: 200

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

ID: H279507FF026EN

Abstracts

According to Statistics MRC, the Global Hydrogen Pipelines Market is accounted for \$1.9 billion in 2026 and is expected to reach \$12.0 billion by 2034 growing at a CAGR of 25.9% during the forecast period. Hydrogen pipelines transport gaseous hydrogen from production facilities to industrial end-users, fueling stations, and storage sites. This dedicated infrastructure is critical for scaling the hydrogen economy, enabling cost-effective bulk transport over long distances. The market encompasses pipeline networks designed for various hydrogen purities and pressure levels, supporting decarbonization efforts across heavy industry, power generation, and mobility sectors.

Market Dynamics:

Driver:

Government mandates and net-zero emission targets

Aggressive decarbonization commitments worldwide are accelerating investment in hydrogen transport infrastructure as nations seek alternatives to fossil fuels. Policy frameworks in the European Union, United States, and Asia provide funding and regulatory support for hydrogen pipeline networks. These initiatives aim to establish hydrogen as a cornerstone of clean energy systems, creating long-term demand

visibility for pipeline developers. Alignment between public funding and private capital deployment is driving project pipelines forward at unprecedented scale.

Restraint:

Material embrittlement and high capital costs

Hydrogen exposure causes embrittlement in conventional steel pipelines, requiring costly specialty materials or coatings to ensure safe operation. Retrofitting existing natural gas pipelines demands extensive modifications, while new dedicated hydrogen pipelines face construction costs significantly higher than natural gas equivalents. These technical challenges and capital requirements deter infrastructure investment, particularly in regions without clear demand certainty. The financial risk associated with long payback periods further constrains market growth.

Opportunity:

Repurposing existing natural gas infrastructure

Extensive natural gas pipeline networks present a substantial opportunity for accelerated hydrogen market development through repurposing. Converting existing assets reduces capital requirements, construction timelines, and environmental impacts compared to new-build projects. Successful pilot conversions in Europe and North America demonstrate technical feasibility for blending and dedicated hydrogen transport. This approach enables incremental hydrogen infrastructure build-out while leveraging established rights-of-way and operational expertise.

Threat:

Technological uncertainty and competing transport modes

Emerging hydrogen carriers such as ammonia, liquid organic hydrogen carriers, and liquid hydrogen may reduce pipeline relevance for long-distance transport. Rapidly evolving production technologies could shift hydrogen supply locations, stranding pipeline assets. Competing transport modes including trucking and rail offer greater flexibility for early-stage markets. This uncertainty complicates long-term infrastructure planning and may delay investment decisions critical to pipeline network expansion.

Covid-19 Impact:

The pandemic initially disrupted hydrogen pipeline projects through supply chain delays and labor constraints, postponing planned infrastructure investments. However, subsequent stimulus packages in major economies allocated unprecedented funding for clean energy infrastructure, including hydrogen transport. These recovery programs accelerated project timelines and expanded funding availability. The crisis underscored energy security concerns, further motivating governments to develop domestic hydrogen supply chains with dedicated pipeline infrastructure.

The Gray Hydrogen segment is expected to be the largest during the forecast period

Gray Hydrogen accounts for the dominant share of the market during the forecast period and represents the largest pipeline transport volume. Existing gray hydrogen networks primarily serve industrial clusters in refining, ammonia production, and methanol manufacturing. These established infrastructure corridors provide operational experience and economic justification for pipeline expansion. As carbon pricing mechanisms evolve, gray hydrogen volumes may transition to blue hydrogen, maintaining pipeline utilization.

The High Pressure segment is expected to have the highest CAGR during the forecast period

The High Pressure segment is projected to register the fastest growth over the forecast period. High-pressure pipelines enable greater transport efficiency and support hydrogen fueling station networks for fuel cell vehicles. Operating pressures above 100 bar allow higher energy density delivery, reducing compression costs at end-use points. Growing fuel cell vehicle adoption and hydrogen blending in natural gas grids drive demand for high-pressure infrastructure. Technological improvements in materials and welding techniques are expanding feasible operating pressures, supporting this segment's accelerated growth trajectory.

Region with largest share:

During the forecast period, the Europe region is expected to hold the largest market share, driven by ambitious EU hydrogen strategies and cross-border pipeline initiatives connecting industrial clusters. The European Hydrogen Backbone project envisions over 40,000 kilometers of dedicated hydrogen pipelines by 2040, supported by substantial public funding and regulatory harmonization. Mature industrial gas infrastructure and strong policy commitments position Europe as the leading regional

market for hydrogen pipeline networks.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, led by aggressive hydrogen expansion in China, Japan, and South Korea. These nations have established national hydrogen roadmaps with significant pipeline infrastructure targets to support industrial decarbonization and fuel cell deployment. Rapid industrialization, government-backed demonstration projects, and strategic investments in hydrogen hubs create favorable conditions for accelerated pipeline network growth throughout the region.

