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Data Center Precision Air Conditioning Market - Global Outlook and Forecast 2022-2027

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Report description:

The global data center precision air conditioning market is expected to grow at a CAGR of 5.01% during 2022-2027.

In 2021, the global data center cooling market witnessed a steady growth after COVID-19. The data center industry was considered an essential service that led to a considerable increase in power capacity due to the service demand during COVID-19. In addition, the development of hyperscale data centers with a power capacity of over 30 MW will continue to drive market growth throughout the forecast period with the adoption of cooling infrastructure in higher numbers.

The global data center precision air conditioning market is dominated by the US, followed by Western Europe, China, and Nordic countries. However, the significant boost to market growth is aided by the construction of data centers in Latin America, the Middle East and Africa, and Southeast Asia (except Singapore), such as India, China & Hong Kong, and South Korea. The market has also witnessed mergers and acquisitions that have increased the construction of facilities.

KEY HIGHLIGHTS OF THE INDUSTRY
-The global precision air conditioning market is expected to become competitive with the growing adoption of HPC infrastructure for artificial intelligence and machine learning workloads among data centers.
-The global data center precision air conditioning market will face intense competition in developed and matured markets such as North American countries, China, Japan, and Western European countries.
-The market is anticipated to face lower competition in developing markets owing to the quiet presence of global vendors.
-Several countries in the Middle East, Africa, APAC, and Latin America are developing data center markets. The number of deployments is increasing in these regions, which will fuel the precision air conditioning market.

RECENT DEVELOPMENTS & IMPORTANT INVESTMENTS IN 2022

- The US Department of Energy has witnessed investment from Nokia Bell Lab to work on efficient data center cooling.
- Airedale, the cooling company, launched DCS, a new air-cooled chiller to extend the use of free cooling.
- Alibaba Cloud announced a sustainable target by 2030 for becoming carbon neutral.
- A Singapore-based real-estate firm witnessed an investment of around $12 billion over the next five years to deliver 900 MW of data center in Japan.
- NextDC, the Australian data center firm, is planning to build a new data center of 10 MW in Adelaide with an investment of $100 million and is expected to be operational in 2023.
- In 2022, Equinix has planned to open a new data center of 24,200 square feet with an investment of $90 million in Dywidagstrasse 10 in Aschheim with more than 800 cabinet capacity.
- A new entrant Strategic Datasphere invested around $80 million to build a new data center in Georgia with an acquired land of 165,000 square feet.
- Neom has planned to build a hyperscale data center facility with an investment of $500 million. Additionally, Neom has also announced a joint venture with EzdiTek.
- DataBank plans to build a new campus outside of Denver, Colorado, with land acquisition of 75,000 square feet in Centennial, with the name of the DEN2 data center The facility is announced to be of 15 MW capacity.
- IXcellerate has planned to expand its Moscow campuses by raising a fine of around $195 million to expand the campus of the North and South campuses of Moscow.
- Asian Infrastructure Investment Bank (AIIB) invested around $1.1 billion in Keppel Data Center Fund II.
- Stack Infrastructure announced to complete its newly build data center, which they started in 2021 and completed the data center build outside Portland, Oregon. The facility has a capacity of 24 MW and was built on 180,000 square foot land.
- International Finance Corporation announced the investment of around $30 million in the Brazilian data center firm ODATA.
- Zeittec announced to build a data center and deliver a modular facility for the Public Ministry of Mato Grosso do Sul.
- Phaeton technology, a blockchain firm, is developing containerized data centers across Australia, and the modular measures more than 300 square feet.
- DXN, an Australian data center, is building a modular facility with an investment of around $3 million in Pert, Western Australia.

MARKET SEGMENTATION

PRODUCT

In terms of cooling infrastructure, North America has an increasing procurement of AI-based infrastructure solutions, which is a major driving factor for the adoption of rack-based cooling solutions. CRAC and CRAH units market is the largest revenue contributors, followed by evaporative coolers and chillers.

DEPLOYMENT

The market is expected to witness the adoption of modular in-rack cooling solutions during the forecast period. The most efficient cooling technology used in data centers is In-row cooling technology, equipped with a rack power density of over 6kW per rack and above. The adoption of the in-row cooling system is very high due to its increased efficiency and prevents the mixing of hot and cold air. Due to the deployment of the 5G network, the demand for high-performance computing infrastructure procurement has grown along with the construction of edge data centers. Therefore, the installation of modular cooling infrastructure, including in-row cooling and rack-based cooling systems, is expected to grow during the forecast period.

