

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 SCMH @ 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.

Contents

1 INTRODUCTION

1.1 STUDY OBJECTIVES

1.2 MARKET DEFINITION

1.3 INCLUSIONS AND EXCLUSIONS

1.4 MARKET SCOPE

1.4.1 CRYOGENIC EQUIPMENT MARKET SEGMENTATION

1.4.2 REGIONAL SCOPE

1.4.3 YEARS CONSIDERED

1.5 CURRENCY CONSIDERED

1.6 LIMITATIONS

1.7 STAKEHOLDERS

1.8 SUMMARY OF CHANGES

1.8.1 IMPACT OF RECESSION

2 RESEARCH METHODOLOGY

2.1 RESEARCH DATA

FIGURE 1 CRYOGENIC EQUIPMENT MARKET: RESEARCH DESIGN

2.2 MARKET BREAKDOWN AND DATA TRIANGULATION

FIGURE 2 DATA TRIANGULATION METHODOLOGY

2.2.1 SECONDARY DATA

2.2.1.1 Key data from secondary sources

2.2.2 PRIMARY DATA

2.2.2.1 Key data from primary sources

2.2.2.2 Breakdown of primaries

FIGURE 3 BREAKDOWN OF PRIMARIES: BY COMPANY TYPE, DESIGNATION, AND REGION

2.3 MARKET SIZE ESTIMATION

2.3.1 BOTTOM-UP APPROACH

FIGURE 4 CRYOGENIC EQUIPMENT MARKET: BOTTOM-UP APPROACH

2.3.2 TOP-DOWN APPROACH

FIGURE 5 CRYOGENIC EQUIPMENT MARKET: TOP-DOWN APPROACH

2.3.3 DEMAND-SIDE ANALYSIS

2.3.3.1 Demand-side metrics

FIGURE 6 METRICS CONSIDERED FOR ANALYZING AND ASSESSING DEMAND FOR CRYOGENIC EQUIPMENT

2.3.3.2 Assumptions for demand-side analysis

2.3.4 SUPPLY-SIDE ANALYSIS

FIGURE 7 KEY METRICS CONSIDERED FOR ASSESSING SUPPLY OF CRYOGENIC EQUIPMENT

FIGURE 8 CRYOGENIC EQUIPMENT MARKET: SUPPLY-SIDE ANALYSIS

2.3.4.1 Calculations for supply side

2.3.4.2 Assumptions for supply-side analysis

2.3.5 FORECAST

2.3.5.1 Recession impact

3 EXECUTIVE SUMMARY

TABLE 1 CRYOGENIC EQUIPMENT MARKET SNAPSHOT

FIGURE 9 TANKS TO DOMINATE CRYOGENIC EQUIPMENT MARKET THROUGHOUT FORECAST PERIOD

FIGURE 10 NITROGEN TO ACCOUNT FOR LARGEST SHARE OF CRYOGENIC EQUIPMENT MARKET IN 2028

FIGURE 11 ELECTRONICS INDUSTRY TO HOLD MAJORITY OF MARKET SHARE IN 2028

FIGURE 12 CASU APPLICATIONS TO HOLD LARGER SHARE OF CRYOGENIC EQUIPMENT MARKET IN 2028

FIGURE 13 STORAGE SYSTEMS TO LEAD CRYOGENIC EQUIPMENT MARKET THROUGHOUT FORECAST PERIOD

FIGURE 14 ASIA PACIFIC DOMINATED CRYOGENIC EQUIPMENT MARKET IN 2022

4 PREMIUM INSIGHTS

4.1 ATTRACTIVE OPPORTUNITIES FOR PLAYERS IN CRYOGENIC EQUIPMENT MARKET

FIGURE 15 UTILIZATION OF INDUSTRIAL GASES IN METALLURGY AND ENERGY & POWER INDUSTRIES TO DRIVE MARKET

4.2 CRYOGENIC EQUIPMENT MARKET, BY REGION

FIGURE 16 ASIA PACIFIC TO REGISTER HIGHEST CAGR IN CRYOGENIC EQUIPMENT MARKET DURING FORECAST PERIOD

4.3 CRYOGENIC EQUIPMENT MARKET IN ASIA PACIFIC, BY CRYOGEN AND COUNTRY

FIGURE 17 NITROGEN AND CHINA HELD LARGEST SHARE OF ASIA PACIFIC CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN AND COUNTRY,

RESPECTIVELY, IN 2022

4.4 CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT

FIGURE 18 TANKS HELD LARGEST SHARE OF GLOBAL CRYOGENIC EQUIPMENT MARKET IN 2022

4.5 CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN

FIGURE 19 NITROGEN SEGMENT CAPTURED MAJORITY OF MARKET SHARE IN 2022

4.6 CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY

FIGURE 20 METALLURGY INDUSTRY ACCOUNTED FOR LARGEST SHARE OF CRYOGENIC EQUIPMENT MARKET IN 2022

4.7 CRYOGENIC EQUIPMENT MARKET, BY APPLICATION

FIGURE 21 CASU APPLICATIONS DOMINATED CRYOGENIC EQUIPMENT MARKET IN 2022

4.8 CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE

FIGURE 22 STORAGE SYSTEMS DOMINATED CRYOGENIC EQUIPMENT MARKET IN 2022

5 MARKET OVERVIEW

5.1 INTRODUCTION

5.2 MARKET DYNAMICS

FIGURE 23 CRYOGENIC EQUIPMENT MARKET: DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES

