

# **Water Desalination Equipment Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Technology (Reverse Osmosis, Multi-Stage Flash Distillation, Multi-Effect Distillation, Electrodialysis, Vapor Compression Distillation, Others), By Source (Sea Water, Brackish Water, River Water, Wastewater, Others), By Application (Municipal, Industrial, Military & Defense, Agriculture, Others), By Region & Competition, 2020-2030F**

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## **Abstracts**

### **Market Overview**

The Global Water Desalination Equipment Market was valued at USD 18.81 billion in 2024 and is projected to reach USD 30.13 billion by 2030, growing at a CAGR of 8.01% during the forecast period. Rising water scarcity, accelerating population growth, and intensifying industrial activity are key forces driving market expansion. As freshwater resources dwindle due to climate change and overuse, desalination has emerged as a critical solution to meet global water demand, particularly in arid regions and heavily populated coastal zones. Desalination technologies, including reverse osmosis (RO), multi-stage flash (MSF), and multi-effect distillation (MED), enable the conversion of seawater or brackish water into potable water. RO is the most widely adopted due to its high energy efficiency and cost-effectiveness. Technological advancements, such as energy recovery systems, nanomaterials, and modular plant designs, are further improving sustainability and operational performance. Government initiatives,

renewable-powered desalination plants, and increasing private sector investments are accelerating project development. While challenges remain—particularly high capital costs and brine disposal issues—innovation in membrane technology and sustainable practices is enhancing the feasibility and scalability of desalination systems worldwide.

## **Key Market Drivers**

### **Escalating Water Scarcity Due to Climate and Population Pressures**

Rising water scarcity, fueled by climate variability and rapid population growth, is a primary factor boosting demand for desalination technologies. Many regions are facing declining groundwater reserves and inconsistent rainfall patterns, which undermine traditional freshwater sources. As urban and rural populations continue to grow, the demand for clean water for domestic, agricultural, and industrial purposes intensifies. Desalination equipment offers a viable and scalable solution to these challenges, particularly in arid regions where natural water sources are insufficient. Increasing drought frequency and the over-extraction of aquifers further highlight the urgency for alternative water supply strategies, positioning desalination as a crucial tool for long-term water security.

## **Key Market Challenges**

### **High Capital and Operational Costs**

One of the most pressing challenges in the Global Water Desalination Equipment Market is the significant capital investment required to build and operate desalination facilities. Initial setup costs encompass land acquisition, system design, procurement, and construction. Additionally, the high energy consumption associated with desalination—especially in thermal and high-pressure reverse osmosis systems—contributes to elevated operational expenses. These costs are often prohibitive for developing countries with limited financial resources or reliance on non-renewable energy sources. Routine maintenance, skilled workforce requirements, and frequent membrane replacement further add to the cost burden. As a result, desalinated water can be considerably more expensive than conventional sources, making adoption challenging in price-sensitive regions despite growing demand.

## **Key Market Trends**

## Rise of Modular and Containerized Desalination Systems

The increasing adoption of modular and containerized desalination systems is transforming the market landscape. These compact, pre-engineered units offer flexibility, rapid deployment, and lower capital investment, making them ideal for remote areas, emergency relief, military applications, and small-scale municipal use. Typically based on reverse osmosis technology, containerized systems are assembled off-site and installed with minimal infrastructure, enabling faster project execution and scalability. A single 40-foot unit can produce up to 250 cubic meters of potable water daily, catering to isolated resorts, small islands, and temporary construction sites. Their appeal lies in reduced construction time, ease of maintenance, and cost efficiency. Integration of smart technologies—such as remote monitoring, AI-based diagnostics, and predictive maintenance—enhances operational uptime and efficiency. These decentralized solutions are gaining popularity among governments and NGOs for disaster response and urban water resilience, and are expected to play a growing role in the future of desalination as demand for flexible and sustainable water infrastructure increases.

### Key Market Players

Veolia Water Technologies

SUEZ Water Technologies & Solutions

ACCIONA

IDE Technologies

Doosan Enerbility

Aquatech International

Biwater Holdings Limited

Genesis Water Technologies

DuPont Water Solutions

Toray Industries, Inc.

## Report Scope:

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

### Water Desalination Equipment Market, By Technology:

Reverse Osmosis

Multi-Stage Flash Distillation

Multi-Effect Distillation

Electrodialysis

Vapor Compression Distillation

Others

### Water Desalination Equipment Market, By Source:

Sea Water

Brackish Water

River Water

Wastewater

Others

### Water Desalination Equipment Market, By Application:

Municipal

Industrial

Military & Defense

Agriculture

Others

## Water Desalination 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 Water Desalination Equipment Market.

## **Available Customizations:**

Global Water Desalination 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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