India Zero Liquid Discharge Systems Market By Technology (Ultrafiltration, Reverse Osmosis, Evaporation/Crystallization, and Fractional Electrode ionization), By End-Use Industry (Chemicals & Petrochemicals, Food & Beverages, Energy & Power, Pharmaceuticals and Others), By Plant Category (Less Than 100 MLD, 101 - 200 MLD, 201-500 MLD & Above 501MLD), By Region, Competition Forecast & Opportunities, 2019-2029

Market Report (3 business days) | 2023-09-05 | 85 pages | TechSci Research

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Report description:

India Zero Liquid Discharge Systems Market is anticipated to grow at a robust pace in the forecast period, 2025-2029. Costs for desalination plants would rise over the anticipated period due to a growing population, a lack of freshwater resources, an availability of saltwater, and increased industrialization. Zero liquid discharge (ZLD) systems are a term used to describe the strategic wastewater treatment methods used to handle industrial plant discharges and stop liquid effluents from entering aquatic bodies.

An ambitious wastewater management technique known as zero liquid discharge (ZLD) aims to completely remove all liquid waste from leaving the plant or facility boundaries, with the bulk of water being collected for reuse. ZLD strikes a balance between the use of freshwater resources and the protection of aquatic habitats by eliminating the danger of contamination associated with wastewater discharge and increasing water consumption efficiency. However, achieving ZLD is typically associated with high cost and heavy energy usage. ZLD has so been used sparingly and has long been regarded as being unviable.

Growing market demand forcutting-edge ZLD technology is being driven by rising investment

Companies in the India zero liquid discharge systems market is expanding the availability of their services for the bio energy industry as a result of the tightening regulatory requirements in the country. For instance, Praj Industries Ltd. in Pune, India, is

expanding the reach of its zero liquid discharge solutions for the brewing industry, bioproducts firms, and the bioenergy sector.
Zero liquid discharge (ZLD), an ambitious wastewater management strategy, attempts to totally prevent all liquid waste from leaving the plant or facility limits, with the majority of water being recovered for reuse. ZLD eliminates the risk of contamination associated with wastewater discharge and improves water consumption efficiency to achieve a balance between the use of freshwater resources and the conservation of aquatic environments. However, establishing ZLD is frequently accompanied with expensive costs and significant energy consumption. ZLD has always been viewed as being unviable due to its limited utilisation. Recent freshwater supply shortages have resulted from rising domestic, industrial, and drinking water demands. Desalination of saltwater to provide drinking water is one use for Zero Liquid Discharge (ZLD) technology. The concentrate is additionally processed in zero liquid discharge (ZLD) applications for desalination in order to produce water with zero discharge of liquid waste from the process. ZLD desalination techniques are now mostly employed to clean power plant cooling water and industrial waste streams. ZLD techniques with a long history include thermal desalination and evaporation ponds. As a result, a key driver of the market's expansion has been the use of ZLD for desalination.

Rising Membrane Technology Fueling the ZLD Systems Market

Membrane technology could be employed for the crucial intermediate stage of the ZLD process in place of a Membrane Brine Concentrator (MBC), offering reduced energy consumption, lower capital costs, better reliability, and the potential to achieve higher water recovery. As a result, less flow and energy may be required for the final ZLD phase of crystallization.

For the treatment of high salinity brines, new technologies have been created, including forward osmosis (FO) membranes and electro-separation systems in the field of ZLD (Zero Liquid Discharge). The forward osmosis membrane technique is more successful in separating dissolved solids from streams with significant fouling because of its low operating pressure and swift crossflow velocity.

Consequently, the presence of a government requirement and the high rate of recovery for the zero liquid discharge method are anticipated to open up new opportunities for the growth of India zero liquid discharge systems market.

Market Segmentation

The India Zero Liquid Discharge Systems Market is segmented into technology, end-use industry,plant category, region and competitive landscape. Based on technology, the market is segmented into Ultrafiltration, Reverse Osmosis, Evaporation/Crystallization, and Fractional Electrodeionization. Based on end-use industry, the market is divided into Chemicals & Petrochemicals, Food & Beverages, Energy & Power, Pharmaceuticals and Others. Based on Plant category, the market is divided into Less Than 100 MLD, 101-200 MLD, 201-500 MLD & Above 501MLD.

Market players

Major players operating in the India Zero Liquid Discharge Systems Market are Swati Water Purification, WTE Infra Projects Private Limited, Pure Watertech Private Limited, Chemdist Process Solutions, Shiva Global Environmental Private Limited, Ventilair Engineers Private Limited, Ketav Consultant, Ysm Dairy & Biotech Private Limited, Pranjali Water Solution Technology, WTE Infra Projects Private Limited

Report Scope:

In this report, India Zero Liquid Discharge Systems Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

- India Zero Liquid Discharge Systems Market, By Technology:
- Ultrafiltration
- Reverse Osmosis
- Evaporation/Crystallization
- Fractional Electrodeionization
- India Zero Liquid Discharge Systems Market, By End-User Industry:
- Chemicals & Petrochemicals
- Food & Beverages
- Energy & Power
- Pharmaceuticals
- Others

o India Zero Liquid Discharge Systems Market, By Plant Category:
o Less Than 100 MLD
o 101-200 MLD
o 201-500 MLD
o Above 501MLD
o India Zero Liquid Discharge Systems Market, By Region:
o West India
o North India
o South India
o East India
Competitive Landscape
Company Profiles: Detailed analysis of the major companies present in the India Zero Liquid Discharge Systems Market.
Available Customizations:
Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:
Company Information
o Detailed analysis and profiling of additional market players (up to five).

Table of Contents:

The data given for any year represents the market during the period, i.e., 1st April of the former year to 31st March of latter year. Eg: For FY2023E, the data represents the period, 1st April 2022 to 31st March 2023.

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