5.2.1 DRIVERS

5.2.1.1 Increasing utilization of industrial gases in metallurgy, oil & gas, and energy & power industries

FIGURE 24 GLOBAL OIL DEMAND, 2019–2028

TABLE 2 GLOBAL OIL DEMAND (OECD VS. NON-OECD), 2021–2028

5.2.1.2 Growing popularity of liquefied natural gas as source of clean and efficient energy

5.2.1.3 Rapid transition toward clean energy

FIGURE 25 GLOBAL CLEAN ENERGY INVESTMENTS, 2015–2023

5.2.2 RESTRAINTS

5.2.2.1 High CAPEX and OPEX costs associated with cryogenic plants

5.2.2.2 Volatile raw material and metal prices and significant competition from gray market players

FIGURE 26 IRON ORE PRICING TREND, 2016–2023

5.2.3 OPPORTUNITIES

5.2.3.1 Launch of new space and satellite missions

5.2.3.2 Evolving applications of cryogenic electronics

5.2.3.3 Development of hydrogen economy

5.2.4 CHALLENGES

5.2.4.1 Hazards and greenhouse gas emissions resulting from leakage of cryogenic fluids

5.2.4.2 Supply chain disruptions due to Russia–Ukraine war

5.3 TRENDS/DISRUPTIONS IMPACTING CUSTOMER BUSINESS

FIGURE 27 TRENDS AND DISRUPTIONS IMPACTING CUSTOMER BUSINESS

5.4 PRICING ANALYSIS

5.4.1 INDICATIVE PRICING ANALYSIS, BY EQUIPMENT

TABLE 3 CRYOGENIC EQUIPMENT: INDICATIVE PRICING ANALYSIS, 2022

5.4.2 AVERAGE SELLING PRICE TREND, BY REGION

TABLE 4 CRYOGENIC EQUIPMENT: AVERAGE SELLING PRICE TREND, 2022

5.5 SUPPLY CHAIN ANALYSIS

FIGURE 28 CRYOGENIC EQUIPMENT MARKET: SUPPLY CHAIN ANALYSIS

5.5.1 CRYOGENIC EQUIPMENT RAW MATERIAL SUPPLIERS

5.5.2 CRYOGENIC EQUIPMENT MANUFACTURERS

5.5.3 INDUSTRIAL GAS MANUFACTURERS

5.5.4 END USERS

5.6 ECOSYSTEM/MARKET MAP

TABLE 5 ROLE OF PLAYERS IN ECOSYSTEM

5.7 TECHNOLOGY ANALYSIS

5.8 PATENT ANALYSIS

FIGURE 29 INNOVATIONS AND PATENT REGISTRATIONS PERTAINING TO CRYOGENIC EQUIPMENT, 2018–2022

5.8.1 LIST OF MAJOR PATENTS

5.9 TRADE ANALYSIS

5.9.1 HS CODE 280430

5.9.1.1 Nitrogen export scenario

TABLE 6 EXPORT DATA FOR HS CODE 280430, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 30 NITROGEN EXPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.1.2 Nitrogen import scenario

TABLE 7 IMPORT SCENARIO FOR HS CODE 280430, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 31 NITROGEN IMPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.2 HS CODE 280421

5.9.2.1 Argon export scenario

TABLE 8 EXPORT DATA FOR HS CODE 280421, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 32 ARGON EXPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.2.2 Argon import scenario

TABLE 9 IMPORT SCENARIO FOR HS CODE 280421, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 33 ARGON IMPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.3 HS CODE 280440

5.9.3.1 Oxygen export scenario

TABLE 10 EXPORT DATA FOR HS CODE 280440, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 34 OXYGEN EXPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.3.2 Oxygen import scenario

TABLE 11 IMPORT SCENARIO FOR HS CODE 280440, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 35 OXYGEN IMPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.4 HS CODE 271111

5.9.4.1 LNG export scenario

TABLE 12 EXPORT DATA FOR HS CODE 271111, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 36 LNG EXPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.4.2 LNG import scenario

TABLE 13 IMPORT SCENARIO FOR HS CODE 271111, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 37 LNG IMPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.5 HS CODE 280410

5.9.5.1 Hydrogen export scenario

TABLE 14 EXPORT DATA FOR HS CODE 280410, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 38 HYDROGEN EXPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.9.5.2 Hydrogen import scenario

TABLE 15 IMPORT SCENARIO FOR HS CODE 280410, BY COUNTRY, 2020–2022
(USD THOUSAND)

FIGURE 39 HYDROGEN IMPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD
THOUSAND)

5.10 KEY CONFERENCES AND EVENTS, 2023–2024

TABLE 16 CRYOGENIC EQUIPMENT MARKET: LIST OF CONFERENCES AND
EVENTS

5.11 TARIFFS AND REGULATORY LANDSCAPE

5.11.1 REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER
ORGANIZATIONS

TABLE 17 NORTH AMERICA: LIST OF REGULATORY BODIES, GOVERNMENT
AGENCIES, AND OTHER ORGANIZATIONS

TABLE 18 EUROPE: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES,
AND OTHER ORGANIZATIONS

TABLE 19 GLOBAL: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES,
AND OTHER ORGANIZATIONS

