

OEM UPDATE



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22 HOW A HOMEGROWN LUBRICANT BRAND IS POWERING INDIAN INDUSTRY

ZERO WASTE AUTOMAKING

The automotive industry is accelerating towards cleaner mobility, with manufacturers facing a new imperative: eliminating waste across the entire value chain. From raw material sourcing to component production and end-of-life recycling, zero-waste manufacturing is becoming a crucial benchmark for sustainable progress. Drawing on insights from sustainability experts and industry leaders, OEM Update's July cover story explores how automotive OEMs and Tier-1 suppliers can adopt circular economy principles and optimise production processes to minimise material waste.



ACOPOS 6D
Creating new dimensions
of adaptive manufacturing.

Turning waste into worth with smart water solutions

India is on its development journey, where urbanisation, industrial growth, and increasing population have placed significant stress on water resources. One of the most pressing concerns is the management of wastewater, a critical but often overlooked component of sustainable development.

According to estimates by the Central Pollution Control Board (CPCB), India generates over 72,000 million litres of sewage per day (MLD) from urban areas. Of this, less than 30,000 MLD are effectively treated. The remaining untreated wastewater finds its way to rivers, lakes, and soil, leading to contamination, health hazards, and environmental degradation.

A shift in approach

Conventional wastewater treatment approaches, which often rely on manual intervention and periodic monitoring, are insufficient to address the growing scale and complexity of modern wastewater challenges. There is increasing acknowledgement that wastewater should be viewed as a recoverable resource rather than a by-product.

This shift requires the integration of smart water solutions. It needs systems that are designed to provide real-time data, automated control, and adaptive decision-making for more efficient and sustainable water management.

Role of sensors and analysers

Smart wastewater management begins with accurate and continuous measurement. A new generation of water quality sensors and analysers has made it possible to monitor key parameters in real time, providing data that can drive informed decisions.

Commonly monitored parameters include:

- pH and ORP – for acid-base balance and oxidation potential
- Turbidity and TSS – indicating particulate matter in the water
- BOD, COD, TOC – critical for assessing organic pollutant load
- Ammonia, Nitrate, and Phosphate – for nutrient monitoring and biological treatment efficiency
- Oil-in-water and hydrocarbon sensors – especially relevant for industrial effluents

These instruments can be integrated into existing SCADA or cloud-based platforms, enabling

India generates over 72,000 million litres of sewage per day, with less than 30,000 MLD being effectively treated. This untreated wastewater leads to contamination, health hazards, and environmental degradation. Bijal Sanghvi, Managing Director of Axis Solutions Limited, suggests that conventional wastewater treatment approaches are insufficient and wastewater should be treated as a recoverable resource. Smart water solutions provide real-time data, automated control, and adaptive decision-making for more efficient and sustainable water management.



Dr. Bijal Sanghvi
Managing Director,
Axis Solutions Limited

operators to detect anomalies, automate chemical dosing, optimise energy use, and maintain compliance with discharge norms.

India's industrial and urban demand

India's water demand is expected to double by 2030, while the per capita availability continues to decline. Many urban centres are already facing severe water stress. At the same time, industrial sectors such as textiles, pharmaceuticals, petrochemicals, and food

processing generate large volumes of complex effluents.

Smart monitoring tools meet the Environmental Clearance (EC) and Consent to Operate (CTO) requirements and improve resource efficiency at the plant level. Automation, driven by reliable sensing technologies, allows facilities to reduce manual oversight, minimise downtime, and ensure predictable performance.

Reuse and resource recovery.

Modern wastewater management applies a reuse and recovery philosophy. Many facilities are now moving toward

- Effluent reuse in cooling systems, cleaning, or landscaping
- Sludge management for biogas or compost generation
- Nutrient recovery for agriculture
- Zero Liquid Discharge (ZLD) systems for water-scarce regions
- None of these processes is feasible without reliable, real-time monitoring and control.

Smart water solutions in India

Smart water solutions are no longer aspirational; they are practical, accessible, and necessary. Across India, municipal bodies, private industries, and infrastructure developers are increasingly adopting digital tools to strengthen their water and wastewater systems. The objective is to build resilience by reducing operational costs and improving long-term environmental outcomes.

There is a growing ecosystem of technology providers, engineering companies, and system integrators in India who are enabling this transition. With the right combination of domain knowledge, in-house engineering, and process understanding, these stakeholders are laying the groundwork for sustainable water management at scale.

Final thoughts

Managing wastewater efficiently is a current priority. Smart water solutions provide the tools to make this possible, ensuring transparency, efficiency, and accountability.

As infrastructure continues to expand and environmental standards tighten, accurate sensing, data analytics, and process automation will play a central role in building a resilient and water-secure India.