

Water-Efficient Data Center Technologies Market Forecasts to 2034 – Global Analysis By Cooling Technology (Evaporative & Adiabatic Cooling, Liquid Immersion Cooling, Direct-to-Chip Cooling and Hybrid Cooling Systems), Water Source, Water Treatment Method, Ownership Model and By Geography

<https://marketpublishers.com/r/W687FBD2DB8CEN.html>

Date: February 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: W687FBD2DB8CEN

Abstracts

According to Statistics MRC, the Global Water-Efficient Data Center Technologies Market is accounted for \$3.78 billion in 2026 and is expected to reach \$14.19 billion by 2034 growing at a CAGR of 18.0% during the forecast period. Water-saving technologies in data centers aim to optimize cooling and performance while cutting water usage. These include sophisticated liquid cooling methods, use of reclaimed water, and air-based cooling systems that lessen reliance on fresh water. By integrating water-efficient practices, data centers can reduce costs, meet environmental standards, and boost sustainability. Advanced solutions like smart monitoring, predictive maintenance, and heat recovery further improve operational effectiveness. With the growing demand for data services worldwide, implementing water-efficient approaches is vital for minimizing environmental impact, preserving vital water resources, and ensuring the long-term sustainability and reliability of data center operations in areas facing water scarcity.

According to the Environmental and Energy Study Institute (EESI), large data centers can consume up to 5 million gallons of water per day, equivalent to the daily use of a town with 10,000–50,000 residents. Technologies such as direct-to-chip cooling and immersion cooling are highlighted as solutions to reduce both water and energy usage in these facilities.

Market Dynamics:

Driver:

Increasing water scarcity and environmental concerns

The global shortage of water and rising environmental concerns are pushing data centers toward water-efficient technologies. Stricter environmental regulations and societal expectations compel organizations to minimize freshwater usage. Implementing advanced cooling systems, reusing water, and leveraging intelligent monitoring reduces ecological footprint while maintaining performance. Companies gain compliance advantages, cost reductions, and enhanced sustainability credentials. As climate change intensifies water scarcity, adopting water-saving strategies has become critical for ensuring operational continuity, meeting regulatory demands, and supporting the long-term sustainable development of data center infrastructure.

Restraint:

High initial investment costs

Adopting water-efficient technologies in data centers demands substantial initial capital, posing a challenge for many operators. Installing advanced cooling systems, water recycling setups, and monitoring tools requires significant financial resources, particularly impacting small and medium-sized facilities. While long-term savings are achievable, the upfront costs can discourage adoption. Organizations must carefully assess return on investment and consider phased rollouts. This financial barrier restrains market expansion, as companies evaluate whether the long-term benefits justify immediate expenditure before investing in comprehensive water-efficient infrastructure.

Opportunity:

Adoption of advanced cooling solutions

Advanced cooling solutions offer a major growth opportunity for water-efficient data centers. Techniques like liquid immersion, hybrid air-water cooling, and free-air cooling significantly cut water consumption while preserving high performance. Organizations that adopt these technologies benefit from lower energy costs, reduced operational expenses, and improved sustainability credentials. Incorporating smart monitoring and

automation enhances efficiency, enabling predictive maintenance and optimal resource use. With the continuous rise in data demand, these solutions help data centers reduce ecological impact, manage costs, and strengthen their market position in an industry increasingly focused on environmentally responsible operations.

Threat:

Competition from traditional cooling methods

Conventional cooling techniques, relying on plentiful water and lower upfront costs, threaten the adoption of water-efficient data center technologies. Organizations often favor familiar systems with simpler maintenance and lower initial investment. Even with long-term economic and environmental advantages, water-saving solutions may struggle to gain traction if traditional methods remain dominant. This reliance on conventional approaches restricts market growth. To address this threat, companies must increase awareness, demonstrate cost benefits, and provide incentives to encourage transitioning from traditional cooling to sustainable, water-efficient technologies that align with modern efficiency and sustainability goals.

Covid-19 Impact:

The COVID-19 outbreak had a notable effect on the water-efficient data center technologies market. Lockdowns and increased reliance on remote work, online services, and cloud infrastructure boosted demand for data centers, emphasizing the need for efficient and sustainable cooling systems. At the same time, disruptions in supply chains, postponed projects, and financial limitations temporarily slowed the rollout of water-saving technologies. Nevertheless, the pandemic underscored the critical need for sustainable operations, encouraging data centers to implement long-term water efficiency strategies. Consequently, COVID-19 served as both a temporary barrier and a catalyst for the future expansion of water-efficient data center solutions.