5.11.2 CRYOGENIC EQUIPMENT MARKET: REGULATORY FRAMEWORK
5.12 PORTER'S FIVE FORCES ANALYSIS

FIGURE 40 CRYOGENIC EQUIPMENT MARKET: PORTER'S FIVE FORCES
ANALYSIS

TABLE 20 CRYOGENIC EQUIPMENT MARKET: PORTER'S FIVE FORCES
ANALYSIS

5.12.1 THREAT OF NEW ENTRANTS

5.12.2 BARGAINING POWER OF SUPPLIERS

5.12.3 BARGAINING POWER OF BUYERS

5.12.4 THREAT OF SUBSTITUTES

5.12.5 INTENSITY OF COMPETITIVE RIVALRY

5.13 CASE STUDY ANALYSIS

5.13.1 PHARMACEUTICAL INGREDIENT MANUFACTURER ADOPTED AFCRYO'S
CRYOCUBE PRODUCT TO RECEIVE SECURE SUPPLY OF PHARMACOPEIA-
COMPLIANT LIQUID AND GAS

5.14 MAJOR PHARMACEUTICAL COMPANY INTRODUCED COMPREHENSIVE
CRYOGENIC SOLUTION TO REVOLUTIONIZE COLD CHAIN MANAGEMENT

5.14.1 RESEARCH INSTITUTE DEVELOPED CRYOGENIC SOLUTION FOR
SPECIMEN PRESERVATION

5.15 KEY STAKEHOLDERS AND BUYING CRITERIA

5.15.1 KEY STAKEHOLDERS IN BUYING PROCESS

FIGURE 41 INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP 3
END-USER INDUSTRIES

TABLE 21 INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP 3
END-USER INDUSTRIES (%)

5.15.2 BUYING CRITERIA

FIGURE 42 KEY BUYING CRITERIA FOR TOP 3 END-USER INDUSTRIES

TABLE 22 KEY BUYING CRITERIA FOR TOP 3 END-USER INDUSTRIES

6 CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT

6.1 INTRODUCTION

FIGURE 43 CRYOGENIC EQUIPMENT MARKET SHARE, BY EQUIPMENT, 2022

TABLE 23 CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD
MILLION)

TABLE 24 CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD
MILLION)

TABLE 25 CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022
(THOUSAND UNITS)

TABLE 26 CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028
(THOUSAND UNITS)

6.2 TANKS

6.2.1 INCREASING LNG PRODUCTION TO FUEL DEMAND FOR CRYOGENIC
TANKS

TABLE 27 TANKS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022
(USD MILLION)

TABLE 28 TANKS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028
(USD MILLION)

6.3 VALVES

6.3.1 HIGH DEMAND FOR INDUSTRIAL GASES FROM AEROSPACE AND
ELECTRONICS COMPANIES TO DRIVE MARKET

TABLE 29 VALVES: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022
(USD MILLION)

TABLE 30 VALVES: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028
(USD MILLION)

6.4 VAPORIZERS

6.4.1 GROWING CONSUMPTION OF INDUSTRIAL GASES ACROSS END-USER
INDUSTRIES TO BOOST DEMAND FOR CRYOGENIC VAPORIZERS

TABLE 31 VAPORIZERS: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2018–2022 (USD MILLION)

TABLE 32 VAPORIZERS: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2023–2028 (USD MILLION)

6.5 PUMPS

6.5.1 INCREASING USE OF LNG AS BUNKER FUEL TO CREATE REQUIREMENT FOR CRYOGENIC PUMPS

TABLE 33 PUMPS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 34 PUMPS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.6 OTHER EQUIPMENT

TABLE 35 OTHER EQUIPMENT: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 36 OTHER EQUIPMENT: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

7 CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN

7.1 INTRODUCTION

FIGURE 44 CRYOGENIC EQUIPMENT MARKET SHARE, BY CRYOGEN, 2022

TABLE 37 CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 38 CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2023–2028 (USD MILLION)

7.2 NITROGEN

7.2.1 HIGH ADOPTION OF NITROGEN IN ENERGY & POWER SECTOR TO BOOST DEMAND FOR CRYOGENIC EQUIPMENT

TABLE 39 NITROGEN: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 40 NITROGEN: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.3 ARGON

7.3.1 RISING DEMAND FOR ELECTRONICS TO LEAD TO HIGH REQUIREMENT FOR ARGON-HANDLING CRYOGENIC EQUIPMENT

TABLE 41 ARGON: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 42 ARGON: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.4 OXYGEN

7.4.1 INCREASING STEEL AND IRON PRODUCTION TO CREATE HIGH DEMAND FOR OXYGEN-RELATED CRYOGENIC EQUIPMENT

TABLE 43 OXYGEN: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022

(USD MILLION)

TABLE 44 OXYGEN: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028

(USD MILLION)

7.5 LNG

7.5.1 RISING USE OF LNG AS CLEANER ENERGY SOURCE TO ACCELERATE DEMAND FOR CRYOGENIC EQUIPMENT

TABLE 45 LNG: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 46 LNG: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.6 HYDROGEN

7.6.1 GROWING IMPLEMENTATION OF HYDROGEN FUEL CELLS IN TRANSPORTATION AND ENERGY APPLICATIONS TO FUEL MARKET GROWTH

TABLE 47 HYDROGEN: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 48 HYDROGEN: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.7 OTHER CRYOGENS

TABLE 49 OTHER CRYOGENS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 50 OTHER CRYOGENS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

8 CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY

8.1 INTRODUCTION

FIGURE 45 CRYOGENIC EQUIPMENT MARKET SHARE, BY END-USER INDUSTRY, 2022

TABLE 51 CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 52 CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

8.2 METALLURGY

8.2.1 ADOPTION OF CRYOGENIC EQUIPMENT IN WELDING, FABRICATION, AND COOLING PROCESSES TO BOOST SEGMENTAL GROWTH

TABLE 53 METALLURGY: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 54 METALLURGY: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

