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Process Piping Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Product (Steam Process Piping, Wastewater Piping, Crude Oil Piping, Acid Piping, Refrigerant Piping, Fuel Transfer Piping), By End Use (Oil Refineries, Food And Beverage Manufacturing, Paper Mills, Power Plants, Chemical Processing), By Region & Competition, 2021-2031F

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Abstracts

The Global Process Piping Market is projected to expand significantly, rising from a valuation of USD 6.66 Billion in 2025 to USD 10.52 Billion by 2031, reflecting a CAGR of 7.92%. Process piping is defined by the specific components and pipework utilized to transport gases, fluids, and slurries within industrial settings, distinguishing it from general plumbing or transmission pipelines. This growth is largely fueled by increasing global energy requirements and the ongoing development of chemical processing facilities, which demand durable conveyance systems. Consequently, there is a steady requirement for materials that can endure corrosive conditions and high pressures. As noted by the American Chemistry Council, capital expenditure on chemical industry projects increased by 4.1% to $34 billion in 2024, indicating continued financial commitment to sectors dependent on these critical systems.

However, market growth faces obstacles, particularly the volatility of raw material costs. Fluctuating prices for alloys and steel make project budgeting difficult and frequently postpone final investment decisions for large-scale industrial plants. Furthermore, the sector is struggling with a chronic lack of skilled welders and pipefitters. This labor shortage limits the ability of contractors to complete intricate installations on time and

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drives up total project costs, thereby constraining the overall capacity for market expansion.

Market Driver

Increasing capital allocation toward oil and gas exploration and refining is transforming the global process piping landscape. As energy corporations explore deeper waters and more difficult geological environments, there is a heightened requirement for corrosion-resistant, high-strength piping systems designed to handle extreme pressures. This momentum is reinforced by the necessity to modernize aging downstream infrastructure to comply with cleaner fuel regulations, creating demand for advanced alloy piping. Highlighting this scale of investment, Saudi Aramco's 'Full-Year 2024 Results' report from March 2025 indicated that capital expenditure hit $53.3 billion in 2024, demonstrating massive funding for hydrocarbon capacity expansion. This trend reflects broader market dynamics; the International Energy Agency projects that global energy investment will reach a record $3.3 trillion in 2025, ensuring continued need for specialized conveyance networks throughout the energy industry.

Additionally, rising capital expenditure in water and wastewater treatment infrastructure acts as a primary catalyst for market growth. Due to intensifying water scarcity and rapid urbanization, municipalities and industrial players are compelled to update water management systems, requiring durable piping networks for filtration, desalination, and effluent treatment. These applications demand materials that guarantee long-term resistance to chemical degradation and zero leakage to meet regulatory standards. According to the 'Currents of Capital 2025' report by White & Case LLP in May 2025, 72% of organizations anticipate increasing their investments in 2025 relative to the previous year, marking a clear trend toward global water system upgrades. This influx of funding directly results in greater procurement of process piping for both the construction of new facilities and the rehabilitation of existing utility networks.

Market Challenge

A scarcity of qualified welders and pipefitters represents a major structural barrier to the advancement of the Global Process Piping Market. Because specialized piping networks must safely contain hazardous chemicals and high-pressure fluids, they require precise installation by certified professionals. However, a talent deficit caused by an aging workforce and insufficient new recruits has severely limited the operational capabilities of installation contractors. This shortage compels engineering firms to extend project schedules or decline bid invitations, effectively lowering the volume of

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work the market can accommodate and retarding the rollout of new chemical and energy infrastructure.

The magnitude of this workforce gap has profound implications for project feasibility and economics. In 2024, Associated Builders and Contractors estimated that the construction sector required approximately 501,000 additional workers beyond standard hiring levels to satisfy labor demands. This significant shortfall generates intense competition for skilled personnel, which escalates labor rates and inflates the total capital costs of projects. As a result, industrial investors are frequently forced to cancel or postpone planned facility expansions due to these unpredictable execution expenses, thereby suppressing the revenue potential and growth of the process piping industry.

Market Trends

A pivotal trend is the emphasis on sustainable piping solutions designed for green hydrogen, which demands materials capable of handling the specific metallurgical difficulties associated with clean energy transport. In contrast to conventional hydrocarbon infrastructure, hydrogen transport requires systems that are resistant to high-pressure leakage and embrittlement, prompting a transition toward non-metallic composites and specialized high-performance alloys. This shift is progressing from theory to actual implementation; the International Energy Agency's 'Global Hydrogen Review 2025', published in September 2025, noted that the capacity of low-carbon hydrogen projects achieving final investment decision rose by 20% over the prior year, indicating an accelerated construction of these specialized networks.

Simultaneously, the integration of digital twin technology and Artificial Intelligence (AI) is transforming the monitoring and maintenance of process piping systems. Operators are increasingly utilizing predictive models in which digital counterparts of physical assets simulate stress loads and flow dynamics in real-time, enabling the early detection of structural failures or corrosion before they interrupt operations. This digital progression is essential for maximizing safety and efficiency in complex industrial facilities. As highlighted in Rockwell Automation's '10th Annual State of Smart Manufacturing Report' from March 2025, 95% of manufacturers have either planned or already executed investments in machine learning and artificial intelligence, demonstrating a widespread industry commitment to modernizing infrastructure through digital adoption.

Key Market Players

Fluor Corporation

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TechnipFMC

Saipem

Chiyoda Corporation

JGC Holdings Corporation

KBR, Inc.

Worley

Jacobs Engineering Group Inc.

Wood

Hatch

Report Scope

In this report, the Global Process Piping Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Process Piping Market, By Product

Steam Process Piping

Wastewater Piping

Crude Oil Piping

Acid Piping

Refrigerant Piping

Fuel Transfer Piping

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- Japan
- Australia
- South Korea

South America

- Brazil
- Argentina
- Colombia

Middle East & Africa

- South Africa
- Saudi Arabia
- UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Process Piping Market.

Available Customizations:

Global Process Piping Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

- Detailed analysis and profiling of additional market players (up to five).

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