The evaporative & adiabatic cooling segment is expected to be the largest during the forecast period

The evaporative & adiabatic cooling segment is expected to account for the largest market share during the forecast period due to its efficiency, affordability, and versatility. By using natural evaporation and airflow methods, these systems reduce water usage while delivering effective cooling. Their straightforward design, lower upfront costs, and compatibility with existing infrastructure make them appealing to data center operators.

Furthermore, they contribute to energy conservation and environmental sustainability targets. With the growing focus on green operations in data centers, evaporative and adiabatic cooling maintains its dominant market position, demonstrating broad acceptance and proven performance across various facilities.

The reverse osmosis (RO) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the reverse osmosis (RO) segment is predicted to witness the highest growth rate, driven by its superior water purification performance and growing need for high-quality water. RO systems efficiently remove impurities, minerals, and contaminants, ensuring cooling and recycling processes operate reliably. Increasing emphasis on water conservation and strict operational quality standards is fueling demand for RO solutions. Their integration with other water-saving technologies and contribution to sustainable practices make them a preferred option. Consequently, RO systems are rapidly expanding in adoption, offering data centers an effective means to achieve efficiency, reliability, and long-term water sustainability goals.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share due to its well-developed infrastructure, dense concentration of data centers, and strong focus on sustainability. Major technology companies and hyperscale cloud providers drive demand for efficient water management systems. Stringent environmental regulations and corporate green initiatives promote the use of water-efficient cooling, treatment, and recycling solutions. The region's advanced technology ecosystem, skilled labor, and investment in eco-friendly infrastructure support widespread adoption. As a result, North America leads the market by combining high operational performance with environmental responsibility, making it the primary hub for implementing water-efficient data center technologies.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by rapid digital transformation, cloud service expansion, and the rise of hyperscale data centers. Increased internet usage, IT infrastructure investments, and e-commerce growth are boosting the need for sustainable water management solutions. Countries such as China, India, and Japan are enforcing environmental policies and offering incentives to encourage green operations. This combination of rising data

demand, favorable regulations, and sustainability initiatives is accelerating the adoption of advanced cooling, water recycling, and treatment systems, positioning Asia-Pacific as the region with the highest market growth rate.

Key players in the market

Some of the key players in Water-Efficient Data Center Technologies Market include Corintis, Flexnode, Submer, Crusoe, Firmus Technologies, Iceotope, Vertiv Group Corp., Schneider Electric, Green Revolution Cooling, DCX Liquid Cooling Systems, Nautilus Data Technologies, Novva Data Centers, Asetek Inc., Asperitas and CoolIT Systems.

Key Developments:

In January 2026, Corinthians have agreed a deal for Ana Vit?ria with Atl?tico de Madrid, pending final contract details. The club said in a statement that terms are in place with Atl?tico and that club and player are finalising the paperwork. Atl?tico de Madrid also confirmed the transfer, adding she joined in January 2024 from PSG.

In November 2025, Schneider Electric announced a two-phase supply capacity agreement (SCA) totaling \$1.9 billion in sales. The milestone deal includes prefabricated power modules and the first North American deployment of chillers. The announcement was unveiled at Schneider Electric's Innovation Summit North America in Las Vegas, convening more than 2,500 business leaders and market innovators to accelerate practical solutions for a more resilient, affordable and intelligent energy future.

In October 2025, Crusoe announced a groundbreaking partnership with Starcloud, the first company to build AI data centers in space, to become the first public cloud provider to run workloads in outer space. Under this agreement, Crusoe will deploy Crusoe Cloud on a Starcloud satellite scheduled to launch in late 2026. Crusoe plans to offer limited GPU capacity from space by early 2027, pioneering a new paradigm for AI factories.

Cooling Technologies Covered:

Evaporative & Adiabatic Cooling

Liquid Immersion Cooling

Direct-to-Chip Cooling

Hybrid Cooling Systems

Water Sources Covered:

Potable Water

Reclaimed/Grey Water

Rainwater Harvesting Systems

Water Treatment Methods Covered:

Filtration

Reverse Osmosis (RO)

Chemical Treatment

Ownership Models Covered:

Hyperscale Data Centers

Wholesale Colocation

Enterprise Data Centers

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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