TABLE 55 METALLURGY: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2018–2022 (USD MILLION)

TABLE 56 METALLURGY: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2023–2028 (USD MILLION)

8.3 ENERGY & POWER

8.3.1 NEED TO IMPROVE EFFICIENCY AND CAPACITY OF POWER
TRANSMISSION AND DISTRIBUTION SYSTEMS TO ACCELERATE DEMAND FOR
CRYOGENIC EQUIPMENT

TABLE 57 ENERGY & POWER: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2018–2022 (USD MILLION)

TABLE 58 ENERGY & POWER: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2023–2028 (USD MILLION)

TABLE 59 ENERGY & POWER: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2018–2022 (USD MILLION)

TABLE 60 ENERGY & POWER: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2023–2028 (USD MILLION)

8.4 CHEMICAL

8.4.1 REQUIREMENT TO STORE VOLATILE AND REACTIVE CHEMICALS FOR
EXTENDED PERIOD TO BOOST DEMAND FOR CRYOGENIC EQUIPMENT

TABLE 61 CHEMICAL: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022
(USD MILLION)

TABLE 62 CHEMICAL: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028
(USD MILLION)

TABLE 63 CHEMICAL: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2018–2022 (USD MILLION)

TABLE 64 CHEMICAL: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2023–2028 (USD MILLION)

8.5 ELECTRONICS

8.5.1 DEVELOPMENT OF SUPERCONDUCTING ELECTRONICS TO DRIVE
MARKET

TABLE 65 ELECTRONICS: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2018–2022 (USD MILLION)

TABLE 66 ELECTRONICS: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2023–2028 (USD MILLION)

TABLE 67 ELECTRONICS: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2018–2022 (USD MILLION)

TABLE 68 ELECTRONICS: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2023–2028 (USD MILLION)

8.6 TRANSPORTATION

8.6.1 DEVELOPMENT OF FUEL CELL-POWERED ELECTRIC VEHICLES TO CREATE LUCRATIVE OPPORTUNITIES FOR MARKET PLAYERS

TABLE 69 TRANSPORTATION: CRYOGENIC EQUIPMENT MARKET, BY
TRANSPORT TYPE, 2018–2022 (USD MILLION)

TABLE 70 TRANSPORTATION: CRYOGENIC EQUIPMENT MARKET, BY
TRANSPORT TYPE, 2023–2028 (USD MILLION)

TABLE 71 TRANSPORTATION: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2018–2022 (USD MILLION)

TABLE 72 TRANSPORTATION: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2023–2028 (USD MILLION)

TABLE 73 TRANSPORTATION: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2018–2022 (USD MILLION)

TABLE 74 TRANSPORTATION: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2023–2028 (USD MILLION)

8.7 OTHER END-USER INDUSTRIES

TABLE 75 OTHER END-USER INDUSTRIES: CRYOGENIC EQUIPMENT MARKET,
BY REGION, 2018–2022 (USD MILLION)

TABLE 76 OTHER END-USER INDUSTRIES: CRYOGENIC EQUIPMENT MARKET,
BY REGION, 2023–2028 (USD MILLION)

TABLE 77 OTHER END-USER INDUSTRIES: CRYOGENIC EQUIPMENT MARKET,
BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 78 OTHER END-USER INDUSTRIES: CRYOGENIC EQUIPMENT MARKET,
BY CRYOGEN, 2023–2028 (USD MILLION)

9 CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE

9.1 INTRODUCTION

FIGURE 46 CRYOGENIC EQUIPMENT MARKET SHARE, BY SYSTEM TYPE, 2022

TABLE 79 CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2018–2022 (USD
MILLION)

TABLE 80 CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2023–2028 (USD
MILLION)

9.2 STORAGE SYSTEM

9.2.1 GROWING ADOPTION OF CRYOGENIC ENERGY STORAGE SYSTEMS BY
AEROSPACE COMPANIES TO PROVIDE LUCRATIVE OPPORTUNITIES

TABLE 81 STORAGE SYSTEM: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2018–2022 (USD MILLION)

TABLE 82 STORAGE SYSTEM: CRYOGENIC EQUIPMENT MARKET, BY REGION,
2023–2028 (USD MILLION)

9.3 HANDLING SYSTEM

9.3.1 INCREASING FOCUS OF MANUFACTURING FIRMS ON EXTENDING LIFESPAN OF TOOLS AND ACHIEVE COST SAVING TO DRIVE SEGMENTAL GROWTH

TABLE 83 HANDLING SYSTEM: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 84 HANDLING SYSTEM: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

9.4 SUPPLY SYSTEM

9.4.1 RISING USE OF SUPPLY SYSTEMS IN HEALTHCARE, AEROSPACE, AND INDUSTRIAL APPLICATIONS TO SUPPORT MARKET GROWTH

TABLE 85 SUPPLY SYSTEM: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 86 SUPPLY SYSTEM: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

9.5 OTHERS

TABLE 87 OTHERS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 88 OTHERS: CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

10 CRYOGENIC EQUIPMENT MARKET, BY APPLICATION

10.1 INTRODUCTION

FIGURE 47 CRYOGENIC EQUIPMENT MARKET SHARE, BY APPLICATION, 2022

TABLE 89 CRYOGENIC EQUIPMENT MARKET, BY APPLICATION, 2018–2022 (USD MILLION)

TABLE 90 CRYOGENIC EQUIPMENT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 91 NON-CASU: CRYOGENIC EQUIPMENT MARKET, BY APPLICATION, 2018–2022 (USD MILLION)

