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APAC Data Center Cooling - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The APAC Data Center Cooling Market size is estimated at USD 3.56 billion in 2025, and is expected to reach USD 7.31 billion by 2030, at a CAGR of 15.47% during the forecast period (2025-2030).

Key Highlights
- Surging internet usage and the rising number of data centers-driven by the vast computational needs of artificial intelligence (AI) and media applications-have fueled a massive expansion in the data center cooling market, particularly in the Asia-Pacific (APAC) region.
- Emerging countries in APAC are witnessing rapid IT infrastructure development, further propelling the market. This surge in data center demand has piqued the interest of a diverse array of investors in the region, spanning growth capital, buyout, real estate, and increasingly, infrastructure sectors. For example, in February 2025, CapitalLand Investment Ltd. made headlines with its acquisition of a freehold land parcel in Osaka, marking its inaugural foray into Japan's data center landscape, backed by an investment exceeding USD 700 million. This significant uptick in data center demand underscores the necessity for efficient cooling solutions, as these centers, often housing thousands of servers, require optimal cooling to function effectively.
- The International Energy Agency (IEA) highlights a relentless surge in demand for digital services. Since 2010, the global internet user base has nearly doubled, and web traffic has skyrocketed 20-fold. However, this digital boom raises sustainability concerns. Currently, data centers account for 1.5 percent of the world's electricity consumption, positioning providers as pivotal players in the quest for net-zero emissions. While enhancing energy efficiency poses challenges for the data center industry, it simultaneously opens doors for innovative solutions. Central to this endeavor is the adoption of efficient and sustainable cooling methods for data centers.
- Given that cooling constitutes about 40 percent of a data center's energy consumption, it's a vital determinant of profitability. Overheating can lead to costly downtimes.

- In response to these challenges, APAC companies are pioneering "Green" data centers, opting for Free Air Cooling systems over conventional air conditioners. This shift towards green data centers for data management and distribution has enabled numerous software firms to slash both energy consumption and overall energy expenses.
- Yet, the market faces hurdles, notably adaptability demands and power outages in the APAC region. A typical cooling system for data centers needs to be pre-engineered, standardized, and modular, with flexibility and scalability to align with regional demands. However, firms are increasingly hesitant to invest in high-end, customized cooling solutions, complicating this endeavor.
- Market players are turning to liquid cooling solutions to enhance their offerings. A case in point: in December 2024, British industrial lubricant giant Castrol unveiled its new direct-to-chip cooling fluid, tailored for the intense thermal demands of AI and high-performance computing data centers. Dubbed Castrol ON Direct Liquid Cooling PG 25, this propylene glycol-based fluid is specifically crafted for direct-to-chip applications, comes ready-to-use, and boasts features like corrosion and bacterial growth protection.

APAC Data Center Cooling Market Trends

Information Technology and Telecom Industry to Witness Highest Growth

- Transformative advancements across industries have been largely driven by the Information Technology (IT) vertical. The market studied has seen remarkable growth, largely attributed to a global surge in digitization, spurred by IT innovations. Telenor reports that in the Asia-Pacific (APAC) region, the combined growth of established IoT powerhouses like South Korea, Japan, Australia, and China, alongside emerging players such as India, Pakistan, Bangladesh, Indonesia, and Thailand, is set to propel 14.5 billion IoT devices in 2022 in circulation to a staggering 38.9 billion by 2030.
- Asia-Pacific stands at the forefront of this burgeoning segment. With its status as a burgeoning hub for technology and digital transformation, the IT sector has adeptly risen to the occasion, driving the market studied to unprecedented heights.
- Over the years, as Software as a Service (SaaS) providers have broadened their horizons, the expansion of cloud storage has followed suit. This growth trajectory is poised to amplify the demand for data center cooling systems. Industry giants like Microsoft, AWS, and Google are not just expanding their storage capacities for streamlined cloud workflows but are also making significant investments in hyperscale transactions.
- With the evolution of data-centric technologies such as cloud computing, artificial intelligence, and the Internet of Things (IoT), the appetite for data centers has surged. As companies broaden their digital reach, there's a growing need for either expansive data centers or a network of smaller facilities across diverse regions. This rapid expansion brings forth challenges, particularly in efficiently managing the cooling requirements of these extensive infrastructures.

China is Expected to Witness Significant Market Share

- Data center cooling is rapidly expanding in the Asia-Pacific, driven by the region's burgeoning data center infrastructure, increasing digital service adoption, and the rise of cloud computing. As the demand for data centers surges, there's a heightened focus on efficiency and ensuring maximum uptime.
- Especially, China is making significant strides to outpace global competitors in data center construction. In a relatively brief period, China has evolved from a technological underdog to one of the globe's foremost digital economies. The nation has witnessed a pronounced uptick in the adoption of 5G, wearable tech, the Internet of Things (IoT), and artificial intelligence. According to GSMA, by 2030, 5G adoption in Greater China is projected to hit an average of 88% of total connections, positioning these markets as frontrunners in the global 5G landscape. This digital expansion fuels a surging demand for processing capacity,

prompting larger organizations to upscale their data centers to ensure stable and reliable data services.
- As artificial intelligence and similar workloads gain traction across various Chinese sectors, accelerator processors are making their way into enterprise data centers. Services sensitive to latency are increasingly turning to zero-latency technologies, leveraging acceleration systems for swift data handling. These hardware accelerators have substantial cooling needs, often exceeding 200 W. When combined with a robust server, a single unit can demand nearly 1 kW. This heightened energy requirement has spurred the adoption of immersion cooling technologies in China's data centers.
- While Microsoft Azure and Amazon Web Services are busy building expansive global cloud data center networks, Alibaba Group - the cloud computing arm of China's leading e-commerce giant - is making waves with its innovative cooling solutions. Alibaba's approach involves submerging server motherboards in liquid coolant, a strategy designed to rival the advancements of its global counterparts. This method capitalizes on liquid's superior heat transfer capabilities compared to air. Thanks to the energy efficiency of immersion cooling, Alibaba has managed to slash its data center operating expenses by 20%.

APAC Data Center Cooling Industry Overview

The Asia-Pacific data center cooling market is fragmented. The advantages offered by the technology and aid from the government by imposing efficiency regulations on data centers are expected to help the growth of the data center cooling market directly. Market penetration is growing with a strong presence of major players in established markets. With the increasing focus on innovation, the demand for new technologies is growing, which, in turn, is driving investments for further developments. Key players are Vertiv Co., Schneider Electric SE, STULZ GMBH, etc.

As demand for high-performance computing surges, data centers grapple with the heat produced by cutting-edge components. Enter Direct Liquid Cooling (DLC), a timely answer to the cooling challenges posed by new AI chips. While DLC offers a stopgap for AI chip integration, it doesn't fully tackle the long-term cooling demands of other high-density components or the overarching efficiency and environmental concerns of data centers. The persistent use of air cooling and chillers not only complicates infrastructure but also curtails potential enhancements in Power Usage Effectiveness (PUE).

Looking ahead, immersion cooling stands out as a method to fine-tune workloads in relation to the cooling capacity, positioning dry cooling as a baseline and overclocking as the pinnacle. This strategy, already in play at scale within the Bitcoin and cryptocurrency mining sector, showcases its resilience even in some of the planet's most challenging environments, often where water resources are limited.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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