

Tertiary Water And Wastewater Treatment Equipment Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Equipment Type (Filtration Systems, Disinfection Systems, Membrane Systems, Chemical Treatment Equipment, Others), By Application (Municipal Water Treatment, Industrial Wastewater Treatment, Agricultural Water Treatment, Commercial & Residential Water Treatment), By Region & Competition, 2020-2030F

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Abstracts

Market Overview

The Global Tertiary Water and Wastewater Treatment Equipment Market was valued at USD 30.62 Billion in 2024 and is projected to reach USD 40.98 Billion by 2030, expanding at a CAGR of 4.82% during the forecast period. This market is integral to achieving advanced levels of water purification beyond primary and secondary treatments. With escalating global concerns over water scarcity and pollution, the adoption of tertiary treatment systems has surged. These systems utilize cutting-edge technologies such as advanced filtration, membrane separation, nutrient removal, and disinfection to produce high-quality effluent suitable for reuse across industrial, agricultural, and municipal sectors. Heightened environmental regulations are prompting investments in new infrastructure and upgrades to existing facilities, especially in developed economies. Industries like textiles, pharmaceuticals, food processing, and chemicals increasingly require sophisticated treatment for complex wastewater compositions. In parallel, technological progress in membrane systems, UV disinfection, and real-time monitoring is enhancing operational efficiency and cost-effectiveness,

driving further market adoption.

Key Market Drivers

Increasing Stringency of Environmental Regulations

Rising enforcement of environmental laws worldwide is significantly propelling the adoption of tertiary water and wastewater treatment equipment. Regulatory authorities are implementing strict discharge norms to limit contaminants such as nutrients, pathogens, and heavy metals in treated effluent. For instance, the EU's Urban Waste Water Treatment Directive and the U.S. EPA's regulatory framework mandate advanced contaminant removal, compelling both municipal and industrial sectors to deploy tertiary systems like membrane bioreactors, UV disinfection units, and advanced oxidation processes. In 2023, over 70% of wastewater plants in developed nations transitioned to tertiary solutions to meet evolving standards. India's National Green Tribunal has also driven over 50 industrial clusters to adopt tertiary treatment. The risk of non-compliance—ranging from financial penalties to operational suspensions—reinforces the necessity for high-performance tertiary treatment systems. These regulatory pressures are fostering innovation and accelerating capital investments in efficient, regulation-compliant water treatment technologies worldwide.

Key Market Challenges

High Capital and Operational Costs

The high initial and ongoing costs associated with tertiary water and wastewater treatment technologies remain a major obstacle. Equipment such as reverse osmosis systems, UV disinfection units, and advanced oxidation technologies demand substantial capital outlays, often 30–50% higher than traditional systems. Operational expenses are also considerable, driven by high energy requirements, frequent membrane maintenance, skilled workforce needs, and chemical consumption. Tertiary systems typically consume 20–40% more energy than secondary processes, making them less feasible for budget-constrained municipalities and industries. Maintenance challenges like membrane fouling and scaling elevate costs and disrupt operations, increasing the risk of non-compliance. For smaller communities and developing markets, these financial burdens inhibit widespread adoption. Additionally, the slower diffusion of innovations in cost-sensitive regions further hampers market expansion. While tertiary equipment ensures regulatory compliance and high water quality, balancing these benefits against the high cost of ownership remains a critical concern.

for stakeholders.

Key Market Trends

Growing Focus on Water Reuse and Recycling

The market is witnessing a strong shift toward water reuse and recycling, driven by increasing water scarcity and global sustainability goals. Tertiary treatment technologies are essential for converting treated wastewater into reusable water suitable for industrial operations, irrigation, and even potable applications. Regions facing recurrent droughts and rapid urbanization—such as Asia-Pacific, the Middle East, and parts of Europe—are investing in water reclamation initiatives supported by stringent reuse policies and incentives. In California, for instance, regulatory mandates promote recycled water use across sectors, stimulating demand for advanced tertiary equipment. Industrial players, particularly in energy, textile, and chemical sectors, are embracing water reuse to lower freshwater dependency and reduce operational costs. Municipal bodies are also turning to tertiary systems to boost potable water reserves and maintain compliance. Emerging combinations of UV and chlorination or advanced oxidation technologies are enhancing water quality and safety. Additionally, the rise of decentralized, compact reuse systems is supporting localized treatment in remote and peri-urban settings.

Key Market Players

Veolia Environnement SA

Xylem Inc.

SUEZ SA

Pentair plc

DuPont Water Solutions

Aquatech International LLC

3M Company

Calgon Carbon Corporation

Toray Industries

Fluence Corporation

Report Scope:

In this report, the Global Tertiary Water And Wastewater Treatment Equipment Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Tertiary Water And Wastewater Treatment Equipment Market, By Equipment Type:

Filtration Systems

Disinfection Systems

Membrane Systems

Chemical Treatment Equipment

Others

Tertiary Water And Wastewater Treatment Equipment Market, By Application:

Municipal Water Treatment

Industrial Wastewater Treatment

Agricultural Water Treatment

Commercial & Residential Water Treatment

Tertiary Water And Wastewater Treatment Equipment Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

South America

Brazil

Argentina

Colombia

Asia-Pacific

China

India

Japan

South Korea

Australia

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Tertiary Water And Wastewater Treatment Equipment Market.

Available Customizations:

Global Tertiary Water And Wastewater Treatment Equipment Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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