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JAL SHAKTI

The way forward for water sustainability



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JAL SHAKTI:

THE WAY FORWARD FOR WATER SUSTAINABILITY

Water availability in India is decreasing fast with the increasing population and change in weather patterns. The depleting water resources add more trouble. In this scenario, **Construction Times** explores the way forward for water sustainability in the long run.

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industry through innovation that can be deployed in the water sector and nations across the globe are experimenting with modern technology,” he adds.



Dr. HARISH SHARMA
Executive Director
Rudrabhishek Enterprises
Ltd (REPL)

Regarding the challenges faced by the water infrastructure sector, **Dr. Harish Sharma, Executive Director, Rudrabhishek Enterprises Ltd (REPL)**, observes,

“The major challenge lies in the efficiency of the distribution system. Due to inefficient designs and poor maintenance, millions of litres of water are wasted every year. Proper planning, good quality material, and regular maintenance are needed to have an efficient water supply.”

OPPORTUNITIES GALORE!

In the wastewater recycling and sewage treatment, there are ample opportunities evolving. **Nagesh Veeturi, Executive Director – Civil, KEC International**, says, “Interestingly, the tertiary



NAGESH VEETURI
Executive Director – Civil
KEC International

treatment of domestic sewage for use in industries is being adopted in many cities. Going forward, we anticipate this to be a compulsive factor for all STPs. With the rate at which freshwater resources are getting depleted, it would not be a surprise when we shall be forced to use tertiary-treated water for drinking water purposes in future, like it is done in Singapore and some of the developed countries.”

According to Sethi, the dedicated schemes like Jal Jeevan Mission (Rural) having allocated budget of Rs 3.6 lakh crore up to 2024, Jal Jeevan Mission (Urban) having an exclusive budget of Rs 2.87 lakh crore for the duration of 2021-2026, Namami Gange programme with Rs 20,000 crore are some of the flagships programmes that will continue for a longer period. There are other schemes like Pradhan Mantri Krishi Sinchayee Yojana - Har Khetko Pani (Rs 9,050 crore), Dam Rehabilitation and Improvement Project (DRIP) Phase 2 & 3 (Rs 10,200 crore) for the period of 2020-2031, National River Linking Project (Rs 22,495 crore), Atal Mission for Rejuvenation and Urban Transformation (AMRUT 2.0) with a massive allocation of Rs 2.99 lakh



crore for five years up to 2026, National Hydrology Programme with Rs 3,680 crore up to year 2024, and Atal Bhujal Yojana with Rs 6,000 crore up to year 2025 are the important government schemes that promise a better prospect for water infrastructure development companies and contractors for the next few years' time.

TOWARDS A SUSTAINABLE FUTURE

Water sustainability is imperative for any country globally. **Ajay Hans, MD & CEO, Welspun Enterprises**, says, “For India, it has to be accorded



AJAY HANS
MD & CEO
Welspun Enterprises


the highest priority given our increasing population and corresponding demand. As discussed above, thus far only 50% of our rural households have access to tap water. We clearly have a long way to go and we are happy to see that the government has ensured that creation of water infrastructure is put on MISSION MODE to achieve time-bound results.”

Water and wastewater treatment are key to sustainability. Industries must strive to innovate to improve the responsible and judicious use of water and minimise the water footprint. **Abhijit Dani, Vice President and Business Unit Head - Process Equipment and Modularisation Business Vertical, Praj Industries**, points out, “The Indian



ABHIJIT DANI
VP and BU Head -
Process Equipment and
Modularisation Business
Vertical, Praj Industries

industries should invest in innovative and sustainable technology required for wastewater treatment and recycle-reuse. Projects that resonate with this year's theme of World Water Day, 'Groundwater: Making the Invisible Visible' should be pursued.”

Going forward, wastewater recycling and rainwater harvesting will play a major role in the sustainable use of water. 



Water requirements are going to grow in the coming years.

ABHIJIT DANI

Vice President and Business Unit Head - Process Equipment and Modularisation business vertical, Praj Industries

How is the concept of water sustainability gaining traction in India?

In a world threatened by climate change, the drive towards an environmentally friendly circular economy is not an option, it is an obligation. According to the UN World Water Development Report (WWDR), wastewater is actually an untapped resource. As per the UNESCO World Water Assessment Programme (WWAP), water is crucial for advancing human rights, reducing poverty and inequality, and enabling peace, justice, and sustainability. The Sustainable Development Goal (SDG) 6 on Clean Water and Sanitation, therefore, provides a unique opportunity to accelerate progress on the 2030 Agenda.