Key players in the market

Some of the key players in Hydrogen Pipelines Market include Air Liquide, Linde, Air Products and Chemicals, Enbridge, TC Energy, Kinder Morgan, Snam, Fluxys, GRTgaz, National Grid, Gaz-System, Open Grid Europe, Enag?s, Equinor, and Shell.

Key Developments:

In March 2026, Air Liquide announced an acceleration of its global hydrogen deployment strategy, shifting focus from hydrogen as a byproduct to a core growth pillar. The company is leveraging its existing industrial gas infrastructure and pipeline systems in major industrial zones to meet surging demand in refining, steelmaking, and heavy-duty transport.

In March 2026, Snam announced a plan to invest €200 million by 2030 specifically for the Italian Hydrogen Backbone. This investment is part of a larger €14 billion 2026–2030 strategic plan.

In June 2025, Air Products signed a 15-year agreement with TotalEnergies to supply 70,000 tons of green hydrogen annually to Northern European refineries starting in 2030, which will rely on the development of the European Hydrogen Backbone.

Pipeline Types Covered:

Onshore Pipelines

Offshore Pipelines

Infrastructures Covered:

New Hydrogen Pipelines

Repurposed Natural Gas Pipelines

Hydrogen Types Covered:

Green Hydrogen

Blue Hydrogen

Gray Hydrogen

Pressure Levels Covered:

Low Pressure

Medium Pressure

High Pressure

Materials Covered:

Steel

Plastic & Composite

Other Materials

Network Types Covered:

Dedicated Hydrogen Pipelines

Blended Hydrogen Pipelines

Applications Covered:

Industrial

Power Generation

Transportation

Residential & Commercial

End Users Covered:

Oil & Gas

Chemicals

Power Utilities

Transportation

Other End Users

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 HYDROGEN PIPELINES MARKET, BY PIPELINE TYPE

- 5.1 Onshore Pipelines
- 5.2 Offshore Pipelines

6 GLOBAL HYDROGEN PIPELINES MARKET, BY INFRASTRUCTURE

- 6.1 New Hydrogen Pipelines
- 6.2 Repurposed Natural Gas Pipelines

7 GLOBAL HYDROGEN PIPELINES MARKET, BY HYDROGEN TYPE

- 7.1 Green Hydrogen
- 7.2 Blue Hydrogen
- 7.3 Gray Hydrogen

8 GLOBAL HYDROGEN PIPELINES MARKET, BY PRESSURE LEVEL

- 8.1 Low Pressure
- 8.2 Medium Pressure
- 8.3 High Pressure

9 GLOBAL HYDROGEN PIPELINES MARKET, BY MATERIAL

- 9.1 Steel
- 9.2 Plastic & Composite
- 9.3 Other Materials

10 GLOBAL HYDROGEN PIPELINES MARKET, BY NETWORK TYPE

- 10.1 Dedicated Hydrogen Pipelines
- 10.2 Blended Hydrogen Pipelines

11 GLOBAL HYDROGEN PIPELINES MARKET, BY APPLICATION

- 11.1 Industrial
- 11.2 Power Generation
- 11.3 Transportation
- 11.4 Residential & Commercial

12 GLOBAL HYDROGEN PIPELINES MARKET, BY END USER

- 12.1 Oil & Gas
- 12.2 Chemicals
- 12.3 Power Utilities
- 12.4 Transportation
- 12.5 Other End Users

13 GLOBAL HYDROGEN PIPELINES MARKET, BY GEOGRAPHY

- 13.1 North America
 - 13.1.1 United States
 - 13.1.2 Canada
 - 13.1.3 Mexico
- 13.2 Europe
 - 13.2.1 United Kingdom
 - 13.2.2 Germany
 - 13.2.3 France
 - 13.2.4 Italy
 - 13.2.5 Spain
 - 13.2.6 Netherlands
 - 13.2.7 Belgium
 - 13.2.8 Sweden
 - 13.2.9 Switzerland
 - 13.2.10 Poland
 - 13.2.11 Rest of Europe
- 13.3 Asia Pacific
 - 13.3.1 China
 - 13.3.2 Japan
 - 13.3.3 India
 - 13.3.4 South Korea
 - 13.3.5 Australia
 - 13.3.6 Indonesia
 - 13.3.7 Thailand

- 13.3.8 Malaysia
- 13.3.9 Singapore
- 13.3.10 Vietnam
- 13.3.11 Rest of Asia Pacific
- 13.4 South America
 - 13.4.1 Brazil
 - 13.4.2 Argentina
 - 13.4.3 Colombia
 - 13.4.4 Chile
 - 13.4.5 Peru
 - 13.4.6 Rest of South America
- 13.5 Rest of the World (RoW)
 - 13.5.1 Middle East
 - 13.5.1.1 Saudi Arabia
 - 13.5.1.2 United Arab Emirates
 - 13.5.1.3 Qatar
 - 13.5.1.4 Israel
 - 13.5.1.5 Rest of Middle East
 - 13.5.2 Africa
 - 13.5.2.1 South Africa
 - 13.5.2.2 Egypt
 - 13.5.2.3 Morocco
 - 13.5.2.4 Rest of Africa