TIER STANDARDS

Most of the data centers in the US and Canada are Tier III certified and have multiple levels of redundancy. In Western Europe, Tier IV facilities have adopted a 2N+1 redundant configuration for the cooling systems.

European countries, including Western Europe, Nordics, and Central & Eastern Europe, are the primary revenue generators for adiabatic cooling units to cool data centers using outside free air. In the UK, most of the facilities are either Tier III or Tier IV certified by the Uptime Institute due to high standard design and construction that include redundant configuration. In the Nordic region, colocation service providers are developing Tier III common facilities adopting N+1 or 2N redundant cooling systems.

By Products
- CRAC Units
- CRAH Units

By Deployment
- In-row cooling
- In-rack cooling
- Centralized

By Tier Standards
- Tier I & Tier II
- Tier III
- Tier IV

GEOGRAPHIC ANALYSIS

The North American data center precision air conditioning market share is expected to cross USD 1.01 billion by 2027. The US has witnessed more than 110 facilities that became operational in 2021, followed by Canada with more than 11 projects in the same period. North America is a strong driver for the data center market, especially with the construction of hyperscale facilities with over 25 MW of power capacity. In North America, the data center market growth is centered in northern Virginia, Dallas, Chicago, and the Silicon Valley region in California, as well as New York and Atlanta. The region has witnessed an increase in investments in Tier III facilities, with the US dominating the market.

In APAC, China, Japan, Australia, New Zealand, and India are the primary data center markets witnessed the investments from global colocation companies and the cloud service providers. In addition, the region is witnessing investments from edge computing locations across various countries, such as China, India, and Australia. In Latin America, Brazil is the primary data center investments contributor, followed by Mexico, Chile, Colombia, and other Latin American Countries. In Latin America, most data centers use air-based cooling systems with N+1 and N+2 redundancies.

In the Middle East & African countries, UAE, Saudi Arabia, South Korea, Israel, Kenya, Nigeria, Turkey, and others are the major countries in the data center investments across the region. The data center facilities in the region majorly adopt air-based cooling systems because of the scarcity of water availability in most countries. The air-based cooling systems adopted in the area include CRAH & CRAC, in-row, and centralized precision air conditioning systems.

By Geography

- APAC
  - China
  - Hong Kong
  - Australia
  - New Zealand

o India
o Japan
o Rest of APAC
- Western Europe
o UK
o Germany
o France
o Netherlands
o Ireland
o Switzerland
o Italy
o Belgium
o Spain
- Central Eastern Europe
o Russia
o Poland & Austria
o Others
- North America
o US
o Canada
- Southeast Asia
o Singapore
o Malaysia
o Thailand
o Indonesia
o Other Southeast Asian Countries
- Nordic
o Denmark
o Norway
o Sweden
o Finland & Iceland
o Other Nordic Countries
- Middle East
o UAE
o Saudi Arabia
o Turkey
o Israel
o Other MEA Countries
- Africa
o South Africa
o Kenya
o Nigeria
o Other African Countries
- Latin America
o Brazil
o Mexico
o Other Latin American Countries

Prominent Critical IT Infrastructure Providers
- Airedale
- AIRSYS
- ClimateWorx
- Climaveneta
- Data Aire
- Delta Group
- Emicon
- Eaton
- Huawei
- Rittal
- Renovoair Zhuhai
- Swegon
- Schneider Electric
- STULZ
- Vertiv

KEY QUESTIONS ANSWERED
1. WHAT WAS THE MARKET SIZE AND GROWTH RATE FOR THE DATA CENTER PRECISION AIR CONDITIONING MARKET IN 2020?
2. WHAT ARE THE KEY TRENDS IMPACTING THE GROWTH OF THE DATA CENTER PRECISION AIR CONDITIONER MARKET?
3. WHAT ARE THE MARKET ENABLERS AND THREATS FACED BY VENDORS IN THE GLOBAL MARKET?
4. WHO ARE THE KEY VENDORS IN THE DATA CENTER PRECISION AIR CONDITIONING MARKET? WHAT STRATEGIES ARE VENDORS ADOPTING TO ENSURE SUSTAINABILITY?
5. WHICH REGION IS LIKELY PROVING SIGNIFICANT BUSINESS OPPORTUNITIES FOR VENDORS DURING THE FORECAST PERIOD?

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