With rapid growth on the back of industrialisation coupled with urbanisation, water requirement in India has been increasing substantially. On the other hand, several scientific studies have shown that groundwater tables are depleting much faster. Severe droughts, scorching summers associated with

climate change, and waning forest cover is making the water scenario worse. There is an increasing concern about the widening demand-supply situation and awareness about water as a precious resource.

The government has introduced several mandates to curb freshwater usage in industries and measures to optimise the water footprint in agriculture. Additionally, stringent regulations and enforcement mechanisms are in place to treat industrial effluent and municipal sewage which is evident from mushrooming of water treatment plants across the nation.

Modern India is more aware, awakened, and responsible and is contributing to recycle-reduce-reuse.

How is recycling of wastewater and its reuse evolving in the country?

Despite being home to 17 per cent of the world's population, India has only four per cent of the world's water resources. According to the World Bank, India is the biggest consumer of fresh water in the world today, accounting for about 750 billion cubic metres annually. The Central Pollution Control Board (CPCB) estimates that by 2030, India's water demand is expected to increase to 1.5 trillion cubic metres.

The concept of wastewater recycling in India was not much discussed until early 90s and only 30 per cent of India's wastewater was recycled. With the advent of the Swachh Bharat Abhiyan in 2014, both rural and urban sanitation coverage has increased substantially, and it has played a crucial role in addressing the issue of wastewater treatment. Building rural toilets, segregation of dry and wet waste in urban areas, and promoting composting kitchen bio-waste are a few revolutionary steps in the cultural shift of mindset of people where everyone is accountable for community health



and sanitation. Urban societies are incorporating stand-alone sewage treatment plants to reduce the burden on local municipal corporations.

The wastewater industry in India calls for the proper participation of governments, urban and local bodies, and small industries in a homogenous public-private partnership.

What are the technologies and solutions offered by the company in wastewater recycling?

Praj's vision is to make the world a better place by developing and deploying innovative technology solutions for sustainability, conservation of the environment and natural resources like water.

Our end-to-end solutions for wastewater management span across the value chain - from concept to commissioning and care for lifecycle.

Praj has been at the forefront in offering the most techno-commercially viable technologies based on the principle of 3Rs – Reduce, Recycle and Reuse – to treat complex industrial effluents.

The regulatory norms around effluent treatment are becoming more stringent day by day, making Zero Liquid Discharge (ZLD) solutions an imperative. A ZLD system implies that practically no liquid waste goes outside the boundaries of the process plants. Evaporation is the process of vaporisation which has been deployed for such ZLD solutions. Though evaporation is considered as heavily energy-intensive, but with Praj's unique heat integration technologies, the total energy requirements can be reduced drastically to ensure energy efficiency.

With more than 1,000 customer references all over the world, Praj has a deep understanding of industrial processes and effluents. Depending on customer requirements, Praj offers a range of solutions such as recycling & reuse, and evaporation & crystallisation in designing ZLD systems. Praj leverages its domain knowledge in the field of Industrial Biotechnology to develop such sustainable solutions.

At Praj, we strongly believe that the purpose of the business is to contribute beyond the financial goals with technology and innovation at its core, leading to sustainable development and a greater good for mankind.

How important is water sustainability in the country in the coming years? What kind of projects will help in sustainable use of water?

The existence of ecological balance depends heavily on the availability of fresh and potable water supply. Thus, water is the most vital component of our survival.

India is tipped as the fastest growing economy among the G20 nations as well as the developing nations, water requirements are going to grow in the coming years. Therefore, deploying best practices for responsible water usage and harnessing technological advancements for optimising water footprints is imperative.



The projects like Effluent Treatment Plant (ETP) for the industry and Sewage Treatment Plant (STP) for the society will be of utmost importance in recycling the water. Projects that help conform to statutory norms such as Ganga Action Plan (GAP), helping rivers stay pollution-free have a big role to play. Household water management systems that allow water recycling for sanitary and garden usage, while minimising freshwater requirements for cooking should be encouraged. Harvesting rainwater should be made mandatory for residential and commercial buildings.

The Indian industries should invest in innovative and sustainable technology required for wastewater treatment and recycle-reuse. Projects that resonate with this year's theme of World Water Day, 'Groundwater: Making the Invisible Visible' should be pursued.

Water and wastewater treatment are key to sustainability. Industries must strive to innovate to improve the responsible and judicious use of water and minimise the water footprint.

We hope that in times to come, water recycle-reuse will become a Way of Life! 