TABLE 92 NON-CASU: CRYOGENIC EQUIPMENT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

10.2 CASU (CRYOGENIC AIR SEPARATION UNIT)

10.2.1 INSTALLATION OF CASU TO SEPARATE AND PRODUCE HIGH-PURITY GASES AT EXTREMELY LOW TEMPERATURES TO DRIVE MARKET

10.3 NON-CASU (NON-CRYOGENIC AIR SEPARATION UNIT)

10.3.1 UTILIZATION OF NON-CASU IN INDUSTRIAL APPLICATIONS THAT DO NOT REQUIRE HIGH-PURITY GASES TO FUEL MARKET GROWTH

10.3.2 RAIL AND ROAD TRANSPORT INDUSTRY

10.3.3 LNG BULK CARRIER SHIPS

10.3.4 LNG REGASIFICATION AND LIQUEFACTION TERMINALS

10.3.5 OTHER MINOR APPLICATIONS

11 CRYOGENIC EQUIPMENT MARKET, BY REGION

11.1 INTRODUCTION

FIGURE 48 ASIA PACIFIC TO EXHIBIT HIGHEST CAGR IN CRYOGENIC EQUIPMENT MARKET DURING FORECAST PERIOD

FIGURE 49 CRYOGENIC EQUIPMENT MARKET SHARE, IN TERMS OF VALUE, BY REGION, 2022

TABLE 93 CRYOGENIC EQUIPMENT MARKET, BY REGION, 2018–2022 (USD MILLION)

TABLE 94 CRYOGENIC EQUIPMENT MARKET, BY REGION, 2023–2028 (USD MILLION)

11.2 ASIA PACIFIC

11.2.1 RECESSION IMPACT ON MARKET IN ASIA PACIFIC

FIGURE 50 SNAPSHOT: CRYOGENIC EQUIPMENT MARKET IN ASIA PACIFIC

11.2.2 BY EQUIPMENT

TABLE 95 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD MILLION)

TABLE 96 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD MILLION)

11.2.3 BY CRYOGEN

TABLE 97 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 98 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2023–2028 (USD MILLION)

11.2.4 BY END-USER INDUSTRY

TABLE 99 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 100 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.2.5 BY SYSTEM TYPE

TABLE 101 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2018–2022 (USD MILLION)

TABLE 102 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2023–2028 (USD MILLION)

11.2.6 BY COUNTRY

TABLE 103 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 104 ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

11.2.6.1 China

11.2.6.1.1 Growing focus on improving LNG infrastructure to create growth opportunities for providers of cryogenic equipment

11.2.6.1.2 By end-user industry

TABLE 105 CHINA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 106 CHINA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.2.6.2 India

11.2.6.2.1 Increasing investments in space missions to drive market

11.2.6.2.2 By equipment

TABLE 107 INDIA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD MILLION)

TABLE 108 INDIA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD MILLION)

11.2.6.2.3 By cryogen

TABLE 109 INDIA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 110 INDIA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2023–2028 (USD MILLION)

11.2.6.2.4 By end-user industry

TABLE 111 INDIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 112 INDIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.2.6.2.5 By application

TABLE 113 INDIA: CRYOGENIC EQUIPMENT MARKET, BY APPLICATION, 2018–2022 (USD MILLION)

TABLE 114 INDIA: CRYOGENIC EQUIPMENT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 115 INDIA: CRYOGENIC EQUIPMENT MARKET, BY NON-CASU APPLICATION, 2018–2022 (USD MILLION)

TABLE 116 INDIA: CRYOGENIC EQUIPMENT MARKET, BY NON-CASU APPLICATION, 2023–2028 (USD MILLION)

11.2.6.3 Australia

11.2.6.3.1 Increasing government investments in energy & power and metallurgy industries to drive market

11.2.6.3.2 By end-user industry

TABLE 117 AUSTRALIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 118 AUSTRALIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.2.6.4 Japan

11.2.6.4.1 Increasing investments in LNG projects to fuel market growth

11.2.6.4.2 By end-user industry

TABLE 119 JAPAN: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 120 JAPAN: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.2.6.5 Malaysia

11.2.6.5.1 Government focus on energy capacity addition to contribute to market growth

11.2.6.5.2 By end-user industry

TABLE 121 MALAYSIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 122 MALAYSIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.2.6.6 Rest of Asia Pacific

11.2.6.6.1 By end-user industry

TABLE 123 REST OF ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 124 REST OF ASIA PACIFIC: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.3 EUROPE

11.3.1 RECESSION IMPACT ON MARKET IN EUROPE

FIGURE 51 SNAPSHOT: CRYOGENIC EQUIPMENT MARKET IN EUROPE

11.3.2 BY EQUIPMENT

TABLE 125 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD MILLION)

TABLE 126 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD MILLION)

11.3.3 BY CRYOGEN

TABLE 127 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,

2018–2022 (USD MILLION)

TABLE 128 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,
2023–2028 (USD MILLION)

11.3.4 BY END-USER INDUSTRY

TABLE 129 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY END-USER
INDUSTRY, 2018–2022 (USD MILLION)

TABLE 130 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY END-USER
INDUSTRY, 2023–2028 (USD MILLION)

11.3.5 BY SYSTEM TYPE

TABLE 131 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE,
2018–2022 (USD MILLION)

TABLE 132 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE,
2023–2028 (USD MILLION)

11.3.6 BY COUNTRY

TABLE 133 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY,
2018–2022 (USD MILLION)

TABLE 134 EUROPE: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY,
2023–2028 (USD MILLION)