14 STRATEGIC MARKET INTELLIGENCE

- 14.1 Industry Value Network and Supply Chain Assessment
- 14.2 White-Space and Opportunity Mapping
- 14.3 Product Evolution and Market Life Cycle Analysis
- 14.4 Channel, Distributor, and Go-to-Market Assessment

15 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 15.1 Mergers and Acquisitions
- 15.2 Partnerships, Alliances, and Joint Ventures
- 15.3 New Product Launches and Certifications
- 15.4 Capacity Expansion and Investments
- 15.5 Other Strategic Initiatives

16 COMPANY PROFILES

- 16.1 Air Liquide
- 16.2 Linde
- 16.3 Air Products and Chemicals
- 16.4 Enbridge
- 16.5 TC Energy
- 16.6 Kinder Morgan
- 16.7 Snam
- 16.8 Fluxys
- 16.9 GRTgaz
- 16.10 National Grid
- 16.11 Gaz-System
- 16.12 Open Grid Europe
- 16.13 Enag?s
- 16.14 Equinor
- 16.15 Shell

List Of Tables

LIST OF TABLES

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

Table 2 Global Hydrogen Pipelines Market Outlook, By Pipeline Type (2023–2034) (\$MN)

Table 3 Global Hydrogen Pipelines Market Outlook, By Onshore Pipelines (2023–2034) (\$MN)

Table 4 Global Hydrogen Pipelines Market Outlook, By Offshore Pipelines (2023–2034) (\$MN)

Table 5 Global Hydrogen Pipelines Market Outlook, By Infrastructure (2023–2034) (\$MN)

Table 6 Global Hydrogen Pipelines Market Outlook, By New Hydrogen Pipelines (2023–2034) (\$MN)

Table 7 Global Hydrogen Pipelines Market Outlook, By Repurposed Natural Gas Pipelines (2023–2034) (\$MN)

Table 8 Global Hydrogen Pipelines Market Outlook, By Hydrogen Type (2023–2034) (\$MN)

Table 9 Global Hydrogen Pipelines Market Outlook, By Green Hydrogen (2023–2034) (\$MN)

Table 10 Global Hydrogen Pipelines Market Outlook, By Blue Hydrogen (2023–2034) (\$MN)

Table 11 Global Hydrogen Pipelines Market Outlook, By Gray Hydrogen (2023–2034) (\$MN)

Table 12 Global Hydrogen Pipelines Market Outlook, By Pressure Level (2023–2034) (\$MN)

Table 13 Global Hydrogen Pipelines Market Outlook, By Low Pressure (2023–2034) (\$MN)

Table 14 Global Hydrogen Pipelines Market Outlook, By Medium Pressure (2023–2034) (\$MN)

Table 15 Global Hydrogen Pipelines Market Outlook, By High Pressure (2023–2034) (\$MN)

Table 16 Global Hydrogen Pipelines Market Outlook, By Material (2023–2034) (\$MN)

Table 17 Global Hydrogen Pipelines Market Outlook, By Steel (2023–2034) (\$MN)

Table 18 Global Hydrogen Pipelines Market Outlook, By Plastic & Composite (2023–2034) (\$MN)

Table 19 Global Hydrogen Pipelines Market Outlook, By Other Materials (2023–2034) (\$MN)

Table 20 Global Hydrogen Pipelines Market Outlook, By Network Type (2023–2034) (\$MN)

Table 21 Global Hydrogen Pipelines Market Outlook, By Dedicated Hydrogen Pipelines (2023–2034) (\$MN)

Table 22 Global Hydrogen Pipelines Market Outlook, By Blended Hydrogen Pipelines (2023–2034) (\$MN)

Table 23 Global Hydrogen Pipelines Market Outlook, By Application (2023–2034) (\$MN)

Table 24 Global Hydrogen Pipelines Market Outlook, By Industrial (2023–2034) (\$MN)

Table 25 Global Hydrogen Pipelines Market Outlook, By Power Generation (2023–2034) (\$MN)

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

Table 27 Global Hydrogen Pipelines Market Outlook, By Residential & Commercial (2023–2034) (\$MN)

Table 28 Global Hydrogen Pipelines Market Outlook, By End User (2023–2034) (\$MN)

Table 29 Global Hydrogen Pipelines Market Outlook, By Oil & Gas (2023–2034) (\$MN)

Table 30 Global Hydrogen Pipelines Market Outlook, By Chemicals (2023–2034) (\$MN)

Table 31 Global Hydrogen Pipelines Market Outlook, By Power Utilities (2023–2034) (\$MN)

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

Table 33 Global Hydrogen Pipelines Market Outlook, By Other End Users (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: Hydrogen Pipelines Market Forecasts to 2034 – Global Analysis By Pipeline Type (Onshore Pipelines, and Offshore Pipelines), Infrastructure (New Hydrogen Pipelines, and Repurposed Natural Gas Pipelines), Hydrogen Type, Pressure Level, Material, Network Type, Application, End User, and By Geography

Product link: <https://marketpublishers.com/r/H279507FF026EN.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

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/H279507FF026EN.html>