INTERVIEW

"Water use patterns will lead to a severe crisis by 2050"

Rishabh Sethi, Chief Operating Officer, SPML Infra Limited, shares his views on the huge scope of growth in the country for water recycling and purification of drinking water, and his company's upcoming projects in this space.

What is driving the water and wastewater management in the country?

India, with only 4 per cent of the world's fresh water resources, holds almost 18 per cent of the world's population. Water, with no substitute, continues to escalate at unsustainable rates, driven by economic development, population increase, agriculture growth and industrial expansion. The resources remain constant in terms of quantity whereas the quality is being worsened as a result of human activities and their effects.

The key demand drivers are:

- Population growth
- Increased per capita water consumption in domestic, commercial and industrial establishments
- Demand of food grains increasing due to growing population and increasing consumption
- Increase in water-intensive agriculture produce like wheat, rice etc.
- Expansion of water-intensive industries like power, iron & steel, sugar, chemical etc.
- Poor water management, leakages, non-revenue water, lack of wastewater treatment facilities
- Climate conditions, extreme events both in frequency and magnitude, among others...

It is estimated that the average domestic water demand in India would increase from 85 liters per capita per day (lpcd) in 2000 to 125 in 2025 and 170 lpcd by 2050 whereas the urban water demand will be 200 lpcd in 2025 and 220 lpcd by 2050. India today has the largest agricultural network in the world and also the largest user of water for agriculture that accounts for about 70 per cent of the total freshwater abstraction. The industry accounts for 22 per cent of the freshwater consumption and remaining 8 per cent is used by the households. India's total water demand will increase by 22 per cent or 833 Bm3 by the year 2025 and to 32 per cent or 900 Bm3 by 2050 from the year 2000 level of 680 billion cubic meters.

With the rapid population and industrial growth, the domestic and industrial sectors will account for 85 per cent of the additional demand by 2050. It is also predicted that nine river basins, comprising 75 per cent of the total population, will be physically water-scarce and there will be regions with severely overexploited groundwater resources. Although future food demand can be met, the associated water use patterns will lead to a severe water crisis by 2050. It is projected that India's population will reach 1.64 billion in 2050, half of them urban and half of them rural would need 9 million hectare meters of water to meet their domestic needs.

In the last one decade, one-third of India's population has become urban. It is expected that India's urban population will reach 465 million by 2020 from the existing 370 million. The growth of the Indian economy has also increased water usage across sectors. As a result, fresh water resources are depleting and wastewater is increasing significantly and the facilities to treat wastewater are not adequate in urban India. Presently, only about 20 per cent of the generated wastewater is treated; the rest is discharged into the ground and water bodies without any treatment.

In recent years, India's water sector has developed rapidly with the inflow of Central government funds, the reform agenda of the government and the programs of the international donors, the World Bank, Asian Development Bank (ADB) and Japanese aid agency JICA. The most significant change in the past five years has been the entry of the Central government as a major

source of financing in the sector. Almost Rs 42,000 crore were allocated to water, sewerage and drainage projects in major cities through JNNURM's urban infrastructure fund. The leading international donor in India's water sector, JICA, allocated a further Rs 21,000 crore in the past seven years. JICA currently spends almost 21 per cent of its budget in India to water and sanitation projects and it's on the rise. The World Bank approved around Rs 16,500 crore for water supply and sanitation projects in India over the same time period, including Rs 6000 crore for the National Ganga River Basin project, the first donor project to focus on surface water quality. Projects worth a further Rs 6000 crore are expected to be approved before 2015, covering both urban and rural water by the World Bank. The Asian Development Bank (ADB) has allocated around Rs 9,000 crore to meet national water and sanitation policy goals in India since 2006. Two major new projects are under consideration – a Rs 1,200 crore loan for water supply in Delhi and another Rs 2,400 crore credit for water and wastewater infrastructure in Kolkata by ADB.

What is the growth potential of the market?

The Indian water industry is on the crossroads today. In a developing country with huge requirements for water recycling and purification of drinking water, there is a huge scope for growth. The total Indian water market is estimated to be about $12 billion. While the government sector contributes about 50 per cent of this, the private sector provides the remaining business. The overall market is growing at 18 per cent every year.

The market has undergone a tremendous change in the last few years. Today, there are dozens of medium-sized companies who have rapidly increased their operations. Also hundreds of small system-integrators have come up all over the country, addressing local requirements. In the last few years, many international companies have also entered the Indian market. Indigenous development of various treatment components like resins, RO membranes and vessels have reduced costs and made various technologies easily available on a mass scale. The other interesting trend in the market has been towards standardisation of treatment systems as typical DM and RO plants have become more common over the last two years.

Strong political support is evident now to water and wastewater sectors at every level of Central and State governments, sector policies and regulations are being improvised to be more attractive to the private sector. The financial market is showing growth to prepare adequate instruments and capacity to meet the requirement of long-term equity needed by water infrastructure projects. The Ministry of Water Resources is working on its five long term plans: to interlink 31 rivers in next 10 years keeping in mind the climate and aqua life of rivers that will help in controlling floods and drought; Ganga cleaning in next 10 years; Yamuna cleaning with the help of Delhi government on priority basis; river Saraswati project to locate the route of the long lost river as the route will have a higher water table, which would be of great help to the farmers around that area and 2015-16 would be observed as the 'Year of Water Conservation'. Several thousands of crore rupees are planned to be spent on these projects. Along with these, there is an ambitious project of developing 100 smart cities that would require huge funds for creating and maintaining water and wastewater infrastructure.

