

Cryogenic Equipment Market by Equipment (Tanks, Valves, Vaporizers, Pumps), Cryogen (Nitrogen, Argon, Oxygen, LNG, Hydrogen), End-user Industry (Energy & Power, Chemical, Metallurgy, Transportation), System Type, Application & Region - Forecast to 2028

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Abstracts

The global cryogenic equipment market is estimated to grow from USD 11.9 Billion in 2023 to USD 16.6 Billion by 2028; it is expected to record a CAGR of 6.9% during the forecast period. The growth is attributed to the factors such as Increasing utilization of industrial gases in metallurgy, oil & gas, and energy & power industries. Growing popularity of liquefied natural gas as source of clean and efficient energy has driven the growth of cryogenic equipment market.

“Metallurgy: The largest segment of the cryogenic equipment market, by end-user industry “

Based on end-user industry, the cryogenic equipment market has been split into six types: metallurgy, energy & power, chemical, electronics, transportation, and other end-user industries. The metallurgy segment is expected to be the largest segment during the forecast period. In the metallurgy industry, processes such as metal forming, fabrication, welding, and combustion require industrial gases such as oxygen, nitrogen, argon, and hydrogen. The research and innovations associated with the development of high-strength and high-conductivity alloys for non-rare-earth induction motors used in EVs, metals with high rigidity and stiffness for use in industrial applications, new composites such as highly conducting carbon nanotubes to enhance the efficiency of electrical energy transport, and new corrosion protection systems for marine and

offshore applications are also expected to create a high demand for cryogenic equipment in the metallurgy industry.

“Storage system segment is expected to be the largest segment during the forecast period based on system type.”

By system type, the cryogenic equipment market has been segmented into storage system, handling system, supply system, and others. The storage system segment is expected to hold the largest market share during the forecast period. The large market share and the high growth rate of this segment can be attributed to the lucrative growth opportunities provided by the expanding aerospace industry and technological advancements in cryogenic energy storage (CES) systems.

“By application, the CASU segment is expected to be the largest segment during the forecast period.”

Based on the application, the cryogenic equipment market is segmented into cryogenic air system unit (CASU) and a non-cryogenic air system unit (non-CASU). The CASU segment is expected to be the largest segment of the cryogenic equipment market during the forecast period. Cryogenic ASUs are specialized equipment that use cryogenic refrigeration and distillation techniques to separate air from its individual components. The main products obtained using CASUs are typically oxygen and nitrogen, with small amounts of argon and other trace gases. The rising demand for CASUs can be attributed to higher requirements for high-purity oxygen, nitrogen, and argon in industries such as healthcare, manufacturing, and electronics.

“Europe is expected to be the second-largest region in the cryogenic equipment market.”

Europe is expected to be the second-largest region in the cryogenic equipment market during the forecast period. The region has been segmented, by country, into Russia, the UK, Germany, France, and Rest of Europe. The market in Rest of Europe is primarily studied for the Netherlands, Italy, Norway, Sweden, Denmark, and Finland. The European market is mainly influenced by the modernization of Germany's healthcare industry and France's commitment to achieving net-zero emissions. The increasing investments in LNG exports are likely to create requirement for cryogenic equipment in the transportation industry, especially the shipping sector, thereby providing a lucrative growth opportunity for cryogenic equipment providers in the region.

Breakdown of Primaries:

In-depth interviews have been conducted with various key industry participants, subject-matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information and assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 65%, Tier 2- 24%, and Tier 3- 11%

By Designation: C-Level- 30%, Director Level- 25%, and Others- 45%

By Region: North America- 27%, Europe- 20%, Asia Pacific- 33%, South America- 12%, The Middle East- 4% and Africa- 4%,

Note: Others include sales managers, engineers, and regional managers.

Note: The tiers of the companies are defined on the basis of their total revenues as of 2022. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: The cryogenic equipment market is dominated by a few major players that have a wide regional presence. The leading players in the cryogenic equipment market are Linde plc (Ireland); Air Liquide (France); Air Products and Chemicals, Inc. (US); Chart Industries (US); and Parker Hannifin Corp. (US). The major strategy adopted by the players includes contracts & agreements, partnerships, mergers and acquisitions, and investments & expansions.

Research Coverage:

The report defines, describes, and forecasts the global cryogenic equipment market by type, mechanism, application, well type, and region. It also offers a detailed qualitative and quantitative analysis of the market. The report comprehensively reviews the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates in terms of value, and future trends in the cryogenic equipment market.

Key Benefits of Buying the Report

Post-COVID-19 recovery and the global energy crisis have significantly boosted clean energy investments, outpacing fossil fuel investments (24% in 2023 vs.

15% in 2021, according to the IEA World Energy Investment 2023 report). The Ukraine conflict's impact on fossil fuel markets has further accelerated investments in cleaner energy sources such as LNG and hydrogen. Consequently, the clean energy transition is reshaping the energy landscape and driving demand for cryogenic equipment.

Product Development/ Innovation: The cryogenic equipment market is witnessing significant product development and innovation, driven by the growing demand for cryogenic equipment systems in the metallurgy industries. Companies are investing in developing advanced cryogenic equipments.

Market Development: INOX India Limited built an LNG facility in Tamil Nadu, which comprises 2 x 113 KL LNG tanks, regas system with a capacity of 5,000 SCM @ 22 Bar pressure and associated equipment was supplied by INOXCVA on a turnkey basis in a record time.

Market Diversification: Chart Industries collaborated with 8 Rivers Capital, a North Carolina-based clean energy and climate technology company, to grab commercial opportunities for hydrogen technology and solutions. This collaboration includes developing equipment for 8 Rivers technologies backed up by Chart's decades of experience in designing and manufacturing cryogenic, compression, and process technologies, and help 8 Rivers in delivering reliable and cost-effective solutions to its customers. The companies will work together to identify and develop commercial opportunities to integrate Chart offerings into 8 Rivers's projects.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players, like include Linde plc (Ireland); Air Liquide (France); Air Products and Chemicals, Inc. (US); Chart Industries (US); and Parker Hannifin Corp. (US), among others in the cryogenic equipment market.

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*Details on Business Overview, Products Offered, Recent Developments, MnM View, Right to win, Strategic choices made, Weaknesses and competitive threats might not be captured in case of unlisted companies.

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