11.3.6.1 Russia

11.3.6.1.1 Investments in LNG projects to fuel market growth

11.3.6.1.2 By end-user industry

TABLE 135 RUSSIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER
INDUSTRY, 2018–2022 (USD MILLION)

TABLE 136 RUSSIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER
INDUSTRY, 2023–2028 (USD MILLION)

11.3.6.2 UK

11.3.6.2.1 Government's commitment to net zero carbon emissions to foster
demand for cryogenic equipment

11.3.6.2.2 By end-user industry

TABLE 137 UK: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY,
2018–2022 (USD MILLION)

TABLE 138 UK: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY,
2023–2028 (USD MILLION)

11.3.6.3 Germany

11.3.6.3.1 Booming energy & power and chemical industries to contribute to market
growth

11.3.6.3.2 By end-user industry

TABLE 139 GERMANY: CRYOGENIC EQUIPMENT MARKET, BY END-USER
INDUSTRY, 2018–2022 (USD MILLION)

TABLE 140 GERMANY: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.3.6.4 France

11.3.6.4.1 Industrial decarbonization goals to boost demand for cryogenic equipment

11.3.6.4.2 By end-user industry

TABLE 141 FRANCE: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 142 FRANCE: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.3.6.5 Rest of Europe

11.3.6.5.1 By end-user industry

TABLE 143 REST OF EUROPE: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 144 REST OF EUROPE: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.4 NORTH AMERICA

11.4.1 RECESSION IMPACT ON MARKET IN NORTH AMERICA

11.4.2 BY EQUIPMENT

TABLE 145 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD MILLION)

TABLE 146 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD MILLION)

11.4.3 BY CRYOGEN

TABLE 147 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 148 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2023–2028 (USD MILLION)

11.4.4 BY END-USER INDUSTRY

TABLE 149 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 150 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.4.5 BY SYSTEM TYPE

TABLE 151 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2018–2022 (USD MILLION)

TABLE 152 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2023–2028 (USD MILLION)

11.4.6 BY COUNTRY

TABLE 153 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 154 NORTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

11.4.6.1 US

11.4.6.1.1 Strong focus on natural gas generation and exports to support market growth

11.4.6.1.2 By end-user industry

TABLE 155 US: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 156 US: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.4.6.2 Canada

11.4.6.2.1 Construction of LNG export facilities to generate significant demand for cryogenic equipment

11.4.6.2.2 By end-user industry

TABLE 157 CANADA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 158 CANADA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.4.6.3 Mexico

11.4.6.3.1 Development of shale reservoirs to create opportunities for market players

11.4.6.3.2 By end-user industry

TABLE 159 MEXICO: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 160 MEXICO: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.5 MIDDLE EAST

11.5.1 RECESSION IMPACT ON MARKET IN MIDDLE EAST

11.5.2 BY EQUIPMENT

TABLE 161 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD MILLION)

TABLE 162 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD MILLION)

11.5.3 BY CRYOGEN

TABLE 163 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 164 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN,

2023–2028 (USD MILLION)

11.5.4 BY END-USER INDUSTRY

TABLE 165 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 166 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.5.5 BY SYSTEM TYPE

TABLE 167 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2018–2022 (USD MILLION)

TABLE 168 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2023–2028 (USD MILLION)

11.5.6 BY COUNTRY

TABLE 169 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 170 MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

11.5.6.1 Saudi Arabia

11.5.6.1.1 Initiation of LNG projects to accelerate market growth

11.5.6.1.2 By end-user industry

TABLE 171 SAUDI ARABIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 172 SAUDI ARABIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.5.6.2 UAE

11.5.6.2.1 Booming energy & power sector to contribute to market growth

11.5.6.2.2 By end-user industry

TABLE 173 UAE: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 174 UAE: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.5.6.3 QATAR

11.5.6.3.1 Increasing construction activities to boost demand for cryogenic equipment

11.5.6.3.2 By end-user industry

TABLE 175 QATAR: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 176 QATAR: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.5.6.4 Rest of Middle East

11.5.6.4.1 By end-user industry

TABLE 177 REST OF MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 178 REST OF MIDDLE EAST: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.6 AFRICA

11.6.1 RECESSION IMPACT ON MARKET IN AFRICA

11.6.2 BY EQUIPMENT

TABLE 179 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD MILLION)

TABLE 180 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD MILLION)

11.6.3 BY CRYOGEN

TABLE 181 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 182 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2023–2028 (USD MILLION)

11.6.4 BY END-USER INDUSTRY

TABLE 183 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 184 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.6.5 BY SYSTEM TYPE

TABLE 185 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2018–2022 (USD MILLION)

TABLE 186 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2023–2028 (USD MILLION)

11.6.6 BY COUNTRY

TABLE 187 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 188 AFRICA: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

11.6.6.1 South Africa

11.6.6.1.1 Shipbuilding, electronics, and chemical industries to contribute to market growth

11.6.6.1.2 By end-user industry

TABLE 189 SOUTH AFRICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 190 SOUTH AFRICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER

INDUSTRY, 2023–2028 (USD MILLION)**11.6.6.2 Nigeria**

11.6.6.2.1 Increasing demand for LNG and nitrogen from oil & gas and shipping industries to fuel market growth

11.6.6.2.2 By end-user industry

TABLE 191 NIGERIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 192 NIGERIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.6.6.3 Algeria

11.6.6.3.1 Upcoming offshore projects to drive demand for cryogenic equipment

11.6.6.3.2 By end-user industry

TABLE 193 ALGERIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 194 ALGERIA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.6.6.4 Rest of Africa**11.6.6.4.1 By end-user industry**

