

Evaporative Cooling - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Evaporative Cooling Market size is estimated at USD 7.13 billion in 2024, and is expected to reach USD 10.16 billion by 2029, growing at a CAGR of 7.35% during the forecast period (2024-2029).

Key Highlights

- As heat waves happen more frequently owing to climate change, millions of people are in danger of exposure to temperatures that could be fatal. People worldwide have been impacted by rising temperatures, making it imperative to address the need for cooling without having a negative carbon footprint, which has been a significant element driving the industry.
- Because evaporative coolers employ fewer parts than air conditioning systems, such as a fan, pump, and water, to chill the room, they can cool various spaces for a meager cost and with minimal operational costs. These evaporative cooling systems' low ownership costs are one of their main benefits.
- Additionally, various governments worldwide have been offering saving programs to promote energy-efficient technologies. For example, as evaporative cooling has been a proven sustainable cooling technology, these systems have been made eligible for the Energy Investment Deduction (EIA) in the Netherlands, which could result in more than 11% net benefit on the entire investment.
- Furthermore, because these systems use fewer components and are, therefore, more energy efficient, evaporative cooling has been one of the most affordable cooling options on the market. For instance, Canstar Blue estimates that the typical reverse cycle split system air conditioner may run at about USD 0.60 per hour. However, with an additional USD 0.02 for water, an evaporative cooling system may cost less than USD 0.10 per hour.
- These evaporative cooling systems' high reliance on the surrounding air quality has been one of their main disadvantages. Since the evaporative cooling process is driven by the temperature difference between the ambient air's dry and wet bulb temperatures, this difference is negligible for moderate and highly humid regions, which results in a constrained cooling capacity.

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-On the other hand, the Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), among other regulating authorities globally, has urged more fresh air intake and ventilation in the current pandemic scenario. Due to this, end users are now compelled to consider integrating evaporative cooling systems, which might significantly improve indoor air quality and offer secure workspaces with less energy use.

Evaporative Cooling Market Trends

Direct Evaporative Cooling to Hold a Major Share

- By utilizing the latent heat of evaporation, which transforms liquid water into water vapor, direct evaporative cooling reduces the temperature and raises air humidity. It is the most basic, traditional, and widely utilized form of evaporative cooling. These evaporative coolants are anticipated to have a limited niche market in the United States, mainly in the south, where the relative humidity at noon in July is above 40%.
- The direct evaporative cooling systems are also appropriate for applications that require significant heat-load replacement and are willing to use outside air to do it. Their applications are widely used in buildings, warehouses, commercial kitchens, and residential settings with laxer comfort standards. The system requirements, therefore, depend on the end users and the established operational performance criteria. Most buildings' evaporative coolers are natural systems, while some indirect ones are also employed.
- The industrial sector accounts for the largest market share among all end-user applications, driven by the large-scale deployment of direct evaporative coolers. The industrial applications for direct evaporative coolers include Buildings, warehouses, factories, manufacturing units, power generation, oil and gas, construction, and many more.
- Additionally, the industrial sectors implement advanced evaporative cooling systems to foresee the need for maintenance before a problem arises. The most recent cooling technologies, which employ Internet of Things (IoT) techniques, contain sensors, connections, software, and other components that let the system communicate with other connected devices. IoT solutions enhance preventative maintenance by collecting information on equipment status and air quality.
- As a result, many businesses concentrate on direct evaporative cooling (DEC), frequently the most energy-efficient method of cooling a data center. To grow its data center cooling sector, which includes natural evaporative cooling, Munters, for instance, shifted its Virginia staff to the new facility in April 2021. A 365,000-square-foot facility for manufacturing, R&D, and sales was the company's USD 36 million investment target.

The Asia-Pacific Region to Hold Significant Market Share

- The Southeast Asian region is anticipated to experience a significant demand for AC sales, driven by rising temperatures and rising earnings, expected to reach 300 million units by 2040; it is anticipated that Indonesia will supply half of the world's air conditioning units.
- In addition, research from the International Energy Agency states that cooling equipment sales are dominated by China, the United States, and Japan, with India and Indonesia experiencing the most significant rise. Although China sold over 500 million units in the past ten years, India and Indonesia had a relative increase in demand for air conditioning that was more rapid, with average yearly installations expanding at a pace of over 15% in both countries. (India)
- South Asia is experiencing exponential growth in the demand for air conditioning, driving the need for economic and simple cooling techniques. When considering these nations' targets for reducing carbon emissions, evaporative cooling is one of the finest solutions. Southeast Asia boasts among the Asia-Pacific region's fastest-growing data center marketplaces, although the sustainability of these facilities is still a problem for the area.

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- Nevertheless, it is anticipated that in the upcoming years, sustainability will become a key differentiator in Asia between data center providers, particularly as leading tech companies around the world, like Microsoft, Google, and Apple, set standards with carbon neutral and zero sustainability goals and as cutting-edge energy-efficient technology is developed.
- Since data center cooling accounts for between 35% and 40% of overall energy demand, it represents a significant hurdle to sustainability in Asia. Most data centers in the area currently employ air-based cooling, a very ineffective and expensive solution.
- Companies in the area are switching more and more to evaporative cooling techniques. For instance, data centers can be sustainable thanks to cooling technology like evaporative cooling. As data centers become more prominent to accommodate the demands of digitalization, these technologies enable businesses to employ indirect evaporative, direct evaporative, hybrid systems, and liquid cooling to reduce Power Usage Effectiveness (PUE) and overall energy usage.

Evaporative Cooling Industry Overview

The Evaporative Cooling Market is moderately competitive and consists of several major players. In terms of market share, few of the major players currently dominate the market. With a prominent share in the market, these major players are focusing on expanding their customer base across foreign countries. The major players include companies like Delta Cooling Towers Inc., Condair Group AG, SPX Cooling Technologies, etc. The competition and rapid technological advancements are expected to pose a threat to the growth of the companies during the forecast period.

In May 2023, Xiaomi Youpin launched the MIJIA Smart Evaporative Cooling Fan, which provides its customers with a refreshing and comfortable indoor environment. The smart fan launched by the company has been designed to provide three effects in one - blowing, cooling, and humidifying. It would be equipped with a circulating water cooling system, which allows the addition of water and ice crystals to bring different cooling effects. The innovative wireless water tank patent design allows the tank to be removed from the body for cleaning at any time, ensuring hygiene and convenience.

Additional Benefits:

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

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