How has the industry's approach to water management changed over the years as availability of freshwater is becoming a daunting challenge?

Countries across the globe including India are facing the challenge of rapidly-growing water demand, driven by ever-increasing population and economic growth with emerging trends of urbanisation and industrialisation. The water scarcity problem is not only a result of quantitative or qualitative scarcity but also a consequence of inefficient use and poor water management that has been recognised in India's draft Water Policy of 2012. According to the 2030 Water Resources Group, demand for water in India is set to outstrip supply by 50 per cent by the year 2030. A significant challenge faced by India is therefore to increase conservation of water across operations and geographies.

The World Health Organization's finding says that 1.6 million people die every year from diarrheal diseases due to lack of safe drinking water and basic sanitation. 90 per cent of these are children under the age of 5, mostly in developing countries including India. Safe drinking water and hygienic sanitation facilities is a requirement to fight against poverty and hunger in the world where over a billion people have no access to any source of drinking water.

Why Scarcity

- Increase in water requirements due to ever-increasing population
- Easily available sources of water, tapped irrationally
- Contamination of available water sources due to increase in human activities
- Large-scale industrial development
- Water-intensive agriculture produce
- Human needs and desire for higher standards of living
- Delay in infrastructure project initiation time due to increasing social and environmental concerns.

India being the second-largest urban population in the world, estimated that rapid urbanisation will add nearly 900 million people to Indian cities by 2050. City capacity will need to grow nearly 400 per cent in less

than 40 years from now. The already under pressure water supply, sewerage and drainage system will face a tremendous task to cope up with the demands. Recent data suggests that water supply is available for 2.9 hours per day across cities and towns. The non-revenue water that includes physical and revenue losses, accounts for 50-60 per cent of total water supply. About 50 per cent households in the cities do not have sewerage connections and less than 20 per cent of total wastewater is treated. In industrial sectors, several industries have been shut down in different cities due to lack of water sources and non-availability of water supply by the municipalities. Water-intensive industries are facing acute shortage which hampers their production capacities. This has given importance to used water recycling and reuse and zero liquid discharge will be the norm for all industries in future.

What are the biggest challenges being faced by the water and wastewater management companies in the country?

A study of water and wastewater management in 71 Indian cities indicates that these cities produce nearly 40,000 million litres of wastewater per day. But the sewage treatment capacity developed so far is only around 12,000 million litres per day leaving a big gap of almost 70 per cent. CPHEEO estimates that about 70-80 per cent of total water supplied for domestic use gets generated as wastewater. The large gap between the generation of wastewater and its treatment has led to large scale ground water contamination.

The biggest challenge of all is the slow pace of implementation of policy reforms in India. Aging infrastructure, managing operational costs, availability of funding and managing capital costs remain among the top issues in the water sector. Water scarcity issue will bring strong focus on fixing leaks in aging infrastructure to conserve water resources with improving operational efficiency. We expect that the current government would take special interest in water sector and there will be far reaching reforms in the coming year. There should be an Independent Regulatory Authority (IRA) in India at national level with chapters in all States to resolve any disputes related to water. There will be clear guidelines for bulk and retail water tariff determination and greater emphasis would be for ensuring quality and service standards. We also see that the more impetus would be on planning and approval of new projects, review of held-up projects, appropriate regulation for private participation, enhanced government spending on infrastructure development and improvement and concentrated efforts towards ground water recharge and pollution control measures.

But, with the business environment improving, one can expect several new initiatives aimed at water supply, wastewater and sanitation sector. Different industrial segments also offer varied potential for the wastewater treatment markets. Old technologies, traditional methods and aging infrastructure present challenges. In the absence of a proper discharge and reuse of treated water utilisation, in most cases the treated water is released to the sewer line thus making the whole effort inept. The replacement or retrofitting of assets poses another challenge in wastewater treatment.

What are the solutions that you have on offer for this segment?

With more than three decades of experience, SPML Infra has gained a strong foothold in the area of design and construction of water and wastewater treatment plants, water supply systems, operation & maintenance. SPML has been promoting sustainable water management – a task that is increasingly becoming important and complex as natural supplies deplete and demand rises. Whether it's water supply or wastewater treatment, SPML makes an important contribution towards conserving the precious resource across the nation. SPML has adopted modern treatment techniques and provides solutions for proper treatment and disposal of municipal and industrial wastewater to ensure that the generated wastewater does not harm our delicate ecosystem and is recycled for further usage. SPML is committed to sustainable water management through effectively managing capital, life-cycle costs and regulatory requirements. It actively strives for excellence and delivers projects within prescribed time periods as per agreed quality assurance procedures with clients.

What are the key projects that you are working upon in this sector? Could you share some details about those projects?

SPML Infra is a leading water management company of India and has executed over 600 turnkey projects in water and wastewater sectors and created significant value for our country thus touching the lives of millions of people; be it provision of drinking water, wastewater treatment & management and improved sewerage facilities among others. With over three decades of experience, SPML Infra has become the only Indian company to be featured into World's Top 50 Private Water Management Companies as per the latest survey by Global Water Intelligence. Presently, SPML is executing a number of water supply projects in different States.

- GARIMA PANT

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