TABLE 195 REST OF AFRICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 196 REST OF AFRICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.7 SOUTH AMERICA**11.7.1 RECESSION IMPACT ON MARKET IN SOUTH AMERICA****11.7.2 BY EQUIPMENT**

TABLE 197 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2018–2022 (USD MILLION)

TABLE 198 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY EQUIPMENT, 2023–2028 (USD MILLION)

11.7.3 BY CRYOGEN

TABLE 199 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2018–2022 (USD MILLION)

TABLE 200 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY CRYOGEN, 2023–2028 (USD MILLION)

11.7.4 BY END-USER INDUSTRY

TABLE 201 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 202 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.7.5 BY SYSTEM TYPE

TABLE 203 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2018–2022 (USD MILLION)

TABLE 204 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY SYSTEM TYPE, 2023–2028 (USD MILLION)

11.7.6 BY COUNTRY

TABLE 205 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 206 SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

11.7.6.1 Brazil

11.7.6.1.1 Energy transition and oil production from offshore sources to drive market

11.7.6.1.2 By end-user industry

TABLE 207 BRAZIL: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 208 BRAZIL: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.7.6.2 Argentina

11.7.6.2.1 Reviving oil & gas sector to bring opportunities for cryogenic equipment providers

11.7.6.2.2 By end-user industry

TABLE 209 ARGENTINA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 210 ARGENTINA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.7.6.3 Venezuela

11.7.6.3.1 Stabilization in oil prices and development of offshore reserves to drive market

11.7.6.3.2 By end-user industry

TABLE 211 VENEZUELA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 212 VENEZUELA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

11.7.6.4 Rest of South America

11.7.6.4.1 By end-user industry

TABLE 213 REST OF SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2018–2022 (USD MILLION)

TABLE 214 REST OF SOUTH AMERICA: CRYOGENIC EQUIPMENT MARKET, BY END-USER INDUSTRY, 2023–2028 (USD MILLION)

12 COMPETITIVE LANDSCAPE

12.1 OVERVIEW

TABLE 215 STRATEGIES ADOPTED BY KEY PLAYERS

12.2 MARKET SHARE ANALYSIS, 2022

TABLE 216 CRYOGENIC EQUIPMENT MARKET: DEGREE OF COMPETITION

FIGURE 52 MARKET SHARE ANALYSIS, 2022

12.3 MARKET EVALUATION FRAMEWORK, 2018–2023

TABLE 217 MARKET EVALUATION FRAMEWORK, 2018–2022

12.4 SEGMENTAL REVENUE ANALYSIS, 2018–2022

FIGURE 53 SEGMENTAL REVENUE ANALYSIS, 2018–2022

12.5 COMPETITIVE SCENARIOS AND TRENDS

12.5.1 DEALS

TABLE 218 CRYOGENIC EQUIPMENT MARKET: DEALS, 2018–2023

12.5.2 OTHERS

TABLE 219 CRYOGENIC EQUIPMENT MARKET: OTHERS, 2018–2023

12.6 COMPANY EVALUATION MATRIX (KEY PLAYERS), 2022

12.6.1 STARS

12.6.2 EMERGING LEADERS

12.6.3 PERVASIVE PLAYERS

12.6.4 PARTICIPANTS

FIGURE 54 CRYOGENIC EQUIPMENT MARKET: COMPANY EVALUATION MATRIX (KEY PLAYERS), 2022

12.6.5 COMPANY FOOTPRINT (KEY PLAYERS)

TABLE 220 EQUIPMENT: COMPANY FOOTPRINT (KEY PLAYERS)

TABLE 221 CRYOGEN: COMPANY FOOTPRINT (KEY PLAYERS)

TABLE 222 END-USER INDUSTRY: COMPANY FOOTPRINT (KEY PLAYERS)

TABLE 223 SYSTEM TYPE: COMPANY FOOTPRINT (KEY PLAYERS)

TABLE 224 REGION: COMPANY FOOTPRINT (KEY PLAYERS)

12.7 COMPANY EVALUATION MATRIX (OTHER PLAYERS), 2022

12.7.1 STARS

12.7.2 EMERGING LEADERS

12.7.3 PERVASIVE PLAYERS

12.7.4 PARTICIPANTS

FIGURE 55 CRYOGENIC EQUIPMENT MARKET: COMPANY EVALUATION MATRIX (OTHER PLAYERS), 2022

12.7.5 COMPANY FOOTPRINT (OTHER PLAYERS)

TABLE 225 EQUIPMENT: COMPANY FOOTPRINT (OTHER PLAYERS)

TABLE 226 CRYOGEN: COMPANY FOOTPRINT (OTHER PLAYERS)
TABLE 227 END-USER INDUSTRY: COMPANY FOOTPRINT (OTHER PLAYERS)
TABLE 228 SYSTEM TYPE: COMPANY FOOTPRINT (OTHER PLAYERS)
TABLE 229 REGION: COMPANY FOOTPRINT (OTHER PLAYERS)

13 COMPANY PROFILES

(Business Overview, Products Offered, Recent Developments, MnM View Right to win, Strategic choices made, Weaknesses and competitive threats) *

13.1 KEY PLAYERS

13.1.1 LINDE PLC

TABLE 230 LINDE PLC: COMPANY OVERVIEW
FIGURE 56 LINDE PLC: COMPANY SNAPSHOT
TABLE 231 LINDE PLC: PRODUCTS/SERVICES/SOLUTIONS OFFERED
TABLE 232 LINDE PLC: DEALS
TABLE 233 LINDE PLC: OTHERS

