

North America Cryogenic Pumps Market Size and Forecast (2021 - 2031)

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Abstracts

The North America Cryogenic Pumps Market is projected to grow from US\$ 573.5 million in 2024 to US\$ 843.4 million by 2031, reflecting a compound annual growth rate (CAGR) of 5.7% from 2025 to 2031.

Executive Summary and Market Analysis

Recent investments in advanced packaging research by the US Department of Commerce are expected to significantly boost the cryogenic pump market in North America. In November 2024, the Biden-Harris Administration is negotiating a potential investment of up to US\$ 300 million in projects across Georgia, California, and Arizona, aimed at accelerating the development of critical technologies for the semiconductor industry. This federal funding will be supplemented by private sector investments, bringing the total anticipated investment to over US\$ 470 million. These advancements in semiconductor technology are vital, as they often necessitate cryogenic cooling systems, thereby increasing the demand for cryogenic pumps.

The oil and gas sector is witnessing a robust recovery, with annual upstream capital expenditures increasing by US\$ 63 billion year-on-year in 2023 and projected to rise by an additional US\$ 26 billion in 2024, exceeding US\$ 600 billion for the first time in a decade. This investment level is more than double the US\$ 300 billion low recorded in 2020 and significantly above the US\$ 425 billion average from 2015-2019. Notably, over a third of this spending is expected to originate from North America, reinforcing the region's position in the global energy market.

Strategic Insights

Market Segmentation Analysis

By Type: The market is divided into Centrifugal and Positive Displacement pumps, with Centrifugal pumps holding the largest market share in 2024.

By Design Type: The market is categorized into Submersible and Non-Submersible pumps, with Submersible pumps leading in market share in 2024.

By Cryogen: The market includes segments for Nitrogen, Argon, Oxygen, LNG, Hydrogen, Helium, and Others, with LNG dominating the market in 2024.

By Industry Vertical: The market is segmented into Electronics and Semiconductor, Healthcare and Pharmaceutical, Energy and Power, Metallurgy, Aerospace, Chemical, and Others, with Energy and Power holding the largest share in 2024.

Market Outlook

The demand for clean energy fuels and renewables is surging, driven by a focus on reducing carbon emissions and pollution. Liquefied natural gas (LNG) is emerging as a key clean energy source with various applications, including heating, electricity generation, and as a vehicle fuel. The adoption of LNG has risen significantly due to its efficiency and low carbon emissions, making it suitable for power generation and industrial uses. Cryogenic pumps are essential for LNG transportation, as they maintain natural gas at extremely low temperatures. These pumps are specially designed with unique materials, thermal insulation, and sealing to ensure safety and reliability under extreme conditions, leading to high adoption rates in the LNG sector.

According to Shell plc, global LNG trade reached 404 million tons in 2023, up from 397 million tons in 2022. The US Department of Energy reported that LNG demand rose from 100 billion cubic meters (bcm) in 2021 to approximately 175 bcm in 2022. This increasing demand for LNG and the expansion of global trade are driving the need for cryogenic pumps for efficient and secure transportation.

Country Insights

The North America Cryogenic Pumps Market is segmented by country into the United States, Canada, and Mexico, with the United States holding the largest market share in

2024. The significant growth in the US oil and gas sector is expected to propel the cryogenic pump market in the country. As the largest oil and gas producer globally, the US accounts for over US\$ 200 billion in fossil fuel supply spending, representing about 19% of the global total. The US is also leading a trend in new LNG export capacity, with approximately 40% expected to come online in the latter half of the decade. US LNG exports are projected to rise significantly, with gross exports anticipated to increase by 19% to 14.2 billion cubic feet per day (Bcf/d) in 2025, and by 15% to 16.4 Bcf/d in 2026.

Since 2016, US LNG exports have grown remarkably from 0.5 Bcf/d to 11.9 Bcf/d in 2024, making the US the world's largest LNG exporter in 2023 and 2024. This growth is driven by rising international demand for natural gas and the ongoing development of US LNG export facilities. The US Energy Information Administration expects this trend to continue, particularly with the startup of three new facilities: Plaquemines LNG (Phases 1 and 2), Corpus Christi LNG Stage 3, and Golden Pass LNG, which will collectively add a nominal export capacity of 5.3 Bcf/d and expand existing US LNG export capacity by approximately 50% once fully operational.

Company Profiles

Key players in the North America Cryogenic Pumps Market include Sulzer Ltd, Nikkiso Co Ltd, Fives SAS, Cryostar SAS, Ebara Elliott Energy, Trillium US Inc., SHI Cryogenics Group, CRYOGENIC MACHINERY CORP, Ruhrpumpen, Inc., Vanzetti Engineering S.p.A., PHPK Technologies, Technex Limited, Barber-Nichols, Inc., HSR AG, and GemmeCotti Srl. These companies are employing various strategies such as expansion, product innovation, and mergers and acquisitions to enhance their market presence and offer innovative products to consumers.

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