13.1.2 AIR LIQUIDE

TABLE 234 AIR LIQUIDE: COMPANY OVERVIEW
FIGURE 57 AIR LIQUIDE: COMPANY SNAPSHOT
TABLE 235 AIR LIQUIDE: PRODUCTS/SOLUTIONS/SERVICES OFFERED
TABLE 236 AIR LIQUIDE: DEALS
TABLE 237 AIR LIQUIDE: OTHERS

13.1.3 AIR PRODUCTS AND CHEMICALS, INC.

TABLE 238 AIR PRODUCTS AND CHEMICALS, INC.: COMPANY OVERVIEW
FIGURE 58 AIR PRODUCTS AND CHEMICALS, INC.: COMPANY SNAPSHOT
TABLE 239 AIR PRODUCTS AND CHEMICALS, INC.:
PRODUCTS/SOLUTIONS/SERVICES OFFERED
TABLE 240 AIR PRODUCTS AND CHEMICALS, INC.: DEALS
TABLE 241 AIR PRODUCTS AND CHEMICALS, INC.: OTHERS

13.1.4 CHART INDUSTRIES

TABLE 242 CHART INDUSTRIES: COMPANY OVERVIEW
FIGURE 59 CHART INDUSTRIES: COMPANY SNAPSHOT
TABLE 243 CHART INDUSTRIES: PRODUCTS/SOLUTIONS/SERVICES OFFERED
TABLE 244 CHART INDUSTRIES: DEALS
TABLE 245 CHART INDUSTRIES: OTHERS

13.1.5 PARKER HANNIFIN CORP

TABLE 246 PARKER HANNIFIN CORP.: COMPANY OVERVIEW
FIGURE 60 PARKER HANNIFIN CORP.: COMPANY SNAPSHOT
TABLE 247 PARKER HANNIFIN CORP.: PRODUCTS/SOLUTIONS/SERVICES

OFFERED**13.1.6 FLOWSERVE CORPORATION**

TABLE 248 FLOWSERVE CORPORATION: COMPANY OVERVIEW

FIGURE 61 FLOWSERVE CORPORATION: COMPANY SNAPSHOT

TABLE 249 FLOWSERVE CORPORATION: PRODUCTS/SOLUTIONS/SERVICES
OFFERED**13.1.7 NIKKISO CO., LTD.**

TABLE 250 NIKKISO CO., LTD.: COMPANY OVERVIEW

FIGURE 62 NIKKISO CO., LTD.: COMPANY SNAPSHOT

TABLE 251 NIKKISO CO., LTD.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

13.1.8 INOX INDIA LIMITED

TABLE 252 INOX INDIA LIMITED: COMPANY OVERVIEW

TABLE 253 INOX INDIA LIMITED: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 254 INOX INDIA LIMITED: DEALS

TABLE 255 INOX INDIA LIMITED: OTHERS

13.1.9 TAYLOR-WHARTON

TABLE 256 TAYLOR-WHARTON: COMPANY OVERVIEW

TABLE 257 TAYLOR-WHARTON: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 258 TAYLOR-WHARTON: DEALS

13.1.10 EMERSON ELECTRIC CO.

TABLE 259 EMERSON ELECTRIC CO.: COMPANY OVERVIEW

FIGURE 63 EMERSON ELECTRIC CO.: COMPANY SNAPSHOT

TABLE 260 EMERSON ELECTRIC CO.: PRODUCTS/SOLUTIONS/SERVICES
OFFERED

TABLE 261 EMERSON ELECTRIC CO.: DEALS

13.1.11 WESSINGTON CRYOGENICS

TABLE 262 WESSINGTON CRYOGENICS: COMPANY OVERVIEW

TABLE 263 WESSINGTON CRYOGENICS: PRODUCTS/SOLUTIONS/SERVICES
OFFERED**13.1.12 SULZER LTD**

TABLE 264 SULZER LTD: COMPANY OVERVIEW

FIGURE 64 SULZER LTD: COMPANY SNAPSHOT

TABLE 265 SULZER LTD: PRODUCTS/SOLUTIONS/SERVICES OFFERED

13.1.13 PHPK TECHNOLOGIES

TABLE 266 PHPK TECHNOLOGIES: COMPANY OVERVIEW

TABLE 267 PHPK TECHNOLOGIES: PRODUCTS/SOLUTIONS/SERVICES OFFERED

13.1.14 ACME CRYO.

TABLE 268 ACME CRYO.: COMPANY OVERVIEW

TABLE 269 ACME CRYO.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 270 ACME CRYO.: DEALS

13.1.15 SHI CRYOGENICS GROUP

TABLE 271 SHI CRYOGENICS GROUP: COMPANY OVERVIEW

TABLE 272 SHI CRYOGENICS GROUP: PRODUCTS/SOLUTIONS/SERVICES
OFFERED

TABLE 273 SHI CRYOGENICS GROUP: DEALS

13.2 OTHER PLAYERS

13.2.1 FIVES SAS

13.2.2 CRYOFAB

13.2.3 HEROSE GMBH

13.2.4 CRYOSTAR

13.2.5 SHELL-N-TUBE

*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.

14 APPENDIX

14.1 INSIGHTS FROM INDUSTRY EXPERTS

14.2 DISCUSSION GUIDE

14.3 KNOWLEDGESTORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL

14.4 CUSTOMIZATION OPTIONS

14.5 RELATED REPORTS

14.6 AUTHOR DETAILS

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